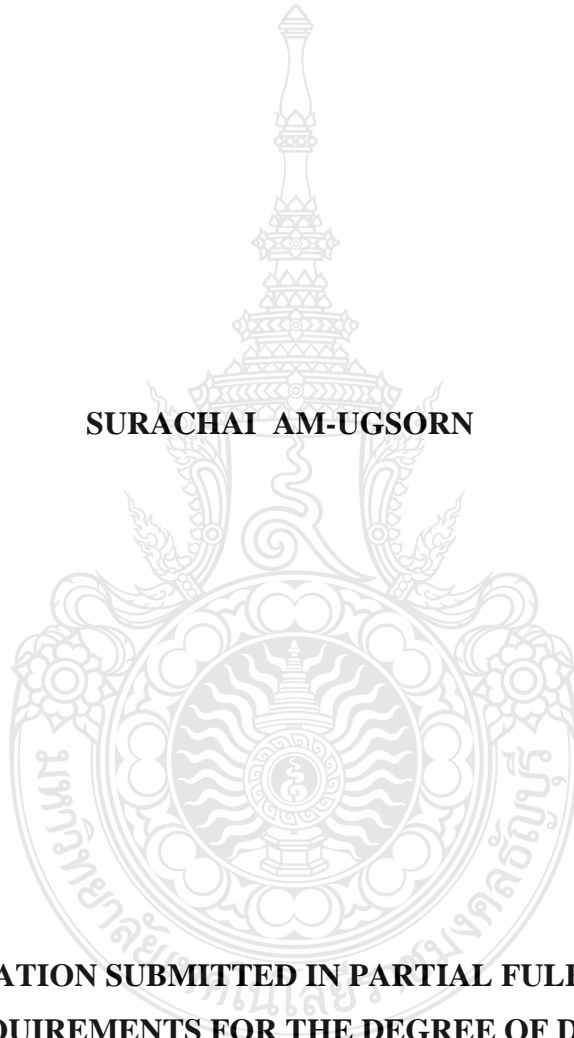


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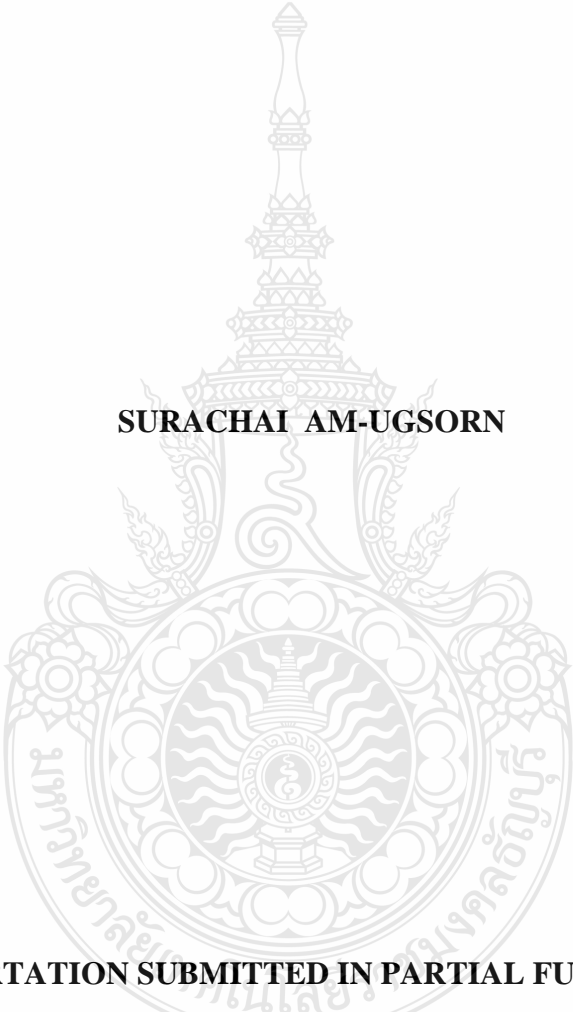
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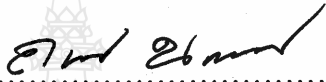
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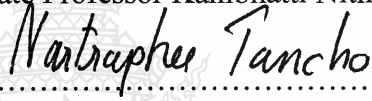


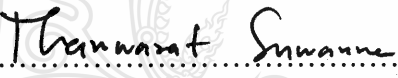
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Dissertation Title Mediating Effect of Accounting Conservatism on the Relationship between Corporate Governance and Cost of Capital
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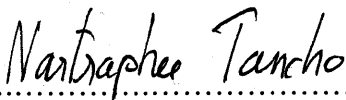

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September 25, 2022

หัวข้อคุณสมบัติ	อิทธิพลส่งผ่านของความระมัดระวังทางบัญชีต่อความสัมพันธ์ระหว่าง การกำกับดูแลกิจการกับต้นทุนเงินทุน
ชื่อ-นามสกุล	นายสุรชัย เอ็มอักษร
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ปีการศึกษา	2565

บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาอิทธิพลทางตรงของการกำกับดูแลกิจการ และความระมัดระวังทางบัญชีต่อต้นทุนเงินทุน อิทธิพลทางตรงของการกำกับดูแลกิจการต่อความระมัดระวังทางบัญชี และอิทธิพลทางอ้อมของการกำกับดูแลกิจการต่อต้นทุนเงินทุนผ่านความระมัดระวังทางบัญชี โดยการกำกับดูแลกิจการที่ใช้งานวิจัยนี้เป็นไปตามหลักการกำกับดูแลกิจการที่ดีสำหรับบริษัทจดทะเบียน ปี 2560 ได้แก่ หลักปฏิบัติ 3 เสริมสร้างคณะกรรมการที่มีประสิทธิภาพ ประกอบด้วย ขนาดของคณะกรรมการ ความเป็นอิสระของคณะกรรมการ การไม่ควมตำแหน่งผู้บริหารของคณะกรรมการ ความเชี่ยวชาญของคณะกรรมการ จำนวนครั้งการประชุมของคณะกรรมการ การเข้าร่วมประชุมของคณะกรรมการ ค่าตอบแทนคณะกรรมการ หลักปฏิบัติ 4 สรรหาและพัฒนาผู้บริหารระดับสูงและการบริหารบุคคล ประกอบด้วย ค่าตอบแทนผู้บริหาร การถือหุ้นของคณะกรรมการ การถือหุ้นของผู้บริหาร การถือหุ้นของบุคคลในครอบครัว และหลักปฏิบัติ 6 ดูแลให้มีระบบการบริหารความเสี่ยงและการควบคุมภายในที่เหมาะสม ประกอบด้วย ขนาดของคณะกรรมการตรวจสอบ และความเชี่ยวชาญด้านบัญชีของคณะกรรมการตรวจสอบ

ประชากรที่ใช้ในการวิจัยครั้งนี้ คือ บริษัทที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย ตั้งแต่ปี 2562 ถึงปี 2563 จำนวนทั้งสิ้น 789 บริษัท โดยยกเว้น บริษัทในกลุ่มธุรกิจการเงิน กองทุนรวม อสังหาริมทรัพย์และกองทรัสต์เพื่อการลงทุนในอสังหาริมทรัพย์ บริษัทที่อยู่ในช่วงฟื้นฟูกิจการ ได้กลุ่มตัวอย่างที่มีข้อมูลครบถ้วนสำหรับการวิจัย จำนวน 906 ข้อมูล สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ five-year rolling regression เพื่อคำนวณค่าระดับความระมัดระวังทางบัญชี และการวิเคราะห์การถดถอยพหุคูณเพื่อทดสอบอิทธิพลทางตรงและอิทธิพลทางอ้อมของความระมัดระวังทางบัญชีที่มีต่อความสัมพันธ์ระหว่างการกำกับดูแลกิจการกับต้นทุนเงินทุนของบริษัท

ผลการศึกษา พบว่า ความเชี่ยวชาญของคณะกรรมการ การเข้าร่วมประชุมของคณะกรรมการ ค่าตอบแทนคณะกรรมการ และค่าตอบแทนผู้บริหาร ส่งผลให้ต้นทุนเงินทุนของบริษัทลดลง ความเชี่ยวชาญของคณะกรรมการ จำนวนครั้งการประชุมของคณะกรรมการ การเข้าร่วมประชุมของคณะกรรมการ ค่าตอบแทนคณะกรรมการ ค่าตอบแทนผู้บริหาร การถือหุ้นของบุคคลในครอบครัว และขนาดของคณะกรรมการตรวจสอบ ส่งผลให้ความระมัดระวังทางบัญชีของบริษัทสูงขึ้น โดยความระมัดระวังทางบัญชีมีอิทธิพลทางลบต่อต้นทุนเงินทุนของบริษัท และพบว่า ความระมัดระวังทางบัญชีส่งผ่านอิทธิพลบางส่วนของความเชี่ยวชาญของคณะกรรมการ ค่าตอบแทนคณะกรรมการ และค่าตอบแทนผู้บริหารไปยังต้นทุนเงินทุนของบริษัท อย่างไรก็ตาม ความระมัดระวังทางบัญชีส่งผ่านอิทธิพลแบบสมบูรณ์ของการเข้าร่วมประชุมของคณะกรรมการบริษัทไปยังต้นทุนเงินทุนของบริษัท

คำสำคัญ: การกำกับดูแลกิจการ ความระมัดระวังทางบัญชี ต้นทุนเงินทุน อิทธิพลการส่งผ่าน



Dissertation Title	Mediating Effect of Accounting Conservatism on the Relationship between Corporate Governance and Cost of Capital
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ABSTRACT

The objectives of this research were to examine the direct effect of corporate governance and accounting conservatism on cost of capital, the direct effect of corporate governance on accounting conservatism, and the indirect effect of corporate governance on cost of capital through accounting conservatism. The corporate governance used in this research was based on the Corporate Governance Code for Listed Companies 2017, specifically Principle 3: strengthen board effectiveness: board size, board independence, non-board duality, board expertise, board meeting, board attendance, and board compensation; Principle 4: ensure effective chief executive officer (CEO) and people management: CEO compensation, director ownership, CEO ownership, and family ownership; and Principle 6: strengthen effectiveness risk management and internal control: audit committee size and audit committee with financial expertise.

The population used in this study were 789 companies listed on the Stock Exchange of Thailand from 2018 to 2019, excluding companies in the financial industry group, property fund & real estate investment trust sector, and companies in rehabilitation. In total, 906 firm-year observations with complete data were collected. The statistical methods used to analyze the data were five-year rolling regression to calculate the level of accounting conservatism along with multiple linear regression to test the direct and the indirect effects of accounting conservatism on the relationship between corporate governance and cost of capital.

The study results revealed that board expertise, board attendance, board compensation, and CEO compensation reduced the company cost of capital. Board

expertise, board meeting, board attendance, board compensation, CEO compensation, family ownership, and audit committee size increased the company accounting conservatism. Accounting conservatism had a negative influence on the company cost of capital. Moreover, it was found that accounting conservatism partially mediated the influence of board expertise, board compensation and CEO compensation on cost of capital. However, accounting conservatism fully mediated the influence of board attendance on cost of capital.

Keywords: corporate governance, accounting conservatism, cost of capital, mediating effect



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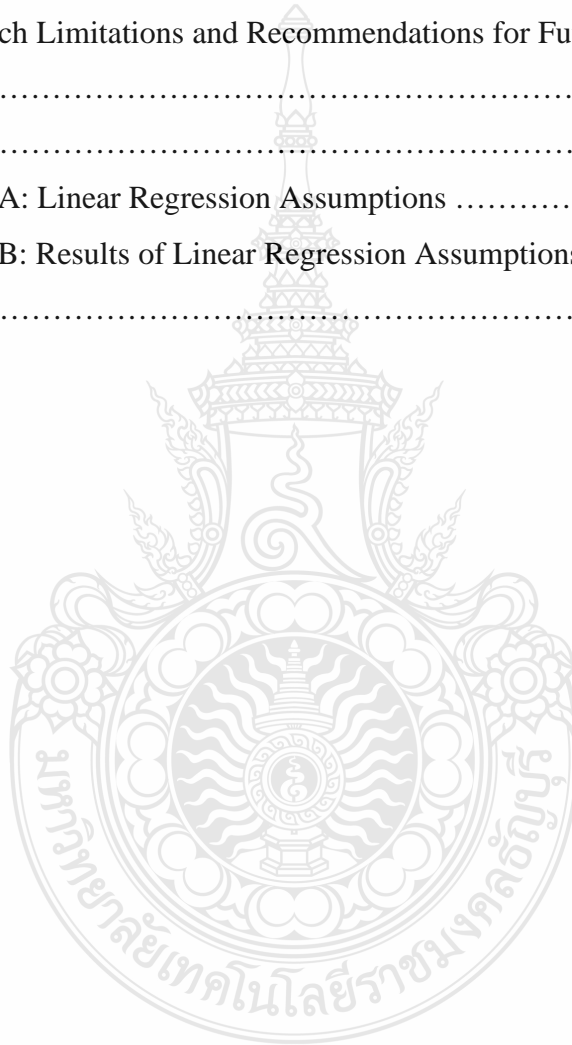
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CHAPTER 1

INTRODUCTION

1.1 Background and Statement of the Problem

The Stock Exchange of Thailand is considered an important source of funding for both Thai and foreign investors in the ASEAN region. With a total market capitalization of USD 545 billion, the Stock Exchange of Thailand is the 2nd highest after Singapore as of February 2019 according to the World Federation of Exchanges (SET, 2019). Thus, the stock market plays an important role in building investor confidence by applying good corporate governance in order to provide information that reflects the market price of securities, trading volume, and adding value of the business (Pipatanasern & Srijunpetch, 2017). Furthermore, accounting information under good corporate governance is becoming increasingly important in business operations today where uncertainties arise. For example, subprime mortgage crisis in the United States during 2007-2008 arose due to loans for high-risk investments in real estate, while the real estate prices declined (Donadelli, 2015). The COVID-19 pandemic is also another example of crises that have a severe impact on the global economy.

Due to the COVID-19 pandemic, the stock markets have fallen dramatically, including the Dow Jones and FTSE experiencing their biggest quarterly declines in the first three months of the year since the Black Monday crash of 1987 (BBC, 2020). The magnitude and duration of the economic impact of the COVID-19 outbreak leads to lower sales. It also forces companies to reduce employment, and operating costs to avoid bankruptcy. Investors and shareholders have to encounter volatility. To make an investment decision, investors rely more on accounting data, such as quality information reflecting economic events that affect the firm performance in a timely manner, adequate information disclosure for capital markets and investors during the Covid-19 pandemic. The accounting policy that leads to quality information is accounting conservatism that regulates managers to disclose information to reduce information asymmetry among managers, and investors. As a result, earnings management is reduced, and expectations of future accounting income become more accurate which leads to higher firm value (Nuanpradit, 2014). According to Cui, Kent, Kim, and Li (2021), the firms that have

applied more conditionally conservative reporting have lower declines in stock return performance during the Covid-19 outbreak relative to other firms.

Several financial reporting standards place an emphasis on accounting conservatism. For example, IAS 16: Property, Plant and Equipment (Bound volume 2020) indicated that “If a revaluation results in an increase in value, it should be credited to other comprehensive income and accumulated in equity under the heading "revaluation surplus" unless it represents the reversal of a revaluation decrease of the same asset previously recognised as an expense, in which case it should be recognised in profit or loss.”, and IAS 36: Impairment of Assets (Bound volume 2020) stated that “An impairment loss is recognised whenever recoverable amount is below carrying amount. The impairment loss is recognised as an expense”

For certain companies, implementing accounting standards may be against the intentions of managers whose expected returns depend on the value of the stock. Such managers conceal their firm performance to stake holders, and manipulate their earnings to be higher which cause inaccurate earnings signal, and information asymmetry between managers and external users of financial statements (McNichols & Stubben, 2008). Numerous studies have revealed that accounting conservatism reduces earning manipulation, especially in firms with high information asymmetry (Garcia Lara, Osma, & Penalva, 2011; Kim & Zhang, 2016; LaFond & Watts, 2008; Lara, Osma, & Penalva, 2014). Thus, accounting conservatism is a reliable fundamental aspect of quality financial reporting which reduces information asymmetry (Mohammed, Ahmed, & Ji, 2010).

Company policies whether in terms of management, finance, or accounting depend on the board of directors. Thus, the Securities and Exchange Commission imposed guidelines for good corporate governance. Numerous studies have provided evidence that the practice is a mechanism driving accounting conservatism (Boonlert-Uthai & Phakdee, 2018; Boussaid, Hamza, & Sougne, 2015; Sultana, 2015). However, certain characteristics of the board of directors, such as board size and board independence also obstruct the use of accounting conservatism (Chi, Liu, & Wang, 2009; Lim, 2011). In case accounting conservatism is applied by the board of directors to present financial information, it reduces capital cost of the firm since timely reporting of losses under accounting conservatism is considered reliable information for investors'

equity risk assessment. Thus, firms that act align with accounting conservatism in order to obtain risk premiums are rewarded (Guay & Verrecchia, 2017), and have lower cost of equity capital (Garcia Lara et al., 2011). When the cost of equity capital is used as a discount rate to calculate future cash flows from the investments in each project, the NPV of the project will be more positive.

Compensation of the management and board members is another mechanism that enables the board and executives to adopt policies that benefit shareholders. According to the fact that the management can access to internal information of the company, if their compensation is linked with revenue report, they may avoid any information affecting the earnings of the firm, as well as his compensation (Basu, 1997). Thus, accounting conservatism tends to be less applicable. With high compensation granted by the firm, the management tend to have risk-seeking behavior, and conflicts between creditors and debtors become more intensified. As a result, firms would rather apply timely loss recognition to be in accordance with creditors' agreements (Brockman, Ma and Ye, 2015).

In emerging economies, major shareholders also act as the management of the firm (Wei & Zhang., 2008). This is in line with Wiwattanakantang (2001), who stated that the shareholder structure of firms in emerging markets is concentrated ownership. Type 2 agency problem occurs when most of the shares are owned by controlling shareholders, including directors, and CEO. Type 2 agency problem is a conflict between a controlling shareholder and a non-controlling shareholder (Fama & Jensen, 1983). In other words, controlling shareholder is the cause of applying different accounting conservatism to revenue reporting (Ismail, Kamarudin, & Othman, 2012). According to the concept of incentive alignment effect, if the management are motivated to add more value to the company rather than their own interests, it requires less accounting conservatism (LaFond & Roychowdhury, 2008). However, the management holding a lot of shares protect their own interests, and their shareholding is positively correlated with accounting conservatism according to the concept of the management entrenchment effect, which is also found by Shuto and Takada (2010) in Japan.

In addition, the shareholder structure also results in different cost of capital. Lin, Ma, Malatesta, and Xuan (2011) found that family ownership increases not only

monitoring costs but also cost of debt due to high credit risk. Similarly, firms with managerial ownership reflects that the management transfer benefits from minority shareholders to the management, which cause high agency risk, monitoring cost, and cost of equity (Collins & Huang, 2011). Thus, to ensure investors, firms with managerial ownership structure requires high accounting conservatism (Majeed, Zhang, & Wang, 2017b) since accounting conservatism reflects earnings quality that is used to assess the reliability of the firm (Asri & Habbe, 2017). Moreover, accounting conservatism reduces earnings management by controlling the managers not to invest in projects with negative NPV. In fact, firms have to recognize losses from investments in negative NPV projects more quickly than gains from investments in positive NPV projects (Francis & Martin, 2010). This allows investors to more accurately estimate future cash flows (AlNajja & Riahi-Belkaoui, 2001; Johnson, 1999; Nuanpradit, 2014) since lower information asymmetry leads to lower required rate of return on equity (Chun, 2018).

Since the majority shareholder structure in Thailand is concentrated ownership, and family ownership (Wiwattanakantang, 2001), in-house capital and private equity loans are often used to prevent loss of business control (Rahman, Yammeesri, & Perera, 2010). This is in line with pecking order theory of Myers and Majluf (1984) that the use of internal sources of capital is retained earnings. If it is insufficient, external financing by incurring debt before issuing new equity shares will be used. According to this theory, the majority of Thai firms' capital structures tend to be debt structures rather than equity structures. It is assumed that the firm's earnings data may be forced by creditors to report based on conservatism concept (Ball, Robin, & Sadka, 2008; Beatty, Weber, & Yu, 2008; Nikolaev, 2010) to reduce risk of default payment. When creditors are low-risk, they charge low interest rates, and the cost of capital of the company is lower (Sodan, 2012). Moreover, Ahmed, Billings, Morton, and Harris (2002) found that accounting conservatism reduces conflicts between equity holders and bondholders by preventing exorbitant dividend payments from their earnings. When creditors are more secure, interest rates become lower (Zhang, 2008).

In 2010, standard setters of the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) removed accounting conservatism from qualitative characteristics of useful financial information since it is

against the principle of neutrality. As a result, professional accountants have been opposed to accounting conservatism in favor of “true and fair presentation” since 2010. This is confirmed by a quote revealing the judgment of a professor in finance: ‘Conservatism is under attack ... some ... even the FASB ... are now suggesting it may be better to abandon conservatism ... to show more unbiased financial statements.’ (Oreshkova, 2017). On 29 March 2018, the International Accounting Standard Board (IASB) published the revised conceptual framework for financial reporting by reinstating accounting conservatism which has been enforced since 1 January 2021. Thus, it is possible that, during 2018 and 2019, there were professional accountants, including audit committees with accounting knowledge who accepted and opposed to accounting conservatism due to inconsistencies with the principle of neutrality.

It is interesting to study indirect effect of board structure, board activity, compensation, shareholder structure and audit committee on cost of capital through mediation role of accounting conservatism for the benefit of those who use accounting data to make decisions, businesses, regulators, and those who set accounting standards. In other words, the results of this study support agency theory that accounting conservatism reduces agency problems, and increase the firm value (LaFond & Watts, 2008; Watts, 2003). With accounting conservatism, investors and creditors have more confidence in using accounting earnings as an important factor in determining firm performance and firm value in various critical situations accurately. This is in line with Cui et al. (2021), who showed that accounting conservatism helps firms during economic situations, such as the COVID-19 pandemic.

1.2 Research Objectives

1.2.1 To examine the direct effect of board structure, board activity, compensation, shareholder structure, and audit committee on cost of capital,

1.2.2 To examine the direct effect of board structure, board activity, compensation, shareholder structure, and audit committee on accounting conservatism,

1.2.3 To examine the direct effect of accounting conservatism on cost of capital, and

1.2.4 To examine the indirect effect of board structure, board activity, compensation, shareholder structure, and audit committee on cost of capital through accounting conservatism.

1.3 Research Questions and Hypotheses

The research questions and hypotheses of this study are as follows:

1.3.1 Research Questions:

1.3.1.1 Do board structure, board activity, compensation, shareholder structure and audit committee have direct effect on cost of capital?

1.3.1.2 Do board structure, board activity, compensation, shareholder structure and audit committee have direct effect on accounting conservatism?

1.3.1.3 Does accounting conservatism have direct effect on cost of capital?

1.3.1.4 Do board structure, board activity, compensation, shareholder structure and audit committee have indirect effect on cost of capital through accounting conservatism?

The research methodology is a cross-sectional, quantitative analysis of the relationship between the variables of the literature review. These variables included board structure, board activity compensation, shareholder structure and audit committee (independent variables), accounting conservatism (intervening variable), and cost of capital (dependent variables). Control variables, including leverage ratio, total asset, year and industry fixed effects. Thus, it is essential to find such relationship in this research. The research framework is as follows:

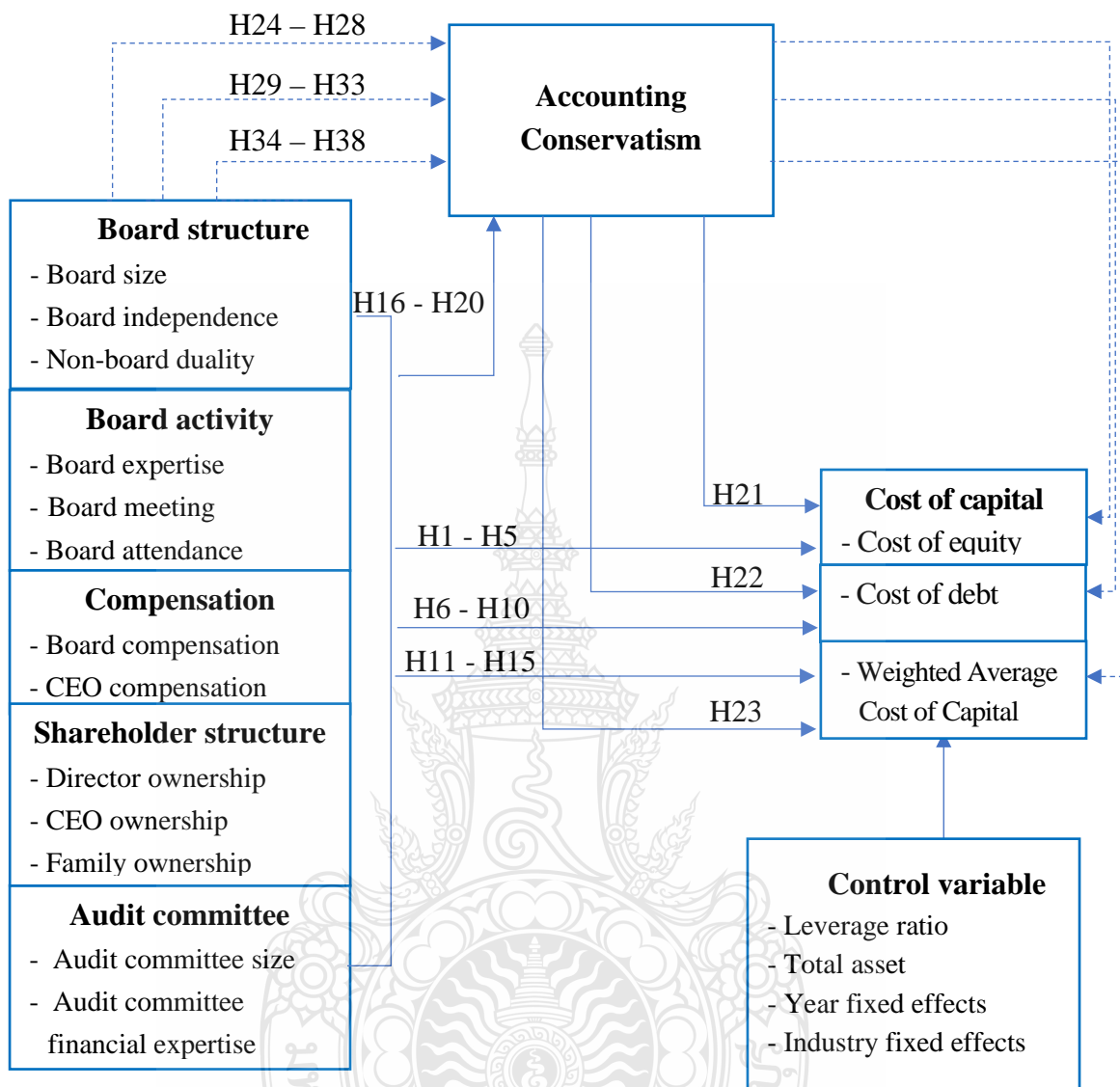


Figure 1.1 Research Framework

1.3.2 Research Hypotheses:

H1: There is a negative effect of board structure on cost of equity.

H1a: There is a negative effect of board size on cost of equity.

H1b: There is a negative effect of board independence on cost of equity.

H1c: There is a negative effect of non-board duality on cost of equity.

H2: There is a negative effect of board activity on cost of equity.

H2a: There is a negative effect of board expertise on cost of equity.

- H2b: There is a negative effect of board meeting on cost of equity.
- H2c: There is a negative effect of board attendance on cost of equity.
- H3: There is a negative effect of compensation on cost of equity.
- H3a: There is a negative effect of board compensation on cost of equity.
- H3b: There is a negative effect of CEO compensation on cost of equity.
- H4: There is a negative effect of shareholder structure on cost of equity.
- H4a: There is a negative effect of director ownership on cost of equity.
- H4b: There is a negative effect of CEO ownership on cost of equity.
- H4c: There is a negative effect of family ownership on cost of equity.
- H5: There is a negative effect of Audit committee on cost of equity.
- H5a: There is a negative effect of audit committee size on cost of equity.
- H5b: There is a negative effect of audit committee financial expertise on cost of equity.
- H6: There is a negative effect of board structure on cost of debt.
- H6a: There is a negative effect of board size on cost of debt.
- H6b: There is a negative effect of board independence on cost of debt.
- H6c: There is a negative effect of non-board duality on cost of debt.
- H7: There is a negative effect of board activity on cost of debt.
- H7a: There is a negative effect of board expertise on cost of debt.
- H7b: There is a negative effect of board meeting on cost of debt.
- H7c: There is a negative effect of board attendance on cost of debt.
- H8: There is a negative effect of compensation on cost of debt.
- H8a: There is a negative effect of board compensation on cost of debt.
- H8b: There is a negative effect of CEO compensation on cost of debt.
- H9: There is a negative effect of shareholder structure on cost of debt.
- H9a: There is a negative effect of director ownership on cost of debt.
- H9b: There is a negative effect of CEO ownership on cost of debt.
- H9c: There is a negative effect of family ownership on cost of debt.
- H10: There is a negative effect of audit committee on cost of debt.
- H10a: There is a negative effect of audit committee size on cost of debt.

- H10b: There is a negative effect of audit committee financial expertise on cost of debt.
- H11: There is a negative effect of Board structure on WACC.
- H11a: There is a negative effect of board size on WACC.
- H11b: There is a negative effect of board independence on WACC.
- H11c: There is a negative effect of non-board duality on WACC.
- H12: There is a negative effect of Board activity on WACC.
- H12a: There is a negative effect of board expertise on WACC.
- H12b: There is a negative effect of board meeting on WACC.
- H12c: There is a negative effect of board attendance on WACC.
- H13: There is a negative effect of compensation on WACC.
- H13a: There is a negative effect of board compensation on WACC.
- H13b: There is a negative effect of CEO compensation on WACC.
- H14: There is a negative effect of shareholder structure on WACC.
- H14a: There is a negative effect of director ownership on WACC.
- H14b: There is a negative effect of CEO ownership on WACC.
- H14c: There is a negative effect of family ownership on WACC.
- H15: There is a negative effect of audit committee on WACC.
- H15a: There is a negative effect of audit committee size on WACC.
- H15b: There is a negative effect of audit committee financial expertise on WACC.
- H16: There is a positive effect of board structure on accounting conservatism.
- H16a: There is a positive effect of board size on conservatism.
- H16b: There is a positive effect of board independence on conservatism.
- H16c: There is a positive effect of non-board duality on conservatism.
- H17: There is a positive effect of board activity on accounting conservatism.
- H17a: There is a positive effect of board expertise on conservatism.
- H17b: There is a positive effect of board meeting on conservatism.
- H17c: There is a positive effect of board attendance on conservatism.

- H18: There is a positive effect of compensation on accounting conservatism.
H18a: There is a positive effect of board compensation on conservatism.
H18b: There is a positive effect of CEO compensation on conservatism.
- H19: There is a positive effect of shareholder structure on accounting conservatism.
H19a: There is a positive effect of director ownership on conservatism.
H19b: There is a positive effect of CEO ownership on conservatism.
H19c: There is a positive effect of family ownership on conservatism.
- H20: There is a positive effect of audit committee on accounting conservatism.
H20a: There is a positive effect of audit committee size on conservatism
H20b: There is a positive effect of audit committee financial expertise on conservatism.
- H21: There is a negative effect of accounting conservatism on cost of equity.
- H22: There is a negative effect of accounting conservatism on cost of debt.
- H23: There is a negative effect of accounting conservatism on WACC.
- H24: There is a negative indirect effect of board structure on cost of equity through accounting conservatism.
H24a: There is a negative indirect effect of board size on cost of equity through accounting conservatism.
H24b: There is a negative indirect effect of board independence on cost of equity through accounting conservatism.
H24c: There is a negative indirect effect of non-board duality on cost of equity through accounting conservatism.
- H25: There is a negative indirect effect of board activity on cost of equity through accounting conservatism.
H25a: There is a negative indirect effect of board expertise on cost of equity through accounting conservatism.
H25b: There is a negative indirect effect of board meeting on cost of equity through accounting conservatism.
H25c: There is a negative indirect effect of board attendance on cost of equity through accounting conservatism.

- H26: There is a negative indirect effect of compensation on cost of equity through accounting conservatism.
- H26a: There is a negative indirect effect of board compensation on cost of equity through accounting conservatism.
- H26b: There is a negative indirect effect of CEO compensation on cost of equity through accounting conservatism.
- H27: There is a negative indirect effect of shareholder structure on cost of equity through accounting conservatism.
- H27a: There is a negative indirect effect of director ownership on cost of equity through accounting conservatism.
- H27b: There is a negative indirect effect of CEO ownership on cost of equity through accounting conservatism.
- H27c: There is a negative indirect effect of family ownership on cost of equity through accounting conservatism.
- H28: There is a negative indirect effect of audit committee on cost of equity through accounting conservatism.
- H28a: There is a negative indirect effect of audit committee size on cost of equity through accounting conservatism.
- H28b: There is a negative indirect effect of audit committee financial expertise on cost of equity through accounting conservatism.
- H29: There is a negative indirect effect of board structure on cost of debt through accounting conservatism.
- H29a: There is a negative indirect effect of board size on cost of debt through accounting conservatism.
- H29b: There is a negative indirect effect of board independence on cost of debt through accounting conservatism.
- H29c: There is a negative indirect effect of non-board duality on cost of debt through accounting conservatism.
- H30: There is a negative indirect effect of board activity on cost of debt through accounting conservatism.

- H30a: There is a negative indirect effect of board expertise on cost of debt through accounting conservatism.
- H30b: There is a negative indirect effect of board meeting on cost of debt through accounting conservatism.
- H30c: There is a negative indirect effect of board attendance on cost of debt through accounting conservatism.
- H31: There is a negative indirect effect of compensation on cost of debt through accounting conservatism.
- H31a: There is a negative indirect effect of board compensation on cost of debt through accounting conservatism.
- H31b: There is a negative indirect effect of CEO compensation on cost of debt through accounting conservatism.
- H32: There is a negative indirect effect of shareholder structure on cost of debt through accounting conservatism.
- H32a: There is a negative indirect effect of director ownership on cost of debt through accounting conservatism.
- H32b: There is a negative indirect effect of CEO ownership on cost of debt through accounting conservatism.
- H32c: There is a negative indirect effect of family ownership on cost of debt through accounting conservatism.
- H33: There is a negative indirect effect of audit committee on cost of debt through accounting conservatism.
- H33a: There is a negative indirect effect of the audit committee size on cost of debt through accounting conservatism.
- H33b: There is a negative indirect effect of audit committee financial expertise on cost of debt through accounting conservatism.
- H34: There is a negative indirect effect of board structure on weighted average cost of capital through accounting conservatism.
- H34a: There is a negative indirect effect of board size on weighted average cost of capital through accounting conservatism.

- H34b: There is a negative indirect effect of board independence on weighted average cost of capital through accounting conservatism.
- H34c: There is a negative indirect effect of non-board duality on weighted average cost of capital through accounting conservatism.
- H35: There is a negative indirect effect of board activity on weighted average cost of capital through accounting conservatism.
- H35a: There is a negative indirect effect of board expertise on weighted average cost of capital through accounting conservatism.
- H35b: There is a negative indirect effect of board meeting on weighted average cost of capital through accounting conservatism.
- H35c: There is a negative indirect effect of board attendance on weighted average cost of capital through accounting conservatism.
- H36: There is a negative indirect effect of compensation on weighted average cost of capital through accounting conservatism.
- H36a: There is a negative indirect effect of board compensation on weighted average cost of capital through accounting conservatism.
- H36b: There is a negative indirect effect of CEO compensation on weighted average cost of capital through accounting conservatism.
- H37: There is a negative indirect effect of shareholder structure on weighted average cost of capital through accounting conservatism.
- H37a: There is a negative indirect effect of director ownership on weighted average cost of capital through accounting conservatism.
- H37b: There is a negative indirect effect of CEO ownership on weighted average cost of capital through accounting conservatism.
- H37c: There is a negative indirect effect of family ownership on weighted average cost of capital through accounting conservatism.
- H38: There is a negative indirect effect of audit committee on weighted average cost of capital through accounting conservatism.
- H38a: There is a negative indirect effect of audit committee size on weighted average cost of capital through accounting conservatism.

H3 8 b: There is a negative indirect effect of audit committee financial expertise on weighted average cost of capital through accounting conservatism.

1.4 Definitions

Board structure refers to qualifications of the board of directors in accordance with the principles of good corporate governance for listed companies in 2017 regulated by the Stock Exchange of Thailand, and the CG Code 2017. The key qualifications and characteristics of the board of directors consists of board size, board independence, and the independence of the chairman.

Board activity refers to activities that each director contributes to effective governance in the company. The expertise of the board can be assessed by being on the board of directors in various companies, the number of meetings of the board of directors in a year, and the proportion of meeting attendance of each director.

Compensation refers to compensation that the firm pays to the board of directors and all executive board of the firm.

Shareholder structure refers to top 10 major shareholders in a company listed on the Stock Exchange of Thailand. This study only concentrates on shareholder structure with the power in determining the company's policy only, such as director ownership, CEO ownership, and family ownership.

Audit committee refers to the board of directors appointed as sub-committees to review whether the firm acts in compliance with relevant laws and regulations, and ensure accurate financial reporting and an effective internal control system. To select an audit committee for a firm, there must be at least three independent audit committees, and at least an audit committee with the knowledge and experience in accounting or finance.

Accounting Conservatism refers to forecasting under uncertainty without overstating assets or revenues, or understating debts or expenses. Two methods are introduced to test accounting conservatism: conditional conservatism, and unconditional conservatism. Conditional conservatism is the degree of correlation between earnings and negative returns that is higher than the degree of correlation between earnings and positive

returns. Unconditional conservatism is an accounting practice that keeps the value of a net asset low due to pre-defined accounting processes.

Cost of capital refers to the required rate of return. It can be divided into two types according to the source of funds: cost of equity, cost of debt, capital components. Thus, the weighted Average Cost of Capital or WACC of the two sources of funding must be calculated.



CHAPTER 2

REVIEW OF THE LITERATURE

This chapter presents the outcome of the literature review. The key literature includes research articles, and related textbooks that were found to support the issue of this study.

The first part of this chapter presents the key relevant theories. Agency theory is the fundamental theory concerning agency problem between shareholders and owners, and shareholders and creditors. However, stewardship theory explains why an agency problem does not occur. The concept used to solve an agency problem is corporate governance. Moreover, the board of directors is responsible for supervising resource allocation according to resource dependence theory. In this study, the tool that represents corporate governance is accounting conservatism which reflects the quality of financial information according to signaling theory. The factor that influences conservatism is ownership structure. The two theories relevant to this issue are the entrenchment effect hypothesis, and alignment effect hypothesis. Furthermore, the concepts and theories related to the cost of capital are also presented in this chapter. According to the assumption of the efficient market hypothesis, since there is no perfect market, there is information asymmetry among the management, investors, and creditors which affects the cost of capital. Cost of capital which is a part of capital structure can be explained by the theory developed by Modigliani and Miller (M&M), trade-off theory, and pecking order theory. Besides the aforementioned theories, capital structure decisions are also related to signaling theory. This chapter provides details on corporated governance, and cost of capital under the concept of board structure, board activity, compensation, shareholder structure, audit committee, and cost of capital.

The second part of this chapter will review the literature from past research relevant to this study, beginning with a review of the literature on the study of the relationship among board structure, board activity, compensation, shareholder structure, audit committee (independent variables) towards cost of capital (dependent variable), and accounting conservatism (interventing variable). In addition, this part also presents the literature review on the relationship of accounting conservatism (interventing variable)

towards cost of capital (dependent variable), followed by the literature review on accounting conservatism as a intervening variable) that moderate the relationship between independent variables, and dependent variables.

2.1 Theoretical Perspective

2.1.1 Agency Theory

Jensen and Meckling (1976) explained the relationship between the principal and the agent. The shareholders are considered the owner, or the principal are unable to manage the firm themselves. Thus, the management are appointed to act on their behalf in order to make a decision, and manage the firm on a daily basis. The relationship between the principle and the agent remains smooth in case the agent manages the firm with the purpose to maximize the best interests of the shareholders. However, agency problem occurs when there is a conflict of interests between the two parties since the management exploit or expropriate business resources that would provide returns to the owner due to information asymmetry, or imperfect information between the management of the firm and the shareholders. In fact, within a firm, high-level executives with the power to manage the business have the greatest opportunity to exploit. Jensen and Meckling (1976) found that the management with less than 100% of the common stocks were more likely to make decisions for their personal interests rather than for the firm. Not being the sole owner, the management do not have to bear all the costs of the firm.

McColgan (2001) categorized agency problems arising from conflicts of interest between the management and shareholders as follows:

1. Moral Hazard is a problem caused by the management that exploit the firm for their personal interests,
2. Earnings Retention is a problem in regards to firm size measured by the retained earnings of the firm. The management take advantage of retained earnings by applying the policy of the capital structure as an internal source of funds (retained earnings) rather than external financing (creditors) in order to reduce external audit. The use of such capital structure reduces the returns of shareholders in the form of dividends.

3. Time Horizon is a problem caused by timing. The management only consider the duration of their service in the firm. Thus, the management tend to invest in short-term projects rather than long-term projects despite higher returns of long-term projects.

4. Risk aversion is a problem arising from the management's, and the shareholders' conflicts in risk acceptance behavior. Since the compensation of the management is in the form of fixed amount salary and does not depend on firm performance, the management prefer investing in projects with low risks. In other words, the management are not granted any additional benefits from higher-risk project even though it may be successful with higher returns. However, the position of the management will be affected in case their decision leads to failure of the firm.

Denis (2001) presented two solutions to prevent agency problems arising from conflicts between the management and shareholders as follows:

1. Incentives: offering financial and non-financial incentives can motivate the management in the aspect of shareholders. For example, granting shares at an appropriate rate to the management can encourage them to protect their interest of the firm.

2. Monitoring: a board of directors consisting of internal and external qualified persons are appointed to monitor the firm on behalf of the shareholders. The responsibilities of the management involve evaluating executives, making key financial and operational decisions for the firm, consulting the management, as well as ensuring accurate operational and financial status. To avoid crisis, firms shall have a board of directors to monitor the management's behavior.

Agency problem caused by conflicts between shareholders as the principal, and the management as his agent is classified as Type I Agency Theory, which often occurs in firms with diversified ownership. In Thailand, agency problem that is often found in firms with concentrated ownership, or family-controlled businesses (Alba, Claessens, & Djankov, 1998; Connelly, Limpaphayom, & Nagarajan, 2012; Farooque, Buachoom, & Sun, 2020; Wiwattanakantang, 2001) is Type II Agency Theory. Type II Agency Theory is caused by conflicts between controlling shareholders as the principle, and minority shareholders, as the agent (Shapiro, 2005). Controlling shareholders will take advantage of their voting rights that are greater than shareholders' rights to make operational decisions that may benefit for harm the firm. The exploitation of minority shareholders

can be in the form of offering high compensation and bonuses to family members, making business decision to favor interested parties, changing capital structure of the firm by issuing special shares that benefit controlling shareholders.

Agency problem leads to higher cost called agency cost which is considered deadweight losses. Since the earnings is used as a basis for the management's compensation, the management tend to conceal losses and show higher earnings. As a result, firms have to encounter high audit fees and cost to monitor the performance of the management (Watts, 2003). In risk sharing perspective, the problem causes risks to shareholders and creditors. Since the returns are not paid back in the form of dividends or interest, shareholders and creditors demand higher risk premium, which leads to an increase in cost of capital of the firm.

2.1.2 Stewardship Theory

Stewardship theory developed by Donaldson and Davis (1991) explains that the board of directors and the management take care of the asset, and maximize wealth for the firm if the owner authorize them independence to make decision and implement policies. This theory assumes that the board of directors and the management concentrate on the interests of the firm rather than their personal interests. In other words, the success of the firm brings them success. Thus, it is the responsibility of the management to use the corporate resources effectively in order to effectively create value for the firm. Davis, Schoorman, and Donaldson (1997) indicated that stewardship theory is a component of agency theory. Thus, the two theories should be combined and used for reference in studies. The concept of stewardship theory supports that if the chairman and the top management is the same person, it increases the firm performance since the management's compensation is often tied to firm performance. Thus, the management are able to formulate guidelines, practices and strategies without being interfered by the board of directors (Rechner & Dalton, 1991). Thus, the firm performance increases while the cost of monitoring earnings management is low.

2.1.3 Corporated Governance

Strengthening the confidence of shareholders, investors, and stakeholders of the firm by the corporate governance of the board of directors is essential for firms listed in the capital market. After investing in a firm, investors become shareholders. Since

shareholders are unable to directly participate in the management of the firm, a board of directors must be appointed to represent them. The board of directors will also appoint the management to manage the company. Thus, the board of directors as the representative of the shareholders are responsible for supervising the management to perform their duty for the best interests of the firm and its shareholders (Jantadej, 2018). Differences in interests of shareholders and the management lead to a conflict of interests between the management and the shareholders, or agency problem. In fact, the management are responsible to control the assets of the firm, but has no significant interest in the firm. This is considered an obstacle to creating maximum value for the firm (Berle & Means, 1932; Jensen & Meckling, 1976). Interestingly, conflicts of interest cannot be eliminated through contracts between shareholders and management since it creates a cost burden for the company, and the management may not be able to perform as specified in the contract. Thus, the contract is considered the only complete evidence to control the management of the firm (Fama & Jensen, 1983; Hart, 1995). Thus, corporate governance is a mechanism popularly used by firms to reduce such conflicts.

Firms with good corporate governance ensure investors and shareholders with optimum interests, long term added value, as well as sustainability since good corporate governance reduces information asymmetry (Anglin, Edelstein, Gao, & Tsang, 2011; Cai, Qian, Liu, & Yu, 2015; Elbadry, Gounopoulos, & Skinner, 2015; Kanagaretnam, Lobo, & Whalen, 2007; Musova, Musa, & Debnarova, 2017). With less information asymmetry, the cost of equity capital and risks are also reduced (Razali, Fui, Shaharuddin, Tak, & Hajazi, 2017).

Corporate governance was defined by the Stock Exchange of Thailand as a system that provides the structure and process of the relationship between the board of directors, the management, and the stakeholders to enhance the competitiveness in order to grow and add value to the firm, which is a long-term benefit for shareholders. The Stock Exchange of Thailand has continuously promoted listed companies to have good corporate governance mechanisms. In 2002, 15 principles of good corporate governance were introduced as the initial guidelines for listed companies. In 2006, the 15 principles were revised to be in line with the OECD Principles of Corporate Governance (2004) developed by the Organization for Economic Co-Operation and Development and

Corporate Governance – Reports on the Observance of Standards and Codes (CG-ROSC) recommended by the World Bank. In 2012, the Principles of Good Corporate Governance for Listed Companies, 2012 was introduced by the Stock Exchange of Thailand. The principles were developed to ensure compliance with the ASEAN Corporate Governance Scorecard. Thus, listed companies shall disclose information about its implementation of good corporate governance principles to their shareholders, investors, and stakeholders in its annual report and annual statement (Form 56-1) that must be submitted from 2014 onwards. The form is divided into 5 sections: Section 1 - Shareholders' Rights, Section 2 – Equitable Treatment of Shareholders, Section 3 - Roles of Stakeholders, Section 4 - Disclosure of Information and Transparency, and Section 5 - Responsibilities of the Board of Directors.

In 2017, the Office of the Securities and Exchange Commission Cooperate and relevant capital market organizations developed Corporate Governance Code for Listed Companies 2017 (CG Code) to replace the good corporate governance principles for listed companies in 2012. CG Code defines corporate governance as a relationship of governance and mechanisms that leads firms to achieve their objectives by (1) determining of main objectives; (2) formulating strategies, policies, plans, and budgets; and (3) monitoring, evaluating and overseeing the performance. The CG Code guidelines are as follows:

1. Establish Clear Leadership Role and Responsibilities of the Board,
2. Define Objectives that Promote Sustainable Value Creation,
3. Strengthen Board Effectiveness,
4. Ensure Effective CEO and People Management,
5. Nurture Innovation and Responsible Business,
6. Strengthen Effective Risk Management and Internal Control,
7. Ensure Disclosure and Financial Integrity,
8. Ensure Engagement and Communication with Shareholders.

To act in compliance with this CG Code, “Apply or Explain” principle shall be used. In other words, the board of directors shall apply the principles in the context of the firm and its business, and shall also provide guidelines with explanations (The Securities and Exchange Commission (SEC), 2017).

2.1.4 Resource Dependence Theory

This theory suggests that the key for firms to survive is the ability to acquire and maintain resources, such as raw materials, labor, capital, tools, and knowledge needed to produce goods and services. However, those resources are controlled by external social factors. Thus, firms have to adjust to the environment to ensure that it can access and use those resources by applying necessary strategies. Persuasive strategy is important strategy to influence others to follow by persuading external parties to be a part of the board of directors.

Resource dependence theory believes that the board of directors reflects a fundamental link between the firm and the other resources needed to increase the firm performance. Thus, the board is essential since it affects the success of the organization (Schuler & MacMillan, 1984; Wright & McMahan, 1992). It is believed that appointing committee based on this theory can ensure success. Moreover, it is necessary for large firms to appoint a large number of board members to manage their resources and to achieve their goals. However, according to Jensen (1993) and Lipton and Lorsch (1992), it is recommended to have 8 or 9 members on the board of directors. It was proved that the smaller board of directors will result in more efficient performance, including audit efficiency, while a larger board of directors is not very efficient due to decreased enthusiasm for the audit, as well as higher costs.

2.1.5 Accounting Conservatism

2.1.5.1 Definition of Accounting Conservatism

The earliest definition of accounting conservatism was ‘anticipate no profit, but anticipate all losses’ defined by Bliss (1924) (cited in Watts (2003)). Later, Basu (1997) examined the impact of accounting conservatism on earnings reports of the US firms from 1963 to 1990 by measuring the relationship of good and bad news: positive returns represent good news, and negative returns represent bad news. Earnings were set as ‘y’, and the returns were set as ‘x’, hence this correlation test model is called “Reverse Regression of Earnings on Returns”. The results of the study show that the correlation between earnings and negative returns is much higher than the correlation between earnings and positive returns. Thus, the widely known principle of accounting

conservatism was defined as: “an accountant’s tendency to require a higher degree of verification for good news than bad news in the financial statements” (Basu, 1997).

In 1989, Financial Accounting Standard Board (FASB) defined accounting conservatism as a prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered. Later, FASB (2010) in Statement of Financial Accounting Concepts (SFAC), No.8 removed accounting conservatism from the conceptual framework of financial reports since it believes that accounting conservatism causes bias in accounting information which is inconsistent with quality of neutrality of financial reports. However, in 2018, the International Accounting Standard Board (IASB) issued the revised conceptual framework for financial statements by exercising conservatism to support a neutral depiction. Conservatism was also defined as the exercise of caution when making judgements under conditions of uncertainty. The IASB suggested exercising conservatism to lessen the impact of management's bias.

2.1.5.2 Types of Accounting Conservatism

Watts (2003) categorized accounting conservatism into 3 types: 1) the concept of net assets, 2) the concept of earnings and accrual basis, and 3) the concept of the relationship between earnings and returns.

The first concept is the concept of net assets or balance sheet approach. According to this concept, an increase in net asset value is not recognized if there is uncertainty. On the other hand, if there is a reduction in the net asset value, it will be immediately recognized. Thus, the book value of the net asset will be persistently below the market value. This is supported by Beaver and Ryan (2000), who measured accounting conservatism by book-to-market ratios called ‘bias component’. The model used in their study is as follows:

$$BTM_{it} = \alpha + \alpha_i + \alpha_t + \sum_{k=0}^4 \beta_k RET_{it-k} + e_{it}$$

The model is a regression analysis of the relationship between book value to its market value (BTM) and return from procedure (RET). The model that Beaver and Ryan (2000) applied was developed by Ryan, 1995, which originally used market price changes divided by the current market price $\left(\sum_{k=0}^{\infty} \beta_k \frac{\Delta MV_{i,t-k}}{MV_{i,t}} \right)$ as an independent variable.

However, the model that Beaver and Ryan (2000) used stock returns $\left(\sum_k \beta_k RET_{it-k}\right)$ as an independent variable since returns are more commonly used to measure market value in accounting research. However, the change in the market price and the return on stock is different since returns not only refer to market price, but obtained dividends must also be considered.

The second concept is the concept of earnings and accrual basis, or conservatism in the income approach. According to this concept, uncertain earnings is unrealized, but uncertain loss is immediately realized. This causes inequality in accruals. Accruals in each period tend to be negative accruals. This is supported by Givoly and Hayn (2000a) and Zhang (2008), who measured accounting conservatism by non-operating accruals or comparing net profit that is lower than operating cash flow with the model as follows:

$$\text{Non-operating accruals} = \text{Total accruals} - \Delta \text{Accounts receivable} - \Delta \text{Inventories} - \Delta \text{prepaid expenses} + \Delta \text{Accounts payable} + \Delta \text{Taxes payable}$$

Where:

$$\text{Total Accruals} = \text{Net Income} + \text{Depreciation} + \text{Amortization}$$

The above model used net profit before depreciation to represent accruals since depreciation cannot be measured by the difference between revenue and operating cash flow. Thus, another model is suggested as follows:

$$\text{Conservatism} = \frac{-(\text{Net Profit} - \text{Operating Cash Flow})}{\text{Total assets}}$$

The average of accruals over the period of not less than 3 years is considered an appropriate average of accruals, which can be used as a proxy to measure accounting conservatism of the firm.

The third concept is the concept of the relationship between earnings and returns. In fact, loss is faster realized than profit in the income statement. However, the return on security investment reflects immediate profit and loss when there is a change in the value of the net asset, regardless profit or loss. Thus, the relationship between the loss and the return on security investment is greater than that of the profit. This is supported

by Basu (1997), who explained the inequality of perception of good and bad news in the income statement. The researcher used return on security investment to indicate good or bad news; negative returns or a decrease in securities prices represent bad news, while positive returns or an increase securities prices represent good news. Both good news and bad news immediately reflect return on security investment in the market according to the principle of market efficiency. In other words, if the market works efficiently, the securities prices reflect all types of information quickly, accurately, and thoroughly with the recognition of investors and all stakeholders in the market.

Accounting profits under the principle of accounting conservatism are unequal in terms of recording good news and bad news in the financial statement. If the management is aware of facts and possibilities that may reduce the future cash flow of the firm, they must promptly recognize negative forecasts in the income statement on the accounting conservatism basis, such as impairment of assets, inventories presented in the financial statements by using the cost method or net realizable value, whichever is lower. Thus, it can be said that bad news immediately reflects in earnings and returns. In contrast, good news only reflects returns, but delays recognition in earnings. As a result, the correlation between accounting loss and negative returns is higher than the correlation between accounting profit and positive returns. Basu (1997) used the model called “Reverse regression of earnings on returns” by setting earnings as a dependent variable, and returns as an independent variable. The relationship between earnings and returns can be represented by a regression model as follows:

$$\frac{E_{it}}{P_{it-1}} = \alpha_0 + \lambda_0 R_{it} + \varepsilon_{it} \quad ; R_{it} < 0 \quad (1)$$

$$\frac{E_{it}}{P_{it-1}} = \alpha_1 + \lambda_1 R_{it} + \varepsilon_{it} \quad ; R_{it} \geq 0 \quad (2)$$

Where E_{it} = Earnings per share of entity i in the fiscal year t
 P_{it-1} = Securities price per share i at the end of the fiscal year t-1
 R_{it} = rate of return per share i at the end of the fiscal year t-1 to the end of the fiscal year t

Model (1) shows the relationship between earnings and a rate of return less than 0, which represents bad news. Model (2) shows the relationship between earnings and a rate of return greater than or equal to 0, which represents good news. The reason

why the rate of return is used to represent the news is that the rate of return is measured by the change in the securities price of the firm. Any change in securities prices is a result of both bad news and good news related to the valuation of securities. In case the rate of return is less than 0, it reflects that the market has perceived more bad news than good news of the firm, and the firm performance is likely to decline. However, in case the rate of return is greater than or equal to 0, it reflects that the market has perceived more good news than bad news, and or the firm performance is like to improve. Basu (1997) stated that based on accounting conservatism principle, the correlation between earnings and return is less than 0 (Model 1) is higher than the correlation between earnings and return is greater than or equal to 0 (Model 2). λ_0 in Model 1 and λ_1 in Model 2 are the correlation value. High value indicates high correlation. The research model to measure the differences of the aforementioned relationships was constructed as follows:

$$\frac{E_{it}}{P_{it-1}} = \beta_0 + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 R_{it} * DR_{it} + \varepsilon_{it} \quad (3)$$

Where E_{it} = Earnings per share of entity i in the fiscal year t
 P_{it-1} = Securities price per share i at the end of the fiscal year t-1
 R_{it} = Rate of return per share of entity i at the end of the fiscal year t-1 to the end of the fiscal year t can be found from
 $R_{it} = \frac{\text{Dividend} + \text{Change in Securities Price}}{\text{Securities Price at the Beginning of the Period}}$
 DR_{it} = Dummy variable is 1, $R_{it} < 0$, and equals 0 if $R_{it} \geq 0$

In Model 3, β_0 equals α_1 in Model 2. β_1 is the coefficient showing the difference between α_0 in Model 1 and α_1 in Model 2. β_2 equals λ_1 in Model 2, and β_3 is the coefficient showing the difference between λ_0 in Model 1 and λ_1 in Model 2.

As mentioned above, accounting conservatism is the inequality of the relationships between losses and negative returns versus profits and positive returns. Thus, if firms listed in the Stock Exchange of Thailand have applied accounting conservatism, the coefficient β_3 which is the joint effect between the rate of return and the dummy variable, and negative return rate ($R_{it} * DR_{it}$) will be significantly positive. This indicates the correlation between losses and the negative returns will be higher than the relationship between profits and a positive returns.

Ball and Shivakumar (2005) and Beaver and Ryan (2005) divided accounting conservatism into unconditional conservatism and conditional conservatism, and explained the differences between them as follows.

Unconditional conservatism, also known as ex-ante or news independent, is an accounting practice that keeps the book value of a net asset low due to pre-defined accounting process (Beaver & Ryan, 2005). Underrated net assets do not consider asset's useful life in the future. In other words, the amount of underrated net assets do not depend on change in the economic value of the asset, but firms will initially recognize the amount of their net assets below the expected market value over the useful life of the assets. For example, firms use the double-declining balance depreciation method instead of the straight-line depreciation method even though the straight-line depreciation method will reflect the better economic benefits of the asset. With an accounting policy, firms to record their assets in their financial statement less than it should be since depreciation is recognized. Moreover, the expenses are in the form of intangible asset. For example, research and development (R&D) is recorded as expenditure instead of capital expenditure regardless of the future economic benefits of such expenses.

In addition, unconditional conservatism is considered to accounting information arising from pre-judgment, with bias downward based on the selection of accounting methods. Thus, financial data users can predict and adjust ex-ante conservatism since the book value of an asset is systematically determined with a known amount (Ball & Shivakumar, 2005). As a result, the application of unconditional conservatism is used among firms for tax plan in order to pay less tax. Firms tend to adopt unconditional conservatism to prevent interference or non-compliance with regulations, such as an audit of the stock exchange. Unconditional conservatism can be controlled at ease without cost, and lead to smoother earnings (Qiang, 2007).

Conditional conservatism, also known as ex post or news dependent, is the desire to check good news (profit) rather than bad news (loss). As a result, the sensitivity to perceive bad news in financial reports is more sensitive than good news. In unpleasant circumstance, the book value of the assets will be written down, but it will not be written up in pleasant circumstance (Beaver & Ryan, 2005). Conditional conservatism leads to the application of accounting principles concerning lower cost, market prices of

inventories, impairment of long-term tangible and intangible assets. When a company loses its competitiveness or customer base, a reduction in value for goods with unfavourable economic news, such as losses, obsolescence, damage, and decline in market prices or future cash flows are expected to be reduced from disposal of inventory.

Although both types of accounting conservatism lead to a decrease in profit and owner's equity, only conditional conservatism focuses on the speed in recognizing the expected loss in order to provide new information, which is important to financial statements users, such as contracts regarding executive compensation between the owner (principal) and the management (agent) in order to reduce the agency cost caused by not reporting losses in a timely manner, while manipulating earnings to show higher value in order to reward themselves. In addition, the principle of conditional conservatism is also beneficial to the contract between the creditor and the firm. Creditors need the level of good news review before accounting transaction recognition rather than the level of bad news review to prevent principal's loss risks in a timely manner that may later occur (Ryan, 2006). It can be concluded that shareholders and creditors are concerned whether they will have timely loss reporting information rather than whether the firm they have invested in have a low accounting policy for recording assets. Mora and Walker (2015) concluded that the empirical evidence from prior research revealed that conditional conservatism is beneficial, including preventing upwards accruals earnings management.

In conclusion, conditional conservatism depends on economic bad news. Thus, accountants are required to record their net asset values when the economic benefits of their assets actually decline. In contrast, unconditional conservatism allows a selection of an accounting policy to record the value of an asset that does not depend on the conditions of economic news.

2.1.5.3 Benefits of Accounting Conservatism

Agency Problem arising from information asymmetry that the management does not provide information about the firm to investors, shareholders, or creditors sufficiently, equally, and in a timely manner leading to a reduction in the firm value in emerging markets. Interestingly, information asymmetry can be minimized with conservatism (LaFond & Watts, 2008). This is supported by Chi and Wang (2010), who

found that there was a decrease of information asymmetry of firms in Taiwan when accounting conservatism was applied. In other words, accounting conservatism is used as a management mechanism to increase its value and cash flow (Chi et al., 2009).

Firms with leverage in capital structures tend to have conflicts of interest between equity holders (owner) and bondholders (creditor). Since the management are appointed by equity holders, the policies imposed by the management often benefit equity holders, such as policies relevant to dividend payment. The management will only present good news that reflects their career advancement and the reputation of the company. This leads to aggressive revenue recognition. On the other hand, timely loss recognition based on accounting conservatism can decrease such problems since it reduces earning and retained earnings used as the basis for calculating the dividend payment, which must be specified in the debt covenants. Thus, the possibility that the management will pay all dividends to equity holders while still paying interest to bondholders is lessen. (A. S Ahmed, Billings, Morton, & Stanford-Harris, 2002). Debt covenant modifications is used as a tool which leads to the finding that demand accounting conservatism (Beatty et al., 2008). Thus, accounting conservatism is considered a mechanism to downside risk protections to lender. When the downside risk of lenders decrease, lenders will reward their borrowers by lowering interest rates.

Accounting conservatism is an appropriate practice for firms with the demand loans from banks or financial institutions during economic downturns since banks or lenders require verifiable account numbers to assess the borrower's financial condition (Watts, 2003). Watts and Zuo (2011) found that return on investment of US firms during the financial crisis from 2007 to 2009 was positively correlated with pre-crisis caution. The timely recognition of losses increases the firm's ability to apply for loans and reduce underinvestment during the crisis. Francis, Hasan, and Wu (2013) confirmed that information asymmetry usually and severe agency problems occur during financial crisis. The management tend to use personal data for aggressive earnings management. However, firms with high accounting conservatism which can recognize losses in time may suffer from losses less than firms with lower accounting conservatism.

When accounting conservatism reduces the opportunity of the management to overvalue their net assets in order to accumulate profits for themselves,

firms can implement more projects with positive NPV, while projects with negative NPV will be monitored in regards to the timely recognition of losses, which results in the proper management ability (Watts, 2003). Ahmed and Duellman (2011) tested the role of timely loss recognition in directing the management's investment decisions in US firms. They claimed that accounting conservatism influences the management to avoid projects with negative NPVs (ex ante) and supervises investment decisions of the management (ex post). Firms with high accounting conservatism tend to have high future profits. Moreover, accounting conservatism is taken into account for acquisition. J. Francis and Martin (2010) examined investment decisions of US firms, and concluded that buyers tend to include the economic losses of the acquired company before deciding to purchase the firm. If the management recognizes the loss in a timely manner, they will not make a decision to acquire a firm with negative earnings since it may reduce the returns of the management based on the profit of the firm and also affect the stability of the management.

Accounting conservatism also benefits firms of which capital structure is largely based on equity since investors are main user of financial reports. In addition, investors in capital market typically prefer lower rates of returns for companies that provide timely loss information (Garcia Lara et al., 2011; Xi Li, 2010). Kim, Li, Pan, and Zuo (2013) found that US firms with accounting conservatism encounter lower negative market reactions during seasonal equity offering: SEO due to lower financial costs. They claimed that investors tend to be less protective of themselves if they buy stocks from firms with high accounting conservatism since the need to audit profits over losses based on accounting conservatism limits the management's incentives and opportunities for overstating figures in the financial statements. Francis et al. (2013); Kim et al. (2013); Watts and Zuo (2011) indicated that timely loss recognition increases the firm's ability to access funding sources, reduces the management's aggressive earnings management, provides reliable and transparent account information to external investors. If investors rely on information presented by the firm, the firm's cost of capital will be lower.

Besides investors who need timely information of the firm's risk of loss, analysts also need such demands. Kim and Pevzner (2010) confirmed that conditional

accounting conservatism depends on whether economic news can prevent massive write-downs since unrealized gains are not allowed in practice. They found that accounting conservatism leads to the possibility of lower future bad news measured by missing analyst forecasts, lower earnings, and lower dividends. Similarly, Sohn (2012) concluded that financial analysts sometimes include accounting conservatism in their earnings forecasts. Such evidence shows that capital markets, including investors, and analysts, value firms with high accounting conservatism than firms with low accounting conservatism.

Vichitsarawong, Eng, and Meek (2010) reported the level of accounting conservatism and timeliness of earnings after Asian financial crisis in 1997 of firms listed in Hong Kong, Malaysia, Singapore, and Thailand. Obviously, there was a concentrated shareholding. In other words, shares were held by a few shareholders with political connections. In addition, there was low investor protection. Therefore, it was less likely that Thai listed companies would report losses in a timely manner due to higher costs of litigations. The results showed that corporate governance in Thailand and in the other three countries had improved significantly with more transparent financial reporting during the post-crisis period. Chitnomrath, Evans, and Christopher (2011) revealed that the implementation of corporate governance through concentrated shareholding enhances the efficiency of post-bankruptcy restructuring of listed companies in Thailand. The aforementioned empirical results suggest that Thai capital market needs a regulatory mechanism, such as accounting conservatism, timely recognition of losses to build confidence among investors since it reflects transparency. This can reduce agent problems, as well as the capital cost of the firm.

2.1.6 Ownership Structure

2.1.6.1 Dispersed Ownership Structure

Firms with several minority shareholders with a small percentage of shares have no shareholder with large voting rights, or absolute power to control the firm. This leads to a clear separation of ownership and control (Fama & Jensen, 1983). The management are independent and may seek for personal interests easily. Khan (2006) stated that an increase in the level of equity holding by individuals leads to a fall in dividends. This type of shareholder structure is commonly found in developed countries,

such as the United States and the United Kingdom. Leuz (2010) indicated that corporate reporting and disclosure regulation channels capital to investment opportunities of a firm with a shareholder structure in this manner, called “outsider” system that most of the funds come from public debt or equity markets. Investors do not have any special privileges to access the information of the firm, and they are protected by explicit contracts, reporting, and disclosure. Thus, transparent reporting is required to prevent information asymmetry between the firm and investors.

2.1.6.2 Concentrated Ownership Structure

In firms with a few shareholders holding a large stake, controlling shareholders have a lot of voting rights and the power to control the firm. Firms with this type of shareholder structure are in developing countries in Asia and some European countries. Shareholders with the controlling power over the business can be individuals, families, industries, and government. However, shareholders in the form of a family are commonly found. Thus, firms are managed by members of such family. Leuz (2010) discussed the reporting and disclosure of companies with this kind of shareholder structure as a “relationship-based” system since most of the funds are generated from internal financing. As a result, corporate governance is under the control of insiders, such as board members. Moreover, insiders are often privileged to access information using personal relationships. Thus, the problem of information asymmetry is solved primarily via private channels rather than public disclosure. Corporate reporting does not publicly disseminate information much, but limits the claims of outside shareholders to dividends, protects creditors and promotes internal financing (Ball, Kothari, & Robin, 2000; Leuz & Wüstemann, 2004).

2.1.7 Entrenchment Effect and Alignment Effect Hypothesis

Several recent studies have found that most firms around the world have concentrated ownership shareholding structure with a few controlling shareholders that have the management powers. Appointing the board of directors is also important in formulating the firm’s policy. However, firms in the United States have dispersed ownership structure due to its developed economy, which attracts investors around the world. Firms with concentrated ownership encounter agency problems arising between

controlling shareholders and non-controlling shareholder. This issue can be explained by entrenchment effect theory, and alignment effect theory.

2.1.7.1 Entrenchment Effect

When a major shareholder or the management hold the majority of shares, they have enough voting power to protect their own interests. They may also expropriate incentives of minority shareholders (Silveira, 2006), so that they remain their management positions, and pay themselves a large sum of compensation. In case the management have a large percentage of shareholding and the company's regulatory mechanism is not strong, shareholders will not be able to monitor the performance of the management. Thus, the management may not maximize value for the firm, which may cause a negative effect on the minority shareholders (Morck, Shleifer, & Vishny, 1988). As a result, shareholders may charge the firm a higher level of cost of equity capital to offset higher agency risk.

2.1.7.2 Alignment Effect

Offering controlling shareholders to hold more shares enhances the interests of controlling and non-controlling shareholders be more consistent since controlling shareholders, who are also the management, believe that the additional shareholding may slightly impair their voting rights, but increase cash flow rights. In case the management or controlling shareholders are primarily concerned with their own interests, the value of their shares may ultimately decrease. However, if they maximize the value for the company, their share value will also rise (Fan & Wong, 2002). The controlling shareholders that also take a part in the management consider their long-term benefits, including the sustainability of the firm, and the firm reputation rather than short-term interests. Thus, offering shareholders with controlling power to hold more shares can mitigate the agency problem by adjusting the interests of the CEO in accordance with the shareholders (Jensen & Murphy, 1990). As a result, the capital cost of the firm is ultimately reduced.

2.1.8 Efficient Market Hypothesis

Efficient market hypothesis (Fama, 1970) is a theory showing that the stock market can be effective when the stock price immediately reflects the available

information of the firm. The information that reflects stock price according to this theory can be divided into three levels as follows:

2.1.8.1 Weak form efficiency: securities prices reflect market information.

2.1.8.2 Semi-strong form efficiency: stock market prices reflect public information. This information in the financial statements, market information, current economic information, and forecasts are combined for investment analysis called “Fundamental Analysis”.

2.1.8.3 Strong form efficiency: the price of the securities reflects all information, including, public information and insider information.

According to the fact that stock prices reflect the information of the firm, semi strong form efficiency pays close attention to accounting information in financial statements and economic information which is public information. However, it does not reflect private information that cause information asymmetric problems between the management or the insider, and investors or external users of financial statements. Information asymmetry causes trade friction among investors, and leads to lower levels of stock liquidity and higher expected returns (Leuz & Verrecchia, 2000) which increases a firm's cost of capital (Brennan & Subrahmanyam, 1996). Disclosing the firm's information reduces investors' demand for private information, and information asymmetry (Akerlof, 1970; Diamond & Verrecchia, 1991) affects the market price in the context of the efficient market hypothesis (Healy & Palepu, 2001; Ronen & Yaari, 1993). When the firm's cost of capital is lower, it also reduces capital costs. This is important for firms looking to raise capital in markets with limited protection for investors (Isabel-María & Ligia, 2017).

2.1.9 Capital Structure Theory

Firms need to find funding sources to expand their business, develop their potential, and increase opportunities for future growth from both debt and equity, known as the “capital structure”. Financing can be done in numerous approaches, each of which has advantages and disadvantages depending on the financial policy of each firm. Equity financing is a fixed investment with no obligation to pay returns to the owner, and no obligation to return the money that the owner has invested. Since the management are not the owner of the firm and do not have to take responsibility for the risk in doing business,

there is no incentive to maximize benefits for the firm. As a result, the management may conduct an immoral act by transferring the assets of the firm to themselves, or not risking to invest in various projects to avoid possible mistakes (Jensen & Mecking, 1976).

For debt financing allows using interests to be deducted as expenses to save income tax (Tax Shield from Debt). This reduces the company's financial costs but increases returns on investment. Moreover, ordinary shareholders can still maintain their interests since bondholders or creditors do not have voting rights. In case the firm encounters financial problems, the firm will be unable to pay principal and interest within the specified time. In addition, certain conditions in the contract may increase operational risk leading to reduction in the flexibility in management. This makes the company more vulnerable to bankruptcy which pressures the share prices of the firm to drop. In this case, risk to the shareholders will be higher, and the expected return the shareholders may obtain will also be higher. If the firm has an appropriate capital structure, the Weighted Average Cost of Capital (WACC) will be reduced, allowing shareholders to benefit from debt and increase their wealth.

2.1.9.1 M & M

The theory that leads to the explanation of capital structure is the theory of Modigliani and Miller (1958) or M&M Theory. It suggests that capital structure does not affect the firm value in the perfect capital market. The concept is based on the following key assumptions:

- (1) No income tax,
- (2) No trading fees,
- (3) No cost of bankruptcy,
- (4) Investors can apply for loans at the same rate as the firm,
- (5) Investors have the same information relevant to future investment opportunities as the management.
- (6) Earnings before interest and taxes (EBIT) are not affected by debt financing.

This concept has been used as a capital structure theory, named after a key assumption, which is tax-free M&M. Modigliani and Miller (1958) concluded that firms was able to determine the value of the business by reducing earnings before interest and

tax at a fixed rate on a business risk basis. Firms with debt level either at 0% or 100% have the same business value. With the condition of no tax, the firm's cost of equity is also equal to the cost of non-debt equity and higher risk compensation. Thus, the capital structure has no effect on the firm value, but the firm value depends on the risk and investment decisions of the firm.

In 1963, Modigliani and Miller (1963) found that there is no perfect market due to taxation. When income tax was also taken into account, it was found that the value of a firm with debt is equal to the sum of the value of the firm when financing from a source of capital, and the value of the tax benefits from tax reduction. Thus, the value of the firm that is financed by debt is greater than firms without debt financing. This is a result of the tax-saving value. Furthermore, tax-saving value also causes financial distress cost and agency problem, which implies that capital structure affects the firm value. The firm value reaches the highest when there is a high level of debt financing.

2.1.9.2 Trade-off Theory

This theory was first introduced by Kraus and Litzenberger (1973). According to the concept of finding the optimal capital structure in order to maximize the firm value, the firm has to compare the benefits and risks (trade-off) from debt financing. Myers (1977) also found that even though debt financing reduces burden in terms of tax reduction, it increases the risk and financial distress problem, or bankruptcy cost. Firms with a lot of debt will increase this cost until it exceeds the tax benefit. As a result, the value of the business decreases. Thus, each firm should have a different ratio of debt in its optimal capital structure by finding a suitable point between the benefits of debt and bankruptcy cost. Thus, the factors that affect the firm debt financing are as follows:

(1) Taxes: Firms have to pay their income tax. If a firm wants its income to be distributed to stakeholders with high interests in the firm, the firm tends to conduct debt financing. If the firm's capital structure has a lot of ownership, dividends paid by the firm are not tax deductible. With debt financing, the firm can deduct interest as expenses before tax payment. This reduces the taxes that firms have to pay to the government. However, financial problems occur if corporate profits are suitable, but the debt increases until firms are unable to pay off.

(2) Agency problems can be divided into two types:

The first aspect is the conflict between shareholders and the management. The firm's income does not belong to the management since the management do not own 100% of the firm. The income of the business must be allocated to the shareholders and creditors of the business, while the cost of the risk incurred by the management is the burden of the management. As a result, the management may not invest money in suitable projects, but invest in projects that would benefit themselves, such as investing money in building a large and comfortable office can result in a decrease in the value of the shareholders. Compensation contracts and managerial control can be used to solve the conflicts between shareholders and the management. This is related to the increase in debt financing, and makes the executives have more discipline in management. An increase in debt will reduce free cash flow since the executives have to invest money in projects that produce the most benefits in order to pay the debt within the time specified in the contract instead of expropriating for their personal interests.

The second aspect is the conflict between debt holders and shareholders due to excessive debt that may cause financial problems. As a result, shareholders demand the company to invest in projects with higher risk in order to obtain more returns, regardless such investment is suitable or not. Investing in an appropriate project may provide a return that is sufficient to repay the firm's loans, but cannot provide returns that exceed the amount that must be paid to shareholders. In case a firm chooses to invest in risky projects, there is a chance that the shareholders will receive returns from the excess in debt repayment. However, if the investment does not succeed, the shareholders will not receive a return. Investing in these risky projects is similar to taking wealth from creditors since the creditors have to bear the increased risk even though the return that the creditor will receive is the same value. The cost incurred from investing in a project with excessive high-risk is influenced by debt financing or "asset substitution effect", which is the agency cost that arises from debt financing equity. To eliminate conflicts between debt holders and shareholders, it is necessary to provide capital by issuing additional shares.

(3) Bankruptcy Cost: debt financing increases the cost of bankruptcy. This is since excessive debt will increase the chances that the firm will not be able to

repay the loan, especially firms with unstable income. Thus, the higher possibility of bankruptcy will result in less debt benefit.

2.1.9.3 Pecking Order Theory

Pecking order theory developed by Myers and Majluf (1984) indicated that firms do not need an appropriate capital structure. If a firm has an appropriate capital structure, the costs of external financing will take precedence over the costs caused by the improper capital structure of the firm. The company will provide tiered financing using in-house funds first, which is cash and marketable securities. If the funds within the business are insufficient for investment, the firm will provide external funding by choosing the most secure securities, which can be arranged by liabilities, convertible bonds, and equity, respectively. Myers and Majluf (1984) addressed the issue of information asymmetry that the management have more corporate information than investors. Thus, the management issue securities with high risk when their price is higher than it should be. Investors who are aware of the problem of information asymmetry leading to overvalued securities, and the management will take profits from issuing new securities are not be interested in the securities of that firm leading to a decrease in price of high-risk securities. To solve this problem, Myers and Majluf (1984) suggested that the management should finance their investments and avoid signaling to the market by choosing internal funds, followed by the most secure external sources. If the issuance of capital increase shares causes the share price to fall until the existing shareholders lose benefits, the management may not provide funding by issuing capital increase shares and canceling the investment in that project even though the investment in the project gives a positive net present value.

According to trade-off theory, it can be explained that the cost of debt and cost of equity are suitable and begin to rise when there is more debt financing. Since cost of debt is lower than cost of equity, increasing debt will initially lower the cost of capital. When the cost of debt and cost of equity increases, the advantage of lower cost of debt will be eliminated and the cost of capital will increase which results in the decreasing value of the firm. In contrast, picking order theory prioritizes financing from internal funding sources. To procure from external funding sources, debt financing is safer than issuing equity shares. When information asymmetry between the management and the

investors is taken into consideration, different sources of capital differently affect the cost of capital both in the short term and long term. Thus, capital structure theory is also important to explain the impact on firms' cost of capital.

2.1.10 Signaling Theory

Signaling theory developed by Spence (1973) explains that the management have more information than investors. Making decision on capital structure is a signal to investors in terms of the management's views towards the future of the firm. The management's decisions that are taken into consideration is debt financing. In the event that management expects that the firm may encounter loss, issuing ordinary shares is used to attract new investors. However, if the firm uses fundraising debt with a fixed cost, such as interest expenses that are the firm's obligations, but unable to pay such amounts, the firm will go into bankruptcy. Investors believe that in case a firm chooses leverage or using debt in the capital structure with a high proportion, it reflects that the firm is confident about its future performance. Thus, using debt is considered a reliable signal.

Numerous studies have applied signaling theory to reveal the potential of a firm through its stock trading activities. Ross (1997) found that the market mechanisms that the management uses to signal investors include undertaking of debt, dividends, leverage, stock repurchase, announcement of merger or acquisition, announcement of tender offer, announcement of a spin off. Welch (1989) and Zheng and Stangeland (2007) also found a negative relationship between the share price and the firm's potential since initial price offerings (IPOs) that are below their intrinsic value signal to investors the current and future capabilities of the firm. This is in line with Lucas and McDonald (1990), who found that the firm's share price will decrease when the capital increase is announced. Similarly, Hirtle (2004), who studied the relationship between stock repurchasing and the performance of bank holding company in the United States, found that a stock repurchase with high price is associated with higher profit margins and improved asset quality in the year of the stock repurchase, especially firms listed in the stock exchange. This indicates that the management of bank holding company that have information about the expectation of profit from shareholders' stock repurchase are sending signals into the market to show investors an improvement of firm performance,

and repurchase stocks when the cash flow status is good compared to the opportunity to profit from external investment.

Signaling theory also reflects the quality of the financial information that a firm provides to its users, whether creditors, suppliers, customers, governments or investors, who are considered key users of financial information to gain confidence in the firm. Accounting conservatism is another corporate governance policy in which a firm can signal the quality of financial information of its various business activities, such as profit division or capital structure policy. It allows the use of financial information to gain confidence and benefit the firm in the form of lower cost of capital. In addition, Gietzmann and Trombetta (2003) found that if a firm disclose its accounting policy changes voluntarily or by regulation, it signals a future perspective on the firm's uniform policy. Firms cannot always expect that voluntary disclosure is a means to raise or maintain investor expectations of the firm performance. It depends on the previous situation and the accounting policy applied at that time. For example, firms with good prospects may apply accounting policy in the form of conservative and no voluntary disclosure which has lower cost of capital than firms that adopt aggressive accounting even though they voluntarily disclose good news. The latter firms are charged a cost of capital premium by investors.

Additionally, Zare, Heidari, Salehi, and Jourkesh (2013) examined the relevance of Disclosure, conservatism and their influence on cost of capital of the companies in Tehran Stock Exchange from 2003 to 2009 and found the relationship between the conservatism and cost of capital is on the basis of the Spence (1973). Thus, the management can use conservative accounting policy as a quality sign to reduce the firm's information risk, and the cost of capital.

In this study, signaling theory is used in two aspects. First, signaling theory is used to describe a firm's capital structure that signals investors' future financial outlook. The interest expense is a factor used in determining the cost of capital of the business. Second, signaling theory is used to describe the quality reflection of accounting conservatism financial information.

2.2 The Concept of Board Structure, Board Activity, Compensation, Shareholder Structure, Audit committee and Cost of Capital

2.2.1 Board Structure

Board of directors are appointed by the shareholders to be responsible for formulating strategies, management policies, and the allocation of limited resources for maximum benefit to create wealth for shareholders (Minnick & Noga, 2010). They must also be responsible for the performance of their duties to the shareholders and be independent from the management. Strengthening the confidence of shareholders, investors, and stakeholders of the firm based on good corporate governance is essential for firms, especially those listed in the capital market since they raise funds from the public or external investors. Once the owners of these funds become shareholders, they cannot participate in the management of the company directly. Thus, they must appoint a director to manage the firm in the form of a committee. The board of directors will later appoint the management to manage the company. In other words, the board of directors is important since they manage the firm on behalf of the shareholders for the best interests of the firm and its shareholders (The Securities and Exchange Commission (SEC), 2004). A board of directors is made up of individuals with sufficient knowledge, experience, and abilities to perform their duties effectively. The board of directors should elect an independent director to be the chairman of the board. The Chairman of the board of directors and the managing director shall not be members of the same family. Moreover, the board of directors must also appoint an audit committee.

Principles of Good Corporate Governance for Listed Companies 2017 of the Stock Exchange of Thailand, or CG Code (The Stock Exchange of Thailand, 2017) set out the best practice guidelines for board of directors by suggesting firms to establish a structure of board of directors which consists of directors with various qualifications (skills, experiences, specific abilities that are beneficial to the firm), gender, and experiences that are necessary to achieve the objectives of the firm. It introduces a skill matrix of the directors' knowledge and expertise to ensure that the committee are qualified with the ability to understand and respond to the needs of stakeholders. Thus, the characteristics of the committee in various matters in the principles of good corporate governance will be considered in this research as follows:

2.2.1.1 Board Size

The board of directors consists of (1) executive director and (2) directors who do not participate in the management, including independent directors, and outside directors. Independent directors are independent directors from major shareholders, executives and related persons. Outside directors are independent from major shareholders, executives, but they may represent those who have interests with the firm, such as customers or creditors. The number of directors in each company depends on the size, type and complexity of the business. The Corporate Governance Code for listed companies 2017 requires no less than 5 and not more than 12 directors (The Securities and Exchange Commission (SEC), 2017). In this regard, the components of the Board of Directors of the listed company must comply with the rules of the SEC, namely: (1) there shall be at least one-third of the total number of independent directors, and not less than 3 persons, (2) there shall be at least 3 independent members of the audit committee in order to independently express their opinions and not allowing any person to have power over the decisions of the board of directors. According to Resource Dependency Theory, large firms need to form a large committee size to ensure that the company can manage its resources to achieve its goals. Therefore, the board size has a positive impact on business operations. However, according to agency theory, larger committees cause more agency problems since each director also expects other directors to act on his behalf resulting in the board's inability to effectively audit the business. (Yermack, 1996)

2.2.1.2 Board Independence

The independence of the board of directors reflects transparency in the administration of the firm. The Corporate Governance Code for listed companies 2017 addresses that the board may lack independence in case of board duality, or the chairman of the board is not an independent director, or the chairman of the board and the president are family members, or the chairman of the board of directors is a member of the executive committee. Therefore, it is necessary that firms should promote the balance of power between the board of directors and the management by requiring that the board shall consist of more than half of the independent directors (The Securities and Exchange Commission (SEC), 2017) to audit and monitor the performance of management. In firms of which the board mostly consist of non-executive directors, the board of directors has

the power to withdraw the executives if the firm is not performing well. According to agency theory, firms need independent directors in the board to supervise and control actions of the manager (Fama & Jensen, 1983).

2.2.1.3 Non-board duality

Board duality refers to a person holding the position of chairman of the board and the president. According to the principles of good corporate governance, the person holding the position of the chairman of the board should be an independent director with different responsibilities from the president. Therefore, the person holding the position of the chairman of the board should be separated from the person holding the position of the president to avoid unlimited power (The Securities and Exchange Commission (SEC), 2017).

Board duality has both positive and negative effects on corporate governance based on the following two theories presented in previous literature. Firstly, according to agency theory, CEO and the chairman should be separated since the board of directors is responsible for monitoring the executives, including the CEO. In case the chairman is not also the CEO, this is considered an effective tool for board monitoring (Beasley, 1996). This reduces the possibility that the executives will use excessive power (Jensen, 1993). Jensen (1993) stated that the CEO cannot act as the president of the company since the president is responsible for conducting board of director meetings and has the power to appoint, withdraw, evaluate and compensate the CEO. Daghani, Zouhayer, and Mbarek (2016) explained that if Board duality may have a detrimental effect on the business due to the decision-making is based on a sole person. Secondly, stewardship theory is a concept that supports Board duality since the board and executives can create maximum value for the firm when the owner grants independent decision-making powers to the management. Board duality improves productivity since the information the CEO and the board of directors obtain is the same set of information (Donaldson & Davis, 1991). According to stewardship theory, there is no need to separate the administration from the control (Brickley, Coles, & Jarrell, 1997).

2.2.2 Board Activity

The board should ensure that all directors are properly accountable for their duties, responsibilities and actions, and allocate sufficient time to discharge their duties

and responsibilities effectively. It is essential to hold a board meeting to monitor the performance, control and supervise the management regularly (The Securities and Exchange Commission (SEC), 2017). Key activities can be categorized as (1) board expertise (2) board meeting, and (3) board attendance.

2.2.2.1 Board expertise

Due to rapid changes in technology and limitless competition in business, firms need an effective board and consulting functions. According to resource dependence theory, directors serve to connect the firm with external factors that generate uncertainty and external dependencies (A.J. Hillman, Cannella, & Paetzold, 2000), and bring resources into the firm, such as skills, information, ties, reputation and credibility. This theory emphasizes the functions of board advisory, such as advisory boards when firms are involved in complex operations or require financial, contractual, and legal expertise (Dass, Kini, Nanda, Onal, & Wang, 2014; Dhaliwal, Naiker, & Navissi, 2010). In addition, previous studies found that not all external committees are equally effective in supervising due to their different experience in solving problems, professional experiences, and different business exposure. Thus, the diversity of responses will vary according to their abilities (Baysinger & Zardkoohi, 1986). According to Audretsch and Lehmann (2006) in science-based and high-technology industries, some characteristics and qualifications are required for board of directors, such as scientific knowledge and knowledge related to human capital which are more relevant for firms. The expertise and experience of each director may be assessed from holding positions on the board or executives in other numerous firms. However, Corporate Governance Code for listed companies 2017 provides guidelines that the board of directors should form rules for holding positions in other listed firms based on the nature of each firm. However, the total number should not exceed 5 listed firms to ensure that directors are able to have adequate time to perform their duties in the main firm.

2.2.2.2 Board Meeting

Board meetings are meant to keep the operations of the board organized, productive with the access to the necessary information. This helps to supervise the operations of the management continuously. The number of board meetings depends on the duties and responsibilities of the board and the nature of the operations. The Corporate

Governance Code for listed companies 2017 suggests that board meetings should not be less than 6 times a year. (The Securities and Exchange Commission (SEC), 2017). The time required for meetings should be sufficient for presenting and discussing important company issues. Ntim and Osei (2011) found that the frequency of board meetings improves the operating results and the value of the business (Brick & Chidambaran, 2010; Conger, Finegold, & Lawler, 1998; Hu, Tam, & Tan, 2010), and reduce earnings management (Kankanamage, 2016; Tang & Xu, 2007; Yang, Yang, & Sun, 2008). However, Vafeas (1999) found that the increase in number of board meetings can be a warning sign that the firm performance is declining; therefore, the board of directors, who represent the company, should have meetings to resolve problems for better performance in the following year.

2.2.2.3 Board attendance

Board attendance is important since it is the fundamental channel that the directors receive the information to perform their duties, give advice, supervise by attending the board meetings. The diligence of board members is often measured on the board meeting attendance frequency by each of the board members (Eluyela et al., 2018; Ghosh, 2007; Ilaboya & Obaretin, 2015; Johl, Kaur, & Cooper, 2015). Thus, effectiveness of corporate boards is improved by the meeting attendance behavior (Brick & Chidambaran, 2010; Lin, Yeh, & Yang, 2014; Vafeas, 1999), which is the committee's only publicly available tool to measure personal behavior. Board attendance can be used to check the participation in the company of each director, analyze board assignments since many of the monitoring-related tasks such as auditing, governance, selection and compensation of executives are run by the board of directors. Thus, board attendance influence governance.

2.2.3 Compensation

Board compensation is considered as a reward for the responsibility of the board and motivates the board to lead the business to achieve both short-term and long-term goals. The shareholders must approve the structure and rate of board compensation in both monetary and non-monetary form, fixed rate compensation (e.g. fixed compensation, meeting allowance), and firm performance compensation (e.g. bonuses, gratuities) (The Securities and Exchange Commission (SEC), 2017). Compensation of the executives shall be related to the firm performance (Balsam, Irani, & Yin, 2012) and be consistent

with the management skills and time of the management. Firms with complexity in management and high risks should also offer high compensation to the executives (Duong & Evans, 2015). Similarly, optimal contracting theory suggests that the amount of compensation of the board and the executives should be consistent with the scope of responsibility and the possibility that agency problem may occur. This can be considered from firm characteristics. Firms with high growth opportunities have a high chance of conflicts of interest between shareholders, directors and executives. As a result, directors and executives have to make decisions to direct, monitor policies, overseeing management in order to reduce potential problems. Thus, the amount of compensation of the directors and the executives should reflect their roles, which can be divided into two issues as follows:

2.2.3.1 Board Compensation

Determining board compensation can be explained by several concepts (Andreas, Rapp, & Wolff, 2012) as follows:

Agency theory describes the relationship between director compensation and corporate governance. This board is considered a mechanism to reduce conflicts of interest between the management and shareholders (Kumar & Sivaramakrishnan, 2008). Therefore, the shareholders will determine the compensation of the directors of the firm in order to monitor and supervise the work of the management. This reduces the cost of agency problems caused by conflicts of interest. According to agency theory, if the directors can add value to the firm through their decision-making roles to reduce of agency problems, firms with high value will provide high compensation since they tend to have numerous agency problems as the management may act for their personal interest which may not be consistent with the owners.

Stewardship theory believes that individuals, including the management are motivated to do their best for the organization (Donaldson & Davis, 1991). According to this, firms do not need to focus on determining board compensation to monitor and supervise the management. Thus, agency problems arising from the conflict of interest between the management and the owner is not significant. As a result, determining the board compensation is not related to the supervisory role of the directors.

Institutional perspective believes that compensation is determined based on references, comparisons with industry standards, expectations, other compensation provided by other firms, or practices (Aguilera & Jackson, 2003). Therefore, board compensation is not directly related or linked to the compensation, roles, or performance of the board.

2.2.3.2 CEO Compensation

Two important issues of Agency problems are the conflicts arising between shareholders and managers, and shareholder and debtholders. The shareholder will appoint a manager as a representative for management decisions and motivate them by making compensation contracts based on a series of performance measures. Therefore, the financial statements may be managed to meet the manager's preference, leading to agency costs due to information asymmetry and imperfection of compensation contracts. Kothari, Ramanna, and Skinner (2009) argued that accounting conservatism reduces agency problem between shareholder and managers in 3 aspects. Firstly, since the manager's compensation is received based on his performance, he is not willing to recognize bad news. However, with accounting conservatism leading to timely loss recognition, the manager must disclose bad news. Secondly, keeping bad news implies that the management try to invest with high risk to rely on pool performance. However, timely loss recognition will signal shareholders to hold back on the manager's investment or change the manager. Thirdly, the high compensation of manager is a shareholder's cost. The management slows the perception of bad news, but timely loss recognition limits the behavior of managers to prevent overcompensation. Conflicts between shareholders and debtholders arise when shareholders often transfer the wealth of debtholders to their shareholders through high-risk investments and high dividends. However, timely loss recognition will send signals to debtholders in a timely manner in order to intercept the actions of the shareholders.

2.2.4 Shareholder Structure

The board should understand the structure and relationship of shareholders. It may be in the form of an agreement within a family business, shareholder agreement, or the policies of the parent company that influences the management. LaPorta, Rafael, Lopez-de-Silanes, Shleifer, and Vishny (2000) argued that shareholder structure is an

important factor in corporate governance, and protecting investors (Djankov, Porta, Lopez-de-Silanes, & Shleifer, 2008) since it reduces incentives for earnings management and the mechanism for equilibrium shareholder interests to increase the significance of financial reporting (Lin, 2016b; Liu, 2019; Song, 2015a). Shareholder structure contributes to policy control and financial reporting of a firm, and significantly influences specific forms of management decisions about conservative reporting.

One outstanding characteristic of most Thai listed companies is family ownership or concentrated ownership (Alba et al., 1998; Connelly et al., 2012; Farooque et al., 2020; Wiwattanakantang, 2001). Moreover, executives and directors are also appointed by shareholders who are members of the founding family (Peng, Au, & Wang, 2001). This greatly affects the relationship between corporate governance and the cost of capital of the firm.

2.2.4.1 Family Ownership

Family business refers to a firm of which majority voting rights belong to the controlling family, including the founder of the firm who intends to pass the business down to their descendants (Corporation, 2008), or a firm with following characteristics: (1) family members of the owner control the company in various ways, (2) family members of the owner influence the management, (3) family members of the owner inherit the business (Suehiro & Wailerdsak, 2004). In Thailand, family businesses arise from business developments in the Thai economy that have grown in a concentrated or monopolistic manner. A few large business groups control more than half of the total assets of each business sector. Thus, family businesses are considered important since they are an important force in the industrial and financial development of Thailand.

Furthermore, Chienwittayakun and Mankin (2015) pointed out that family owned businesses account for 95% of the total enterprises in Thailand. According to PwC (2019), Family-owned businesses in Thailand are growing stronger, which have dominated the business landscape, diversifying in every industrial sector with a combined wealth of more than 30 trillion baht, out of a total net worth of THB 42 trillion from all Thai businesses, and ranked seventh in Asia Pacific in 2018.

Family businesses encounter agency cost differently depending on their governance choices. Agency costs between owners and managerial agents can be

advantageously low if there is a close alignment or even identity between the interests of owners and managers. (Fama & Jensen, 1983; Fama & Jensen, 1983; Miller & Breton-Miller, 2006). However, Connelly et al. (2012) found that governance measures in Thailand are not very effective in mitigating agency conflicts in the presence of concentrated or family ownership, since owners are able to manipulate governance measures with their high voting control. This leads to expropriation of minority shareholders for controlling shareholders (Miller & Breton-Miller, 2006) (Type II agency conflict). Therefore, it will be interesting to see how the ownership structure will affect cost of capital, especially in an environment in which information asymmetry is likely to be high.

2.2.4.2 Director Ownership

Concentrated ownership also encounters conflict of interest between controlling shareholders and minority shareholders, or Type II Agency Theory. Major shareholders take advantage of voting rights that go beyond cash-flow rights in making decisions about the firm's operations which may advantage, or disadvantage the firm. In firms with good corporate governance, controlling shareholders cannot exercise greater voting rights to take advantage of minority shareholders. According to stewardship theory developed by Davis et al. (1997), the controlling shareholder who also a part of the board of directors prioritises corporate governance, realizes his responsibility towards the firm, and considers the long-term well-being of the firm. However, firms with motivated board of directors may not prioritize good corporate governance.

The motivation of the board of directors can be divided into 2 issues: incentive alignment effect and incentive entrenchment effects. Firstly, incentive alignment effect refers to a case that controlling shareholders with high administrative and control powers over the firm will not seek personal interests since it will decrease the value of the firm's shares. Therefore, the interests of controlling and minor shareholders are consistent. Secondly, incentive entrenchment effects refers to a case that controlling shareholders with a lot of management power and control over the company, and a concentrated shareholding structure tend to prioritize their personal interests. In fact, "accounting conservatism" improves corporate governance, reduces agency costs arising from compensation and debt contracting and reducing litigation costs (Guay &

Verrecchia, 2017). This results in better shareholder protection and company value (García Lara, García Osma, & Penalva, 2009; LaFond & Watts, 2008) since the good quality of accounting information reduces the cost of capital. This is confirmed by the indirect link between information quality and cost of equity by Lambert, Leuz, and Verrecchia (2007).

2.2.4.3 CEO Ownership

Agency problem is caused by conflicts of interest between managers and outside shareholders (Jensen & Mecking, 1976), or Type I Agency Theory. For example, firms use corporate value to assess their management every year, while managers still want to remain in the position. These conflicts will lead to the development of corporate governance in order to ensure the suppliers of finance to corporations that they will receive the maximum return on their investment (Shleifer & Vishny, 1997). Denis (2001) proposed two solutions, namely monitoring solutions and incentive alignment solutions. Monitoring solutions are the characteristics of setting up rules for managers to act that will lead to the best interests of shareholders, while incentive alignment solutions reduce conflicts between the principal and the agent by granting the management ownership to have a stake in the firm performance together with other shareholders. As a result, the interest of the managers is aligned with that of shareholders. The two most common form of incentive alignment solution are equity-based compensation and management ownership (Core, Holthausen, & Larker, 1999). These approaches are often applied to firms with a diversified ownership structure to incentivize executives to act in the company's best interests (Jensen & Mecking, 1976).

2.2.5 Audit Committee

Nowadays, audit committee is in the form of a sub-committee of the board of directors, and is an essential mechanism for corporate governance. Audit committee as an independent director can reduce the burden of the board of directors and provide flexibility in management. The audit committee can provide a direct vision and opinion on financial reports and internal control systems, as well as consult with the management and external auditors to manage potential risks and ensure that financial disclosures are in accordance with the standards. Thus, audit committee size, and audit committee with financial expertise will be studied in this research.

2.2.5.1 Audit Committee Size

Audit committee is a sub-committee established to oversee the preparation of financial reports, and disclosure of accurate and complete information in accordance with financial reporting standards. According to sufficient standards of internal control and internal audit, the board shall establish an audit committee that comprises at least three independent directors (The Securities and Exchange Commission (SEC), 2017). They are required to have sufficient knowledge and experience to act as an audit committee in order to review whether the firm acts in compliance with the Securities and Exchange Act, accuracy and completeness of financial reporting, internal control system and an appropriate internal audit system, compliance with relevant laws and standards, independence of the internal audit unit, and the appointment of auditors and the Head of Internal Audit.

2.2.5.2 Audit Committee Financial Expertise

The Corporate Governance Code for listed companies 2017 requires at least one audit committee to have sufficient knowledge and experience to be able to review the reliability of financial statements, select an auditor, propose compensation, and attend a meeting with the auditor. The appointment of an audit committee member with financial expertise is therefore an important mechanism to enhance the efficiency of the audit committee in today's complex and highly integrated global business economy (Baxter & Cotter, 2009; Dhaliwal et al., 2010). An audit committee member with financial expertise is recognized as the key audit committee member with higher responsibility for the financial reporting process than other audit committee due to their greater knowledge and understanding of the proposed accounting and financial issues.

2.2.6 Cost of Capital

Cost of capital is the required rate of return, or the price of capital that must be paid to the owner of the capital. In case the investment has only the equity owner, the cost of capital from the owner is equal to the rate of return that the owner wants from the investment. Such cost of capital is called "cost of equity", and the rate of return that creditors want from the investment is called "cost of debt".

2.2.6.1 Cost of Equity

Cost of equity is the compensation that must be paid to the shareholders who invest in the business. The value of capital is called "dividend". There are also other elements that are related to the cost of capital, such as the quality of financial reports that results in shareholder uncertainty in investment. Due to such uncertainty, shareholders demand higher returns or dividends to compensate for investment risks. The consequence is that the business has higher investment costs. Although securities generate returns for investors, it has to bear the potential risks. As a result, investors are unable to achieve the goals that have been set. Therefore, prior to any investment decision, investors must have tools used to analyze data as a guide for decision making in order to receive the expected return and to reduce the risks that may arise from the investment.

Financial scholars believe that diversification can reduce risks. Systematic diversification can be achieved by selecting financial assets that have no correlation and expected return. In addition, the greater risk will be reduced if the asset with a predictable return has a negative correlation. However, this causes problems in practice due to the large number of financial assets. In order to reduce risks as much as possible, it is necessary to find the relationship between every pair of assets by evaluating and forecasting, which is not economically worthwhile.

The most popular equity cost estimation model in finance is the capital asset pricing model (CAPM) introduced by William Sharpe, John Lintner and Jan Mossin in 1964. This concept was developed from Markowitz portfolio theory, which describes the valuation of yields or prices of securities and stocks in the capital market. The CAPM model based on the perfect market has only systematic risk or β as the only factor that investors expect from the rate of return. This systematic risk value is an indicator of market risk which is important to the investment of the firm. It is essential to manage the structure of the investment to an acceptable level of risk and determine the nature of the return on investment. In addition, the systematic risk factor is one of the factors in the model of Fama and French (1992). It consists of systematic risk, firm size, and book value to market capitalization, which is widely recognized in financial research.

CAPM is an equilibrium model on security market line (SML). It is an academically recognized tool for investment analysis. The CAPM model is used for

securities pricing by comparing forecast with financial assets' risk-return relationship. This helps investors make more accurate investment decisions. The model can be shown as follows:

$$E(R_{i,t}) = R_{f,t} + B_i (E(R_{m,t}) - R_{f,t})$$

Where

- $E(R_{i,t})$ = The expected rate of return of a financial asset i
- $R_{f,t}$ = Return on risk-free assets
- B_i = Beta coefficient, which is a systematic measure of the nondiversifiable risk of an asset i
- $E(R_{m,t})$ = The average rate of return on an asset with the expected risk of exposure, known as the market return.

CAPM shows the relationship between expected rate of return ($E(R_{i,t})$) and asset risk (B_i) and explains that total asset risk can be divided into diversifiable component and nondiversifiable component. CAPM theory assumes that investors are able to diversify risks. Thus, diversifiable component, but nondiversifiable component, will be eliminated. Therefore, only this risk affects the expected rate of return ($E(R_{i,t})$). The risk in this model is called “systemic risk” represented by beta coefficient (BETA) of the financial asset as in the equation.

Assumptions of the Use of CAPM

CAPM theory was developed based on several important assumptions:

1. Homogeneous expectations: Investors similarly forecast both in terms of risk assessment and $E(R_{i,t})$,
2. Risk free rate: asset with no risk return and the return this asset is $R_{f,t}$,
3. Equal lending-borrowing rates: the interest rates for loan are the same,
4. Efficient market: financial market is an efficient market that investors receive the same and equal information in a timely manner. Since such news reflects asset price, no one can consistently make extra profits,
5. Rational investor: investors have similar rational decision-making and are risk aversors,
6. Perfectly liquid asset: all assets have the highest liquidity. They can be bought and sold immediately. The assets can also be divided into units at all times.

7. No tax and investing in stocks and other financial assets has no transaction cost.

CAPM Application

The application of CAPM is based on the assumption that the systematic risk, or BETA, of an asset or stock remains constant over time. BETA is therefore assessed based on historical data. This BETA can be estimated from a coefficient showing changes in the return on an investment compared to changes in the market rate of return, which can also be used as a proxy of BETA in the future. The analysis is conducted as follows:

1. Finding the relationship of stock return (R_i) and market return (R_m) by using the regression equation with the following steps:

1.1 Collect stock price information and other returns, such as dividends. Collect the overall average return of the stock market by calculating the period return, such as monthly, and weekly return of the stocks based on available data (R_i) and average stock market return (R_m) over the same period. To use monthly data, the information in the past 5 years will be analyzed. In case of weekly data, the information in the past 2 years will be analyzed.

1.2 Use a statistical program, such as SPSS to find the relationship between stock return and market returns by using historical data approximately 2-5 years according to the regression equation as follows:

$$R_{i,t} = a + b R_{m,t} + e$$

In some cases, it is calculated by correlating the difference between stock yields and government bonds with the difference of market yields and government bonds as follows:

$$(R_{i,t} - R_{f,t}) = a + b (R_{m,t} - R_{f,t}) + e$$

The coefficient of variable b obtained from the regression equation shows the relationship of R_i and R_m that will be used to represent the value BETA (B_i) during that time.

1.3 Some analysts may replace BETA with the calculated value to use as a proxy of B_i while B_i is adjusted according to the guidelines for further application.

2. Finding the variance between the return from securities and the market and the variance in the market return (O'Hanlon & Steele, 2000). The formula for calculating the systematic risk factor (BETA), or β_1 is as follows:

$$\beta_1 = \frac{\text{Cov}(R_i, R_m)}{\text{Var}(R_m)}$$

Where:

$\text{Cov}(R_i, R_m)$ = The covariance between expected return from securities i and from market m, by multiplying the products of $(R_{it} - \bar{R}_{it})$ and $(R_{mt} - \bar{R}_{mt})$.

$\text{Var}(R_m)$ = The variance of the expected return from general stocks in the market can be calculated by $(R_{mt} - \bar{R}_{mt})^2$

R_{it} = The actual rate of return on securities i at the end of the month at t is calculated by

$$R_{it} = \frac{P_{it} - P_{i(t-1)} + D_t}{P_{i(t-1)}}$$

P_{it} = Closing price of securities i at the end of the month at t.

$P_{i(t-1)}$ = Closing price of securities i at the end of the month at t-1.

D_t = Dividends paid during the period t.

\bar{R}_{it} = The average rate of return on securities i at the end of month at t.

$$\bar{R}_{it} = \frac{\sum_{t=1}^{n-1} (R_{it})}{n - 1}$$

n = Return on securities calculated from monthly data.

R_{mt} = The actual rate of return from general securities on the market at the end of the month at t.

$$R_{mt} = \frac{SET_t - SET_{t-1}}{1}$$

$$\overline{R_{mt}} = \frac{\sum_{t=1}^{n-1} (R_{mt})}{n - 1}$$

SET_t = The monthly stock price index of the market at the time t
 SET_{t-1} = The monthly stock price index of the market at the time t – 1
 R_{mt} = The rate of return on general securities in the market at the end of month at t.

Beta (β), a component of the calculated systemic risk, means:

Where beta is greater than 1 ($\beta > 1$), changes of risk in securities are the same as changes in average market risk, and the risk value of securities is higher than average market risk.

Where beta is equal to 1 ($\beta = 1$), changes of risk in securities are the same as changes in average market risk, and the risk value of securities is equal to average market risk.

Where beta is greater than 0 but less than 1 ($0 < \beta < 1$), changes of risk in securities are the same as changes in average market risk, and the risk value of securities is lower than average market risk.

Where beta is greater than -1 but less than 0 ($-1 < \beta < 0$), changes of risk in securities are inverse to the changes in average market risk, and the risk value of securities is lower than average market risk.

Where beta is -1 ($\beta = -1$), changes of risk in securities are inverse to the changes in average market risk, and the risk value of securities is equal to average market risk.

Where beta is less than -1 ($\beta < -1$), changes of risk in securities are inverse to the changes in average market risk, and the risk value of securities is more than average market risk.

2.2.5.2 Cost of Debt

Cost of debt refers to the creditor's desired rate of return, or the return the creditor receives on the loan, or the interest rate the business pays on the loan in short-term or long-term. In practice, the cost of debt estimation method must be used from determining the rate of return that the lender requires or r_d , by considering the cost of each type of debt. For example, issuing bonds with fixed and floating interest rates, or issuing ordinary and convertible debentures, and issuing bonds with and without a sinking fund. The choice of which debt instrument to use in calculating the cost of the debt depends on which asset the entity will invest in. It also depends on the condition of the capital market at the time of the issuance.

The interest rate of the newly issued debentures may not be the same rate as the corporate bonds that have been issued. The cost rate of the existing bonds is called "historical cost" or "embedded cost". In the event that a firm issues bonds and they are traded in the capital market, the finance department of the firm can use the market price of the bonds to calculate the rate of return the bondholders will receive, or yield to maturity (YTM). Since YTM is the rate of return that bondholders expect to receive, the firm can use the YTM of the old bonds as the r_d value of the newly issued bonds. In case the firm does not have bonds traded in the capital market, the finance department may also use the returns of other firms doing similar business with have bonds traded in the capital market to estimate the r_d .

2.2.5.3 Weighted Average Cost of Capital

Most businesses use capital components. Creditors and owners can bear risk and demand rate of return at different level. The rate of return of each source of capital is called "component cost". If the firm wants to analyze budget decisions, the appropriate cost of capital should be the weighted average costs of capital or (WACC). In business finance management, WACC is used to make an investment decision in the project. The decision depends on project rate of return compared to the new cost of capital, or marginal cost. Thus, firms that finance the leverage to invest in new projects only use the newly-acquired cost of debt in estimating WACC.

However, financial executives are well aware of the types of debt instruments that their businesses use on a regular basis. For example, a firm typically

provides short-term financing to fund its working capital by issuing commercial paper, and provide long-term financing for project investments by issuing 10-year bonds. To estimate WACC for capital budget decisions, the firm's financial executives need to use the cost of the 10-year bond to determine the cost of debt. In addition, the rate of return that the bondholder wants or r_d is not the firm's cost of debt since the interest expenses can be deducted from income for tax purposes. Thus, the firm's cost of debt will be less than the desired rate of return for shareholders. To calculate the weighted average cost of capital, after-tax cost of debt or $r_d (1-T)$ is used, where T is the tax rate.

2.3 Linkage Literature Review and Research Hypotheses Development

2.3.1 Board Structure and Cost of Capital

The board of directors is responsible for the return of investment and protecting shareholders' interest while being flexible and ready to deal with any issues. To achieve the firm's ultimate goals, a board structure must be formed and comply with the rules and regulation to generate value (Richard, 2017). These variables include board size, board independence, and non-board duality.

2.3.1.1 Board Size

“Board size” refers to the number of board of directors. Studies have shown that board of directors is an important component of “internal corporate governance.”. Numerous studies use “board size” to indicate effectiveness of the board of directors (Wahab et al., 2020). However, there are still conflicting ideas for determining the optimal board size. Some studies have found that having a large number of committees is beneficial to firms in terms of auditing, and applying the knowledge of the board to manage the firm which can reduce the cost of equity. The results found by Das and Pattanayak (2019), who conducted a research in Indian financial market from 2001 to 2016, is consistent with Bravo, Reguera-Alvarado, and Perez (2018), who studied firms belonging to manufacturing industry listed on Standard and Poor's 500 for the year 2009 and found that board size lead to a reduction in the cost of capital through the disclosure of information on risks. According to Ongklang (2016), board size was negatively correlated with cost of equity and WACC in Thai firm during 2014. In addition,

Hashim and Amrah (2016), who studied companies in the Sultanate of Oman from 2004 to 2011, also revealed negative correlation between cost of debt and board size.

However, larger boards can cause inefficient communication and delays in decision making which leads to greater damages rather than the benefits (Lorca, Sanchez-Ballesta, & Garcia-Meca, 2011b; Yermack, 1996). This is supported by Singhal (2014), who conducted a research in India from 2003 to 2013, Jantadej and Wattanatorn (2020) who conducted a research in Thailand from 2007 to 2016, Ndubuisi, Mary-Fidelis, Leonard, and Chinyere (2017), who conducted a research in Nigeria from 2010 to 2015, and Usman, Farooq, and Zhang (2019), who conducted a research in China from 2009 to 2015. The results found that board size is positively associated with the cost of debt financing. Similarly, Ramachandran, Ngete, Subramanian, and Sambasivan (2015) found that in Singapore the board size with a strong positive relationship with discretionary accruals can be interpreted that if the number of directors on the board is higher, the board may be motivated to use discretionary accruals which leads to earning management. Moreover, the larger board size may have poor performance since they do not agree with the CEO (Lipton & Lorsch, 1992), which is a disadvantage according to the strategic decision-making perspective (Goodstein, Gautam, & Boeker, 1994). This leads to the difficulty of collaborating and it challenges free riders (Forbes & Milliken, 1999), while smaller committees can better promote corporate value (Yermack, 1996). Therefore, the board size is inversely correlated with firm performance (Guest, 2009). Pozen (2010) confirmed that the firms that went bankrupt in 2008 had a large board size and a large number of independent directors. Therefore, it is recommended that each firm should have approximately 7 directors.

2.3.1.2 Board Independence

Firms authorize independent professional to audit and monitor the management's performance to ensure the quality information disclosure (Goh, Tai, Rasli, Tan, & Zakuan, 2018). Inverse relationship between board independence and cost of capital have been found by several researchers, such as Das and Pattanayak (2019), who studied Indian financial market from 2001 to 2016, and Bravo et al. (2018), who studied the cost of capital measure by the model developed by Easton (2004). They revealed that board independence in manufacturing industry listed on Standard and Poor's 500 for the

year 2009 lead to a reduction in the the cost of capital through the disclosure of information on risks. However, the studies on cost of debt we conducted by Hashim and Amrah (2016), who studied the Sultanate of Oman from 2004 to 2011, and Usman et al. (2019), who studied the Shanghai and Shenzhen stock exchanges from 2009 to 2015, and found an inverse correlation between board independence and cost of debt.

In contrast, Ndubuisi et al. (2017), who studied the effect of corporate governance on borrowing cost of firms in Nigeria between 2010-2015, found that board independence have a positive effect on borrowing cost since they do not hold any executive powers and who usually sit on the boards of other firms too. Similarly, Singhal (2014), who conducted a research in India between 2003-2013, found that board independence positively correlates with WACC and cost of equity. This is in line with Shah and Butt (2009), who found that board independence positively correlated with cost of equity in firms in Pakistan. This reflects the lack of strict compliance with the regulations of the stock exchange, and investors lack awareness of the board independence. Furthermore, Nguyen, Evans, and Lu (2017) examined the impact of independent directors on firm performance in Vietnam from 2010 to 2014, and found that independent directors have an overall negative effect on firm operating performance. This is in line with Black, De Carvalho, and Gorga (2012), who examined Brazilian firms' governance practices at year-end 2004, and found that greater board independence predicts lower Tobin's Q.

2.3.1.3 Non-Board Duality

According to agency theory, the existence of board duality leads the CEO who is also the chairman of the board protects his personal interest by expropriating profits from shareholders, which causes of agency conflict (Mubeen, Han, Abbas, & Hussain, 2020) and increases the cost of capital. Singhal (2014), who conducted a research in India, found that, in lenders' perspective, they have to bear higher risk in the case of board duality; therefore, they want to compensate for such risks in the form of interests. As a result, the positive correlation between cost of debt and board duality. Anwar, Khan, and Danish (2019) examined the effect of governance towards firms' cost of equity capital in Asian countries over the period of 2006-2015, and found that Board duality have significant positive association with firm's cost of equity. Interestingly,

Bravo et al. (2018) found that non- board duality leads to a reduction in the cost of equity based on the information on risks disclosure of listed company. This is in line with Ongklang (2016), who found that non- board duality negatively correlated with cost of equity and WACC during 2014 in Thailand.

However, according to stewardship theory, the study on board duality and the cost of capital have an inverse effect. Since top executives want to be a good steward of the corporate assets to add value to the firm, the role of the chairman and CEO is played by the same person (Mubeen et al., 2020) to implement the policies effectively, and reduce agency and cost of capital. Khemakhem and Naciri (2015) in listed company on the American stock exchange during 2004-2006 found that board duality is negatively correlated with cost of equity capital. Similarly, Hassan, Kayani, and Ayub (2018) analyzed the impact of corporate governance attributes on cost of equity capital in firms listed on Pakistan Stock Exchange between 2003- 2014, and found that board duality have negative relationship with firm cost of equity. Furthermore, Anwar (2020) determined connection of governance mechanisms with cost of capital based on Agency and Stewardship theories for companies in agriculture sector in 20 Asian countries from 2009-2018. It was found that board duality had negative correlation with WACC. Moreover, Usman et al. (2019), who studied firms listed on the Shanghai and Shenzhen stock exchanges during 2009-2015, found that board duality was negatively correlated with cost of debt.

From literature review as shown in Table 2.1 , most studies provide evidences, including board size, board independence and non-board duality leading to a reduction in cost of capital. Thus, the hypothesis is that board structure has a negatively direct effect on cost of capital.

Table 2.1 Summary of Literature Review on Board Structure and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Board size, and Board independence	Das and Pattanayak (2019)	To study the impact of corporate governance attributes on cost of equity evidence from an emerging economy.	Market: Indian financial market Samples: 319 firms (5,104 firm-year observations) from 2001 to 2016. Method: Regression analysis Dependent variables: Cost of equity.	Board size and board independence had a negative effect on Cost of equity.
Board size, Board independence, and Non-board duality	Bravo et al. (2018)	To analyze whether the theoretical relationship between the board composition and the cost of capital is mediated by risk disclosure practices.	Market: Standard and Poor's 500 Samples: All the companies belonging to manufacturing industry listed on Standard and Poor's 500 for the year 2009. Method: Regression analysis Mediated variables: Risk disclosure Dependent variables: Cost of capital (Easton, 2004)	Board size, board independence and non-board duality had a negative effect on cost of capital.

Table 2.1 Summary of Literature Review on Board Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board size, and Non-board duality.	Ongklang (2016)	To investigate the effects of corporate governance on the cost of capital.	<p>Market: The Stock Exchange of Thailand</p> <p>Samples: 303 listed firms in the year 2014.</p> <p>Method: Multiple Linear Regression</p> <p>Dependent variable:</p> <ul style="list-style-type: none"> - Cost of Debt: Interest expense for the year divided by the average short-term and long-term debt during the same year - Cost of Equity: Capital Assets Pricing Model (CAPM) - WACC: The weighted average cost of capital. 	Board size and non-board duality had a negative effect on cost of equity and WACC. However, a significant relationship between board size and cost of debt was not found.
Board size, and Board independence	Hashim and Amrah (2016)	To determine whether there is any difference in the association among the corporate governance mechanisms and the cost of debt between the family and non-family-owned companies.	<p>Market: the Muscat Securities Market, the Sultanate of Oman</p> <p>Sample: 68 listed companies (476 firm-year observations) in 2005-2011.</p> <p>Method: Regression analysis</p> <p>Dependent variables: Cost of debt: Interest expense/average of total short-term and long-term debt</p>	Board size and board independence had a negative effect on cost of debt.

Table 2.1 Summary of Literature Review on Board Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board size, Board independence, and Board duality	Singhal (2014)	To investigate the impact of corporate governance on firm performance and valuation in India.	Market: Bombay Stock Exchange Samples: 22 Companies (4,840 firm-year observations) from 2004-2013. Method: Regression analysis Dependent variable: Cost of Equity: CAPM, Cost of Debt and WACC	Board independence is positively associated with cost of equity and WACC. Board size and board duality were positively associated with cost of debt
Board size	Jantadej and Wattanatorn (2020)	To investigate the relationship between the mechanisms, namely board effectiveness and the cost of debt, to improve corporate governance in an emerging market.	Market: Stock Exchange of Thailand Samples: 40 active companies (176 firm-year observations) between 2007 and 2016 Method: Regression analysis Dependent variable: Cost of Debt: the weighted average cost of debt financing of firm	Board size is positively associated with the cost of debt.
Board size, and Board independence	Ndubuisi et al. (2017)	To study the effect of board size, ownership concentration and board independence on borrowing cost.	Market: Nigeria Stock Exchange Samples: 7 brewery firms listed (42 firm-year observations) from 2010-2015. Method: Regression analysis Dependent variable: Borrowing cost: financial cost / total debt	Board size and Board independence have a positive and statistically significant effect on borrowing cost.

Table 2.1 Summary of Literature Review on Board Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board independence, and Board duality	Usman et al. (2019)	To investigate the question concerning whether gender diversity in the boardroom matters to lenders or not.	<p>Market: The Shanghai and Shenzhen stock exchanges.</p> <p>Samples: 5,806 firm-year observations from 2009 to 2015 of all A-share listed companies.</p> <p>Method: Ordinary least squares regression and firm fixed effect regression</p> <p>Dependent variable: Cost of debt: finance cost divided by the sum of short-term and long-term debt</p>	Board structure: board independence, board duality, and director ownership negatively, but board size positively related to cost of debt.
Board size	Ramachandran et al. (2015)	To examine the influence of corporate governance practices on earnings management.	<p>Market: the Singapore Stock Exchange</p> <p>Samples: 326 listed companies for the years 2010 and 2011.</p> <p>Method: Structural Equation Modeling (SEM)</p> <p>Dependent variable: Earning management through discretionary accruals by applying the modified Jones model.</p>	The board size had a strong positive relationship with discretionary accruals.
Board independence	Shah and Butt (2009)	To examine the impact of the quality of corporate governance on the expected cost of equity.	<p>Market: Karachi Stock Exchange</p> <p>Samples: 114 listed companies for the period 2003-2007</p> <p>Method: Ordinary least squares regression</p> <p>Dependent variable: The expected cost of equity: CAPM</p>	A positive relationship between board independence with the cost of equity.

Table 2.1 Summary of Literature Review on Board Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board independence	Nguyen et al. (2017)	To investigate the impact of independent directors on firm performance in Vietnam.	Market: Ho Chi Minh Stock Exchange (HoSE) and Hanoi Stock Exchange (HaSE). Samples: 217 Vietnam-listed companies during the period from 2010 to 2014. Method: Ordinary least squares regression Dependent variable: Firm performance: ROA	The negative relationship between independent directors and firm performance is stronger in firms that the State is a controlling shareholder.
Board independence	Black et al. (2012)	To examine important relationship between an overall governance index and firm market value.	Market: Four major emerging markets – Brazil, India, Korea, and Russia Samples: 66 private-nonfinancial Firms (128 total observations) for 2005 or 2006 Method: Ordinary least squares regression Dependent variable: Tobin's Q	Greater board independence predicts lower Tobin's q.
Board duality	Anwar et al. (2019)	To investigate whether governance affect firms' cost of equity capital in Asian countries	Market: 24 Asian countries Samples: 363 non-financial multinational firms over the period of 2006 to 2015 Method: Panel data regression Dependent variable: Cost of equity: CAPM, implied cost of equity: Model of Ohlson and Juettner-Nauroth (2005)	Board duality had significant positive effect on cost of equity (CAPM), but ownership concentration had a significant negative effect on cost of equity (CAPM)

Table 2.1 Summary of Literature Review on Board Structure and Cost of capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board duality	Khemakhem and Naciri (2015)	To examine the association between board and audit committee characteristics and cost of equity capital.	Market: U.S. and Canadian markets Samples: 139 firm-years observation from S&P / TSX300 Toronto index in 2004, 2005 and 2006 Method: Ordinary least squares regression Dependent variable: Cost of equity capital is determined by (Ohlson & Juettner-Nauroth, 2005)	The board duality was negatively related to the cost of equity.
Board duality	Hassan et al. (2018)	To analyze the impact of corporate governance attributes on cost of equity capital	Market: Pakistan Stock Exchange Samples: 230 Non-financial listed firms from 2003-2014 Method: Panel data regression Dependent variable: Cost of capital (DCAPM)	board duality had a significant negative effect on cost of equity (DCAPM)
Board duality	Anwar (2020)	To determine connection of governance mechanisms with cost of capital based on Agency theory and Stewardship theory.	Market: 20 Asian countries Samples: 363 agricultural firms from 2009-2018 Method: Panel data regression Dependent variable: Cost of capital: WACC	Board duality and concentrated ownership had significant negative effect on cost of capital (WACC)

2.3.2 Board Activity and Cost of Capital

2.3.2.1 Board Expertise

It is expected that a committee made up of very knowledgeable members in order to perform better in supervision and monitoring the firm performance, as well as good decision-making to reduce default risk (Ashbaugh-Skaife, Collins, & LaFond, 2006; Klein, 1998). The board's competence or expertise can be measured by the percentage of board members taking a part of the board of other firms. This reputation matter in the market for directors is supported by Fama and Jensen (1983). Similarly, Ferris, Jagannathan, and Pritchard (2003) have stated that busy boards are just as effective as non-busy boards in terms of governance. They tested the hypothesis that directors taking a part in several committees would not be unable to adequately supervise the administration. The results showed that firm performance has a positive effect on the number of appointments held by a director.

Masulis and Mobbs (2014, 2017) and Huang, Lobo, Wang, and Zhou (2018) found that directors with multiple directorships spend more time and effort on their more prestigious boards, which is measured by firm's market capitalization. In addition, Huang, Wang, and Xie (2021) tested that cost of equity reflect the dedication of time of the directors taking a part in several boards, and found that firms receiving more director attention (or firms with a greater proportion of independent directors who view their directorships with the firms as high prestige) have lower costs of equity. The study of Goncalves, Rossoni, and Mendes-Da-Silva (2019) on Board social capital reduces implied cost of capital for private companies but not of state-owned companies in Brazilian stock exchange from 2002 to 2015 by applying board social capital proxy that weights the presence of the outsider directors by the market value of the interconnected company. They assumed that outsider directors from more valuable firms have both greater power of influence and access to more valuable information and resources. They found that the board relational resources significantly reduce the implied cost of capital for private companies. This is similar to the study of Rossoni, Aranha, and Mendes-Da-Silva (2018) on the complexity of social capital: the influence of board and ownership interlocks on implied cost of capital in Brazilian stock exchange from 2010 to 2011.

They found that while the increase in the relational resources of the board (board social capital) reduces the implied cost of capital.

For cost of debt, Ashbaugh-Skaife et al. (2006) tested whether regulated firms have higher credit ratings than non-regulated firms by studying U.S. firms in 2002, and found that credit ratings were positively correlated with the board's expertise. In other words, the expertise of the committee lowers debt cost for firms. This is supported by the study of Fields, Fraser, and Subrahmanyam (2012), who analyzed the relation between board quality and the cost of debt of large US public firms between 2003-2005. They found a greater advisory presence on the board (the percentage of the board comprised of executives from other companies) is correlated with lower loan costs. However, certain studies suggest that if several directors of the firm taking a part of the board in other firms, this may reduce the effectiveness of directors' supervision (Fich & Shivdasani, 2006; Shivdasani & Yermack, 1999; Yermack, 1996), and increase cost of capital. Similarly, Sharma, Sharma, Tanyi, and Cheng (2020) found that multiple directorships of non-audit committee directors have a positive correlation with the cost of equity measured by the model of Gode and Mohanram (2003). However, the correlation with cost of equity was not found when it was measured by the model of Easton (2004) and Claus and Thomas (2001). This is in line with the study of Daniliuc and Wee (2020) using the entire sample of Australian publicly listed firms. Significant changes in firm performance affected by busy directors due to mergers and reductions in appointment of board of directors were not found in their study.

2.3.2.2 Board Meeting

Prior studies used frequency of board meetings to check on the quality of corporate governance as it ensures the involvement of directors in the strategic decisions of the firms (Bozec & Bozec, 2011). When investors are confident and need a low return on investment, it leads to low cost of capital. Busru (2019) examined the effect of corporate governance mechanism on cost of capital in listed Indian firms for period of nine years ranging from 2007–08 to 2015–16, and found that board activities in the form of meetings and attendance has significant negative impact on cost of capital both cost of debt and equity. This is in line with Hashim and Amrah (2016), who found that board meeting in the Sultanate of Oman in 2004-2011 was negatively related to the cost of debt,

and the study of Lorca, Sanchez-Ballesta, and Garcia-Meca (2011a) in Spanish listed companies during 2004–2007.

However, Jantadej and Wattanatorn (2020) examined the relationship between the mechanism to improve corporate governance namely board effectiveness and the cost of debt in Thailand between 2007 and 2016, and found that the number of board meeting is positively associated with the cost of debt financing. However, Hassan et al. (2018), who analyzed the impact of corporate governance attributes on cost of equity capital in firms listed on Pakistan Stock Exchange between 2003- 2014, found that board meeting have statistically insignificant coefficient values. This is in line with Utami and Pernamasari (2020), who found that the frequency of audit committee meeting has no influence on the cost of equity capital in manufacturing companies listed on Indonesia Stock Exchange according to the annual report from 2011 to 2013. In addition, Srivastava (2019) found no impact of board meeting on cost of equity evidence from India from 2001 to 2016.

2.3.2.3 Board Attendance

Board attendance is the key factor for the board of directors to receive corporate information to make a decision and monitor the management (Adams & Ferreira, 2008). Thus, the attendance rate of directors in the board meeting reflects the effort and intention to perform the duties of the board of directors (Chou, Chung, & Yin, 2013; Lin, Yeh, & Yang, 2014). Thus, the attendance of the meeting should be disclosed in the financial statements so that the investors can see the efforts of the Board. Ghouma, Ben-Nasr, and Yan (2018) also used board attendance to be a factor in selecting companies with quality of information disclosure in the study on the impact of the corporate governance on bond spreads in Canadian listed companies as of 2014. Additionally, the study of Katti and Raithatha (2018) on governance practices and agency cost in emerging market: evidence from India revealed that board attendance is important in terms of governance characteristics, and influences the agency cost. In other words, when agency cost decreases, the cost of capital also decreases. This is supported by the study of Busru (2019) in India with the data from 2007 to 2015. The results showed that board attendance reduces cost of capital, both cost of debt and cost of equity. Furthermore,

when firms hold additional meetings, higher director attendance is associated with higher firm performance.

According to Jantadej and Wattanatorn (2020), who examined the relationship between the mechanism to improve corporate governance, namely board effectiveness and the cost of debt in Thailand from 2007 to 2016, found that no relation between board attendance and cost of debt.

From literature review as shown in Table 2.2, several studies found that board expertise, board meeting, and board attendance lead to the reduction in cost of capital. Thus, the hypothesis is that board activity has negatively direct effect on cost of capital.



Table 2.2 Summary of Studies on Board Activity and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Huang et al. (2021)	To study the relation between independent director attention and the cost of equity capital.	<p>Market: Director data available in Risk Metrics, which covers board information for the S&P 1500 firms.</p> <p>Samples: The data is merged with Compustat from 1998 to 2011 (12,058 firm-year observation).</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variable: Implied cost of equity is determined by (Ohlson & Juettner-Nauroth, 2005).</p>	Firms receiving more director attention are associated with a lower cost of equity.
Board expertise	Goncalves et al. (2019)	To analyse how the type of ownership and control moderates the effect of the board social capital on the implied cost of capital.	<p>Market: Brazilian Stock Exchange.</p> <p>Samples: 137 companies (535 observations) from 2002 to 2015.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variable: RPEG Cost of capital</p>	The board relational resources (board social capital) significantly reduce the implied cost of capital for private companies.
Board expertise	Rossoni et al. (2018)	To study the effect of two different kinds of relevant complex networks in finance on implied cost of capital.	<p>Market: Brazilian Stock Exchange</p> <p>Samples: 62 companies (114 valid cases in total) from 2010 to 2011.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variable: RPEG Cost of capital.</p>	The increase in the relational resources of the board (board social capital) reduces the implied cost of capital.

Table 2.2 Summary of Studies on Board Activity and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Ashbaugh-Skaife, Collins, and LaFond (2006)	To investigate whether strong governant firms benefit from higher credit ratings related to weaker governant firms.	Market: the New York Stock Exchange, NASDAQ, and the American Stock Exchange Samples: 22,000 individual directors and committee structures of firms in 2002. Method: Logistic regression. Dependent variable: Long-term issuer credit ratings.	Firm credit ratings are positively related to board stock ownership and board expertise.
Board expertise	Fields et al. (2012)	To analyse the relation between board quality and the cost of bank loans.	Market: 1500 firms listed on S&P. Samples: 1,460 loans representing 1,054 firm-years of data from 2002 to 2004. Method: Ordinary least squares regression. Dependent variable: Cost of debt.	A greater advisory presence on the board is correlated with lower loan costs.
Board expertise	Sharma et al. (2020)	To examine association between cost of equity and audit committee directors' simultaneous service on multiple audit committees.	Market: Institutional Shareholder Services. Samples: 124,865 audit committee director observations from 2004 to 2015. Method: Ordinary least squares regression. Dependent variable: ex ante cost of equity capital: Gode and Mohanram (2003), Easton (2004) and Claus and Thomas (2001).	Multiple directorships of non-audit committee directors is positively correlated with cost of equity measured by the model of Gode and Mohanram (2003). No correlation with cost of equity was found when it was measured by the model of Easton (2004), and the model of Claus and Thomas (2001).

Table 2.2 Summary of Studies on Board Activity and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Daniliuc and Wee (2020)	To examine the impact of busy directors on firm performance in Australia.	Market: 1500 U.S. firms listed on S&P. Method: Ordinary least squares regression. Dependent variable: Firm performance: Tobin's q.	No significant changes in firm performance that experience a reduction in board appointments due to mergers.
Board meeting Board attendance	Busru (2019)	To examine the effect of corporate governance mechanism on cost of capital in listed Indian firms.	Market: National Stock Exchange of India Ltd. Samples: 270 firms from 2007–08 to 2015–16 Method: Ordinary least squares regression. Dependent variable: Cost of capital: Cost of debt, Cost of equity (CAPM) and WACC.	Board activities in the form of meetings and attendance has significant negative impact on cost of capital both cost of debt and equity.
Board meeting	Hashim and Amrah (2016)	To determine differences in the association among the corporate governance mechanisms and the cost of debt between the family and nonfamily-owned companies.	Market: the Muscat Securities Market, the Sultanate of Oman. Sample: 68 listed companies (476 firm-year observations) from 2005 to 2011. Method: Regression analysis Dependent variables: Cost of debt: interest expense/average of total short-term and long-term debt.	Board meeting had a negative effect on cost of debt.

Table 2.2 Summary of Studies on Board Activity and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board meeting	Lorca et al. (2011a)	To investigate the effect of different attributes of board of directors on the cost of borrowing.	Market: Spanish Stock Exchange Sample: 151 Spanish listed companies from 2004 to 2007. Method: 2SLS regression Dependent variables: cost of debt: interest expense for the year divided by the interest-bearing debt.	Board activity appeared to influence in the risk assessment of debtholders since their ability reduces agency cost and information asymmetry.
Board meeting, and board attendance	Jantadej and Wattanatorn (2020)	To investigate the relationship between the mechanisms, namely board effectiveness and the cost of debt, to improve corporate governance in an emerging market.	Market: Stock Exchange of Thailand Samples: 40 unique active companies (176 firm-year observations) from 2007 to 2016. Method: Regression analysis. Dependent variable: Cost of debt: the weighted average cost of debt financing of firm.	Board meeting was positively associated with the cost of debt, but board attendance was not associated with the cost of debt.
Board meeting	Hassan et al. (2018)	To analyze the impact of corporate governance attributes on cost of equity.	Market: Pakistan Stock Exchange. Samples: 230 Non-financial listed firms from 2003 to 2014. Method: Panel data regression. Dependent variable: Cost of capital capital (DCAPM).	Board meeting had no influence on cost of equity capital (DCAPM).

Table 2.2 Summary of Studies on Board Activity and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board meeting	Utami and Pernamasari (2020)	To analyze the impact of corporate governance on cost of equity.	<p>Market: Indonesia Stock Exchange</p> <p>Samples: 52 companies (183 observations) from 2001 to 2011.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variable: Cost of equity capital (Ohlson & Juettner-Nauroth, 2005).</p>	Board meeting had no influence on cost of equity capital.
Board meeting	Srivastava (2019)	To analyze corporate governance's impact on the cost of equity of a firm.	<p>Market: the Bombay Stock Exchange (BSE)</p> <p>Samples: 319 firms (5,104 firm-year observations) from 2001 to 2016.</p> <p>Method: panel data regression.</p> <p>Dependent variable: Cost of equity capital.</p>	Board meeting had no influence on cost of equity capital.
Board attendance	Katti and Raithatha (2018)	To examine whether governance practices reduce agency cost.	<p>Market: Bombay Stock Exchange</p> <p>Samples: 2,204 firms per year (13,569 firm-year observations) from 2005 to 2014.</p> <p>Method: Regression analysis</p> <p>Dependent variable: Agency cost: operating expense ratio and asset utilization ratio</p>	Board attendance had a negatively significant effect on agency cost, which was indicated by operating expense ratio.

Table 2.2 Summary of Studies on Board Activity and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board attendance	Gray and Nowland (2018)	To examine whether increased director workload, resulting in lower director attendance and weaker firm performance.	Market: Australian Securities Exchange Samples: 1,500 non-financial Firms (4,132 firm-year observations) from 2004 to 2007 Method: Regression analysis Dependent variable: Firm performance: Changes in return on assets.	Firms that hold additional meetings and higher director attendance had significantly higher subsequent improvements in their return on assets.



2.3.3 Compensation and Cost of Capital

2.3.3.1 Board Compensation

Another element of the board structure that reflects the motivation for directors to actively monitor the management is board compensation. It is key issue is whether the compensation granting to the board members enhances the ability to maximize success in the management or not.

According to Tran (2014), who studied German exchange-listed companies from 2006 to 2008, the results revealed that firms with high levels of financial transparency and bonus compensations face lower cost of equity. This is in line with the study of Huang, Wang, and Zhang (2009) on the effect of CEO ownership and shareholder rights on cost of equity capital of large US companies on the S&P 500 from 1989 to 1992. The study showed that equity-based compensation is negatively correlated with cost of equity capital. Similarly, Sengupta and Zhang (2014) used the firms with at least three outside directors in ExecuComp from 2006 to 2010 as the sample, and found that stock and option-based compensation received by an outside director leads to a decrease in the cost of equity capital. Furthermore, Ertugrul and Hegde (2008) examined how stock and stock option compensation for outside directors affect corporate bond yields from 2000 to 2002, and found that the greater the ratio of outside directors' stock and option compensation to total compensation was, the lower the average yield spreads on the firms' outstanding bonds. In addition, certain studies found no statistically significant correlations between director compensation and the cost of debt. For example, Fields et al. (2012), who studied listed firms in the U.S. from 2003 to 2005, and Ongklang (2016), who studied listed firms in Thailand in 2014, found that board compensation was not correlated with cost of debt, cost of equity, and WACC.

2.3.3.2 CEO Compensation

CEO compensation affects the performance of the management. According to Sharma et al. (2020)), who studied 124,865 audit committee director observations from the Institutional Shareholder Service (ISS) database from 2004 to 2015, found that CEO incentive pay was negative and significant with the cost of equity. This is in line with Chen (2012), who studied 1,500 firms on S&P from 2002 to 2007. He found that CEO options were negatively related to cost of debt since it reduces managerial risk-taking and

increases managerial incentive for financial disclosure, and both effects incur to bondholders' benefit. Similarly, Kabir, Li, and Veld-Merkoulova (2013), who tested the influence of executive compensation on cost of debt in the UK from 2003 to 2006. They found that executive compensation had inverse effects on the cost of debt. This is consistent with the results found by Bizjak, Kalpathy, and Mihov (2019), who tested the influence of executive compensation towards agency conflict between stockholders and debtholders of 750 largest firms in the U.S from 1998 to 2015. They found that performance-contingent equity awards with accounting based on vesting conditions to their CEOs had lower cost of debt in firms with a high level of conflict between equity holders and bondholders.

There have been studies on compensation paid to the management causing agency problem due to higher systematic risk in the form of overinvestment, and inefficient merger and acquisition. According to Chun (2018), he found that Korean firms from 2013 to 2015 with higher CEO pay disparity increased firms' implied cost of equity since a large pay disparity was correlated with agency problem. Thus, the firms had higher monitoring cost and more severe information asymmetry. In addition, investors recognized the overpaid amount CEO compared to the amount paid to other senior executives. This is the sign of CEO entrenchment, which indicates succession risk. Since the investors use this information to make their resource allocation decisions, they require higher rate of return leading to an increase in the implied cost of equity. This is in line with Chen, Huang, and Wei (2013), who studied firms in the U.S. from 1993 to 2007. There are also other studies that found no significant correlation between director compensation and the cost of debt, such as the study of Fields et al. (2012) on the U.S. firms from 2003 to 2005.

From literature review as shown in Table 2.3, several studies found that board compensation and CEO compensation lead to cost of capital. Thus, the hypothesis is that compensation has a negative direct effect on cost of capital.

Table 2.3 Summary of Studies on Compensation and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Board compensation	Tran (2014)	To investigate whether corporate governance affects the cost of debt and equity capital of German exchange-listed companies.	<p>Market: Frankfurt Stock Exchange.</p> <p>Sample: 426 firm-year observations from 2006 to 2008.</p> <p>Method: Regression analysis</p> <p>Dependent variables:</p> <ul style="list-style-type: none"> - Implied cost of equity capital based on PEG ratio model by Easton (2004). - Realised cost of debt, Total interest expense to average total liabilities in years. 	Firms with high bonus compensations encounter lower cost of equity.
Board compensation	Huang et al. (2009)	To investigate whether managerial ownership affects the association between shareholder rights and the cost of equity capital.	<p>Market: Nasdaq stock exchange</p> <p>Sample: The S&P 500 and annual lists of the largest corporations by Fortune, Forbes and Business Week from 1989-1992. (8,281 firm- year observations)</p> <p>Method: Two-stage least squares regression.</p> <p>Dependent variables: Cost of equity capital as estimated by the OJ model.</p>	Equity-based compensation had a negative relationship with firms' cost of equity capital.

Table 2.3 Summary of Studies on Compensation and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board compensation	Sengupta and Zhang (2014)	To examine the relationship between a firm's disclosure quality and equity-based compensation of independent members of the board of directors.	<p>Market: The S&P 500 and ExecuComp</p> <p>Sample: At least three outside directors in ExecuComp from 2006 to 2010 (5,094 firm- year observations).</p> <p>Method: Two-stage least squares regression.</p> <p>Dependent variables: Cost of equity capital as estimated by the OJ Easton (2004) model.</p>	Directors' equity-based compensation was negatively associated with the firm's cost of equity capital.
Board compensation	Ertugrul and Hegde (2008)	Examining how stock and stock option compensation for outside directors affects corporate bond yields in the secondary market	<p>Market: Mergent Bond Record.</p> <p>Samples: 393 firms (870 firm-year observations) from 2000 to 2002.</p> <p>Method: Multivariate regressions.</p> <p>Dependent variable: Cost of debt: yield spread.</p>	Outside directors' compensation had negative relationship with firms' cost of debt.
Board compensation, and CEO compensation	Fields et al. (2012)	To analyze the relation between comprehensive measures of board quality and the cost of bank loans.	<p>Market: Mergent Bond Record</p> <p>Samples: 1,054 firm years of data for firms that obtained 1,460 loans from commercial banks from 2003 to 2005.</p> <p>Method: Ordinary least squares and second stage of 2SLS analysis regressions.</p> <p>Dependent variable: The loan cost: the all-in-spread drawn.</p>	A significant relationship between the board and CEO compensation and the loan cost were not found.

Table 2.3 Summary of Studies on Compensation and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board compensation	Ongklang (2016)	To investigate the effects of corporate governance on the cost of capital.	<p>Market: The Stock Exchange of Thailand</p> <p>Samples: 303 listed firms in the year 2014.</p> <p>Method: Multiple Linear Regression</p> <p>Dependent variables:</p> <ul style="list-style-type: none"> - Cost of Debt: interest expense for the year divided by the average short-term and long-term debt during the same year, - Cost of Equity: capital Assets Pricing Model (CAPM), and - WACC: the weighted average cost of capital. 	A significant relationship between board compensation and cost of capital was not found.
CEO compensation	Chen (2012)	To examine the effect of classified boards on the cost of debt.	<p>Market: S&P</p> <p>Samples: 1,500 firms that and have public senior unsecured bonds from 2002 to 2007</p> <p>Method: Pooled OLS regressions.</p> <p>Dependent variable: Cost of debt: bond spreads.</p>	CEO options are negatively associated with bond spreads.
CEO compensation	Kabir et al. (2013)	To analyze CEO pay data from the UK	<p>Market: Financial Times Stock Exchange.</p> <p>Samples: 150 firm-year observations from 2003 to 2006.</p> <p>Method: Pooled OLS regressions.</p> <p>Dependent variable: Cost of debt: bond yield spread.</p>	CEO debt-like compensation (benefit pensions) and bonus reduce borrowing costs, but higher levels of options and restricted stock grants lead to a higher cost of debt.

Table 2.3 Summary of Studies on Compensation and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO compensation	Bizjak et al. (2019)	To examine the effect of CEO compensation, performance-contingent equity awards, on the agency conflict between stockholders and debtholders.	Market: The United States Samples: 2,024 firms between 1998 and 2015. Method: Pooled OLS regressions. Dependent variable: Cost of debt: loan spreads.	Grant performance-contingent equity awards with accounting based vesting conditions to their CEOs have lower cost of debt
CEO compensation	Chun (2018)	To examine CEO compensation and its effect on the implied cost of equity capital (ICOE).	Market: Korean stock market. Samples: 491 annual firm-year observations from 2013 to 2015. Method: Pooled OLS regressions Dependent variable: Implied cost of equity capital (ICOE) from the RIVC, OJ, and PEG models.	A higher CEO pay disparity increases the ICOE
CEO compensation	Chen et al. (2013)	To investigate the association between CEO compensation and the cost of equity capital	Market: The United States. Samples: 2,187 firms over 44 industries in United States from 1993 to 2007. Method: Pooled OLS regressions. Dependent variable: Implied cost of equity minus the risk-free rate.	CEO compensation was positively associated with the implied cost of equity.

2.3.4 Shareholder Structure and Cost of Capital

2.3.4.1 Directors' Ownership

Prior studies generally suggested that directors with high corporate interests are associated with high corporate governance (Jensen & Meckling, 1976; Patton & Baker, 1987). Besides motivating the board to improve supervision, shares held by the directors lead them to have risk averse behavior. In other words, shares held by the directors incentivize the board to closely supervise executives and reduce firm risk, which also benefit the debtholder. Ashbaugh-Skaife et al. (2006) analyzed the effect of shareholding percentage owned by directors on firm credit ratings, and found a positive correlation since the board would be motivated to oversee management, which could reduce the risk as well as the cost of capital. In addition, Ertugrul and Hegde (2008) found that equity-based compensation increased outside directors' audit incentives, and had a negative correlation with bond yield spreads.

According to the study of AlHares (2020), who examined the impact of corporate governance mechanisms on the cost of capital in Organisation for Economic Co-operation and Development (OECD) countries between 2010 and 2017 found that director ownership were negatively related to the cost of capital. Similarly, Usman et al. (2019), who studied firms in the Shanghai and Shenzhen stock exchanges during 2009-2015, found that board's share of ownership was negatively related to cost of debt. This is consistent with Lorca et al. (2011a), who Spanish listed companies during the period 2004-2007. They found that director ownership appeared to influence in the risk assessment of debtholders since of their ability to reduce agency cost and information asymmetry.

2.3.4.2 CEO Ownership

Theoretical studies have been conducted to show that the shareholder structure in the form of managerial ownership is in accordance with alignment theory since it can reduce cost of capital as suggested by the results of Huang et al. (2009)'s study on the U.S. firms listed on the S&P 500 during 1989-1992. According to alignment theory, the management only manage the firm by prioritizing the long-term benefits of the firm. Thus, high quality of corporate governance can be found. In other words, if the percentage of managerial ownership increases, the perceived risk and level of information

asymmetry of a firm tend to decrease (Pham, Suchard, & Zein, 2012) As a result, the information becomes more reliable to investors while the risk is also low (Babadi & Banisaleh, 2017). This leads investors to demand lower rates of return on capital provided.

Interestingly, the relation between managerial ownership and the cost of capital is based on entrenchment effect. In other words, the management has an incentive to expropriate the interests of minority shareholders for their personal interests. In the view of investors, management entrenchment causes additional agency risks and higher monitoring costs. This is supported by Collins and Huang (2011), who studied the U.S. companies listed on S&P 500 during 1989 – 2002. They revealed that managerial ownership was positively related to costs of equity capital. In contrast, Lugo (2019) found the relationship between insider ownership and the firm's cost of borrowing in the form of inverse U-shaped. This means when inside ownership is low, positive relationship will be found. However, the relationship will be negative at certain point.

Furthermore, Khlif, Samaha, and Azzam (2015) found no relationship between managerial ownership and cost of equity capital in firms listed on the Egyptian market from 2006 to 2009. Even though the policy on information disclosure is applied to reduce information asymmetry, managerial ownership was found to be the moderating effect on the negative relationship between level of voluntary disclosure and cost of equity capital.

2.3.4.3 Family Ownership

Most of the research results are based on the alignment effect concept. This concept suggests that if the management have more shares, the interests of controlling shareholders and non-controlling shareholders will be more consistent, which gives the executives incentives to add value to the company by reducing risks in order to decrease cost of capital. Byun, Choi, Hwang, and Kim (2013) found that family firms in South Korea during 2001–2007 were business groups that diversify risks while building mutual trust among affiliates. Tran (2014) also found that family firms in Germany during 2006-2008 had lower cost of equity capital due to less systematic risk, and another method to reduce cost of debt is to take care of stakeholders equally. This is in line with Ma, Ma, and Tian (2017), who studied 705 Chinese firms during 2004-2010 to examine the impact

of corporate opacity on the relationship between family control and firms' cost of debt. They found that family control was associated with a lower cost of debt on average. In addition, Ramírez and Romero (2017) found the impact that family businesses had on the minimum rate of return required by owner–investors. In other words, family businesses always had a negative and significant impact on cost of equity. Moreover, an inverse relationship between concentrated ownership and cost of capital was found by Anwar et al. (2019), who tested the effect of governance on firms' cost of equity capital in Asian countries over the period of 2006-2015, and Anwar (2020), who determined connection of governance mechanisms with cost of capital for companies in agriculture sector in 20 Asian countries from 2009 to 2018.

However, the results of certain studies are in line with entrenchment effects. For example, Lin et al. (2011), who studied firms in 22 countries from 1996 to 2008, found that moral hazard activities arising from high control rate of family ownership led to monitoring costs and credit risk of the bank. As a result, the cost of bank debt increased. This is in line with Hashim and Amrah (2016), who studied firms in the Sultanate of Oman during 2004-2011. They found that family ownership positively correlated with cost of debt. Their result is supported by AlHares (2020), who examined the impact of corporate governance mechanisms on the cost of capital in Organisation for Economic Co-operation and Development (OECD) countries between 2010 and 2017, and found a positive correlation between block ownership and the cost of capital. Furthermore, Solikhah and Jariyah (2020) studied firms in Indonesia during 2011-2015, and found that block ownership positively affected the cost of equity.

East Asian economies are considered emerging economies, and numerous firms are owned and controlled by single large shareholders in the forms of pyramid ownership structure (Wei & Zhang, 2008), and ownership concentration. Family ownership is commonly found in firms in Thailand (Wiwattanakantang, 2001). The objective is to keep the cost of capital of the company low in order to create maximum wealth for both executives and shareholders. According to the results of prior studies shown in Table 2.4, family ownership, director ownership, and CEO ownership lead to the reduction of cost of capital. Thus, the hypothesis is that shareholder structure has a negatively direct effect on cost of capital.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	Byun et al. (2013)	To examine the relation between business group affiliation and the cost of debt capital.	Market: Korean Stock Exchange Samples: 174 listed firms from 2001 to 2007. Method: Regression analysis. Dependent variables: Cost of deb: credit spreads.	Firms affiliated with major Korean business groups enjoy a substantially lower cost of public debt than independent firms.
Family ownership, and CEO ownership	Tran (2014)	To investigate whether corporate governance affects the cost of debt and equity capital of German exchange-listed companies.	Market: Frankfurt Stock Exchange Sample: 426 firm-year observations in 2006-2008. Method: Regression analysis. Dependent variables: - Implied cost of equity capital based on the modified price-earnings growth (PEG) ratio model by Easton (2004). - Realised cost of debt, Total interest expense to average total liabilities.	Block ownership, or family firms, is negatively related to firms' cost of equity when the blockholders are managers or founding-family members.
Family ownership	Ma et al. (2017)	To examine the impact of corporate opacity on the relationship between family control and firms' cost of debt.	Market: Shanghai Stock Exchange Samples: 705 firms and 3,320 firm-year observations during 2004–2010. Method: Regression analysis. Dependent variables: Cost of debt: credit spreads.	Family control is associated with a lower cost of debt on average.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	Rami´rez and Romero (2017)	To analyze the impact that family businesses have on the minimum rate of return.	Market: Madrid Stock Exchange Sample: 1,341 owner–investors in 2002-2013. Method: hierarchical regression analysis. Dependent variables: Minimum rate of return required by owner–investors (k_e) of each privately held business.	Family businesses always have a negative and significant impact on k_e .
Family ownership	Anwar (2020)	To determine the connection of governance mechanisms with cost of capital based on agency and stewardship theories.	Market: 20 Asian countries. Samples: 363 agricultural firms from 2009-2018. Method: Panel data regression. Dependent variable: Cost of capital: WACC.	Concentrated ownership (Family firms) had a significant negative effect on cost of capital (WACC).
Family ownership	Anwar et al. (2019)	To investigate whether governance affects firms' cost of equity capital in Asian countries.	Market: 24 Asian countries. Samples: 363 non-financial multinational firms from 2006 to 2015. Method: Panel data regression. Dependent variable: Cost of equity: CAPM, implied cost of equity: Model of Ohlson and Juettner-Nauroth (2005).	Ownership concentration had a significant negative effect on Cost of equity (CAPM).

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	C. Lin et al. (2011)	To examine the relation between the control-ownership wedge of a firm's largest shareholder and the firm's cost of bank debt.	<p>Market: 9 East Asian economies and 13 Western European countries</p> <p>Samples: 22 countries from 1996 to 2008.</p> <p>Method: multivariate ordinary least squares (OLS) regressions.</p> <p>Dependent variable: Cost of deb: Loan spreads.</p>	Cost of debt financing is significantly higher in family firms with a wider divergence between the largest ultimate owner's control rights and cash-flow right.
Family ownership	Hashim and Amrah (2016)	To determine whether there is any difference in the association among the corporate governance mechanisms and the cost of debt between the family and non-family-owned companies.	<p>Market: the Muscat Securities Market, the Sultanate of Oman.</p> <p>Sample: 68 listed companies (476 firm-year observations) from 2005 to 2011.</p> <p>Method: Regression analysis</p> <p>Dependent variables: Cost of debt: Interest expense/average of total short-term and long-term debt.</p>	Family firms had a positive effect on cost of debt.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Family ownership, and director ownership	AlHares (2020)	To investigate the impact of corporate governance mechanisms on the cost of capital in Organisation for Economic Co-operation and Development (OECD) countries.	<p>Market: The list of World’s Biggest Public Companies published by Forbes Global 2000 Leading Companies.</p> <p>Samples: 240 companies (1,920 company year observations) from 2010 to 2017.</p> <p>Method: multivariate ordinary least squares (OLS) regressions.</p> <p>Dependent variable: Cost of capital: the PE ratio and Ohlson and Juettner-Nauroth (2005) model.</p>	Director ownership was negatively related to the cost of capital. The study also reports a positive correlation between block ownership (family firms) and the cost of capital.
Family ownership	Solikhah and Jariyah (2020)	To investigate the effect of block ownership, board of director diversification, duality of the board of directors, independent level of board of commissionaire, audit committee effectiveness, and accounting conservatism on the cost of equity.	<p>Market: Indonesia Stock Exchange.</p> <p>Samples: 121 manufacturing companies listed from 2011 to 2015.</p> <p>Method: multivariate ordinary least squares (OLS) regressions.</p> <p>Dependent variable: Cost of equity: expected rate of return by stockholders against their ownership in the company.</p>	Block ownership positively affected the cost of equity.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Director ownership	Ashbaugh-Skaife et al. (2006)	To investigate whether firms with strong governance benefit from higher credit ratings than firms with weaker governance.	Market: the New York Stock Exchange, NASDAQ, and the American Stock Exchange. Samples: 22,000 individual directors and committee structures of firms in 2002 fiscal year. Method: Logistic regression Dependent variable: Long-term issuer credit ratings.	Firm credit ratings were positively related to board stock ownership and board expertise.
Director ownership	Ertugrul and Hegde (2008)	To examine how stock and stock option compensation for outside directors affect corporate bond yields in the secondary market.	Market: Mergent Bond Record Samples: 393 firms (870 firm-year observations) from 2000 to 2002. Method: Multivariate regressions. Dependent variable: Cost of debt: Yield spread.	Ratio of outside directors' stock had a negative relationship with firms' cost of debt.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Director ownership	AlHares (2020)	To investigate the impact of corporate governance mechanisms on the cost of capital in Organisation for Economic Co-operation and Development (OECD) countries	<p>Market: Australia, New Zealand, Canada, Ireland, the UK and the USA.</p> <p>Samples: 1,920 company year observations from 2010 to 2017.</p> <p>Method: Multivariate regressions.</p> <p>Dependent variable: Cost of capital: The modified price-earning growth model and the modified economy-wide growth model.</p>	Director ownership was negatively related to the cost of capital.
Director ownership	Usman et al. (2019)	To investigate whether gender diversity in the boardroom matters to lenders.	<p>Market: The Shanghai and Shenzhen stock exchanges.</p> <p>Samples: 5,806 firm-year observations from 2009 to 2015 of all A-share listed companies.</p> <p>Method: Ordinary least squares regression and firm fixed effect regression.</p> <p>Dependent variable: Cost of debt: finance cost divided by the sum of short-term and long-term debt.</p>	Director ownership was negatively related to cost of debt.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

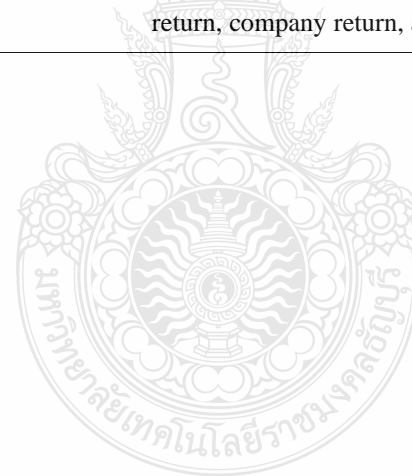
Independent Variable	Authors	Purpose	Methods	Results
Director ownership	Lorca et al. (2011a)	To investigate the effect of different attributes of board of directors on the cost of borrowing.	<p>Market: Spanish Stock Exchange.</p> <p>Sample: 151 Spanish listed companies from 2004 to 2007.</p> <p>Method: 2SLS regression.</p> <p>Dependent variables: Cost of debt: interest expense for the year divided by the interest-bearing debt.</p>	Director ownership influenced the risk assessment of debtholders since their ability reduced agency cost and information asymmetry.
CEO ownership	Huang et al. (2009)	To investigate whether managerial ownership affects the association between shareholder rights and the cost of equity capital.	<p>Market: Nasdaq stock exchange</p> <p>Sample: The S&P 500 and annual lists of the largest corporations by Fortune, Forbes and Business Week from 1989 to 1992 (8,281 firm-year observations).</p> <p>Method: Multivariate ordinary least squares (OLS) regressions.</p> <p>Dependent variables: Cost of equity capital as estimated by the OJ mode.</p>	Managerial ownership aligns managers' interests with those of shareholders, leading to a lesser degree of agency problems and lower cost of equity capital.
CEO ownership	Pham, Suchard, et al. (2012)	To analyze the role that the variation in firm-level corporate governance mechanisms affects a firm's cost of capital.	<p>Market: Australian Stock Exchange</p> <p>Samples: 150 companies (861 firm-year observations) from 1994 to 2003.</p> <p>Method: Fixed-effects panel regression.</p> <p>Dependent variable: Cost of capital: WACC.</p>	Greater insider ownership (CEO) reduced the perceived risk of a firm, thereby leading investors to demand lower rates of return on capital provided.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO ownership	Babadi and Banisaleh (2017)	To investigate the relationship between ownership structure and equity costs.	Market: Tehran Stock Exchange. Samples: 105 companies from 2010 to 2014. Method: Multivariate regression. Dependent variable: Cost of equity rate: Gordon Growth Model (swath, 2002).	A negative and significant relationship between managerial ownership and equity cost was found.
CEO ownership	Collins and Huang (2011)	To investigate the effect of management entrenchment on the cost of equity capital.	Market: S&P 500 as well as firms listed in Fortune. Samples: Large U.S. companies from the S&P 500 from 1989 to 2002. Method: Multivariate regression. Dependent variable: cost of equity capital: OJ Model (Ohlson & Juettner-Nauroth, 2005).	An increase or decrease in management entrenchment (CEO ownership) was associated with an increase or decrease in costs of equity capital.
CEO ownership	Lugo (2019)	To demonstrate how two contrasting forces result in an inverse U-shaped relationship between insider ownership and the firm's cost of borrowing.	Market: The SDC Dealscan database and the Worldscope Samples: 67,526 firms, corresponding to 979,746 yearly observations from 1995 to 2009. Method: Piecewise and OLS regression. Dependent variable: Cost of debt: credit spreads.	When the level of inside ownership is low, the relationship between insider ownership and the firm's cost of borrowing is positive. However, the relationship becomes negative at a certain level.

Table 2.4 Summary of Studies on Shareholder Structure and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO ownership	Khelif et al. (2015)	To examine the effect of voluntary disclosure, ownership structure, and timely disclosure on cost of equity capital in the Egyptian capital market.	Market: The Cairo and Alexandria Stock Exchanges Samples: 67,526 firms, 292 firm-year observations from 2006 to 2009. Method: Multivariate regression. Dependent variable: Cost of equity: market return, company return, and risk-free rate.	A significant relationship between managerial ownership and cost of equity capital was not found.



2.3.5 Audit committee and Cost of Capital

2.3.5.1 Audit committee size

Audit Committee plays an important role since they are responsible for defining and monitoring accounting processes in order to provide reliable information to the company's stakeholders (Beasley, 1996; Pincus, Rusbarsky, & Wong, 1989). The audit committee should have a composition of three to five members (Buchalter & Yokomoto, 2003; PWC, 2003). Large audit committee tend to be more effective (Kalbers & Fogarty, 1993; Klein, 2000). Pincus et al. (1989) suggested that the audit committee was an expensive mechanism which is the agency cost that firms have to bear. Therefore, firms with a large audit committee are willing to devote resources to overseeing the financial accounting process. In contrast, firms with a small size of audit committees have less time to oversee the audits and the management, and attend meetings with other parties in the firm. Sadatmand and Alavi (2019) examined the relation between some characteristics of the audit committees and the cost of equity capital in Iran during 2012 to 2017. The results showed that there was a significant negative relation between the audit committee size and the cost of equity capital. This is in line with Wahyuni (2019), who studied 61 companies in manufacturing sector from 2016 to 2017 in Indonesia. In addition, Anderson, Mansi, and Reeb (2004), who studied firms listed on S&P 500 from 1993 to 1998, found that audit committees are associated with a significantly lower cost of debt. However, Khemakhem and Naciri (2015) revealed that the size of the audit committee are positively related to the cost of equity capital of the 300 firms listed on TSX-S&P from 2004 to 2006.

2.3.5.2 Audit Committee Financial Expertise

Board expertise in accounting is another factor that can lower cost of capital of the firm since business decisions require an understanding of accounting and financial information. Sharma et al. 2020, who observed 124,865 audit committee directors on the Institutional Shareholder Services (ISS) database from 2004 to 2015, found that the relationship between audit committee with financial expertise and the cost of equity was negative and significant. This is similar to the study of Limpabandh and Issarawornrawanich (2016), who revealed that audit committee with financial expertise in Thai firms had low cost of debt since audit committee with financial expertise are able

to monitor and review the operational and financial reporting of the firm more effectively. As a result, lenders and investors trust the quality of financial information. Similarly, Bravo et al. (2018), who studied listed firms on Standard and Poor's 500 in 2009, found that the board members with financial expertise could reduce the cost of capital due to the disclosure of information on risks. Moreover, Hashim and Amrah (2016) used audit committee with financial expertise to measure the effectiveness of audit committee in firms in the Sultanate of Oman from 2004 to 2011. They found that the effectiveness of audit committee had a negative significant effect on the cost of debt. In contrast, Sadatmand and Alavi (2019) found no significant relation between the financial expertise of the audit committee members and the cost of equity capital in Iran in 2012 to 2017.

From literature review as shown in Table 2.5, several studies found that audit committee size and audit committee with financial expertise lead to cost of capital. Thus, the hypothesis is that audit committee have a negative direct effect on cost of capital.



Table 2.5 Summary of Studies on Audit Committee and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Audit committee size, and audit committee financial expertise	Sadatmand and Alavi (2019)	To investigate the relationship between some characteristics of the audit committees and the cost of equity capital.	Market: Tehran Stock Exchange Samples: 97 firms during from 2012 to 2017. Method: Regression analysis Dependent variable: Cost of equity capital.	A significant negative relation between the audit committee size and the cost of equity capital, but no relation between the financial expertise of the audit committee and the cost of equity was found.
Audit committee size	Wahyuni (2019)	To find out how much influence good corporate governance of the cost of debt has.	Market: Indonesia Stock Exchange. Samples: 61 firms (122 firm-year observations) in 2016-2017. Method: Regression analysis. Dependent variable: Cost of debt: Interest expense divided by the interest-bearing debt.	The number of audit committee had a negative significant effect on the cost of debt.
Audit committee size	Anderson et al. (2004)	To examine the relation between board structure and the cost of debt financing.	Market: New York Stock Exchange Samples: 252 firms (1,052 firm-year observations) from 1993 to 1998 of S&P 500. Method: Regression analysis. Dependent variable: Cost of debt financing: weighted average debt yield to maturity in excess of the duration equivalent Treasury yield.	Audit committees were associated with a significantly lower cost of debt financing.

Table 2.5 Summary of Studies on Audit Committee and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Audit committee size	Khemakhem and Naciri (2015)	To examine the association between board, audit committee characteristics and cost of equity capital.	Market: U.S. and Canadian markets. Samples: 139 firm-years observation from S&P / TSX300 Toronto index in 2004, 2005 and 2006. Method: Ordinary least squares regression. Dependent variable: Cost of equity capital is determined by (Ohlson & Juettner-Nauroth, 2005).	The size of the audit committee was positively related to the cost of equity capital.
Audit committee financial expertise	Sharma et al. (2020)	To examine the association between cost of equity and audit committee directors' simultaneous service on multiple directorships of audit committee.	Market: Institutional Shareholder Services. Samples: 124,865 audit committee director observations from 2004 to 2015. Method: Ordinary least squares regression Dependent variable: ex ante cost of equity capital: Gode and Mohanram (2003), Easton (2004) and Claus and Thomas (2001)	The relationship between audit committee with financial expertise and the cost of equity was negative and significant.
Audit committee financial expertise	Limpabandh and Issarawornrawanich (2016)	To examine the association between corporate governance mechanisms related to board of directors' characteristics.	Market: Stock exchange of Thailand. Samples: 484 listed firms from 2010 to 2011. Method: Regression analysis. Dependent variables: Cost of debt: The interest expense for the year divided by average interest-bearing debt.	Cost of debts had a negative relationship with audit committee accountancy and financial expertise.

Table 2.5 Summary of Studies on Audit Committee and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Audit committee financial expertise	Bravo et al. (2018)	To analyze whether the theoretical relationship between the board composition and the cost of capital is mediated by risk disclosure practices.	<p>Market: Standard and Poor's 500.</p> <p>Samples: All the companies belonging to manufacturing industry listed on Standard and Poor's 500 in 2009.</p> <p>Method: Regression analysis.</p> <p>Mediated variables: Risk disclosure</p> <p>Dependent variables: Cost of capital (Easton, 2004).</p>	Audit committee had a negative effect on cost of capital.
Audit committee financial expertise	Hashim and Amrah (2016)	To determine whether there is any difference in the association among the corporate governance mechanisms and the cost of debt between the family and non-family-owned companies.	<p>Market: the Muscat Securities Market, the Sultanate of Oman.</p> <p>Sample: 68 listed companies (476 firm-year observations) in 2005-2011.</p> <p>Method: Regression analysis.</p> <p>Dependent variables: Cost of debt: interest expense/average of total short-term and long-term debt.</p>	Audit committee effectiveness has a negative significant effect on the cost of debt.

2.3.6 Control Variables and Cost of Capital

2.3.6.1 Leverage Ratio (LEV)

The relationship between leverage and cost of capital was introduced by Modigliani and Miller (1963), who believed that high leverage can increase the firm value due to tax benefit. Ward (1999) found that the more debt, the greater the tax shield, which reduces cost of capital. In other words, the effect of high financial leverage is offset perfectly by the lower cost of own capital: EVA leverage (JH de Wet & Hall, 2004) according to trade-off theory, which allows firms to determine proper capital structures to maximize value for the shareholders. However, the trade-off theory only confirms that firms cannot always take benefits of leverage.

Acedo-Ramírez, Ayala-Calvo, and Rodríguez-Osés (2013) found that firms with a large number of non-debt tax shield, such as depreciation and amortization expense have low debt financing. The pecking order theory has become a strong rival in explaining capital structures (JHvH de Wet, 2006). Small firms with high level of information asymmetry tends to be in accordance with pecking order theory rather than trade-off theory. The debt-to-asset ratio of the firm is determined based on the hierarchical financing effect. Leverage is considered the first and most secure source of external funding, resulting in a higher debt-to-asset ratio. Most of the research found that the level of debt is related in contrast to the cost of capital (Das & Pattanayak, 2019; Kangarlouei, Abbaszadeh, & Motavassel, 2012; Lampe & Hofmann, 2014; Vo & Ellis, 2017). Moreover, Muradoglu and Sivaprasud (2012) stated that although debt financing reduces the return of investors. This means the cost of equity capital of the firm will be lower, and additional loan leads to management auditing which can reduce agency cost (Anderson, Mansi, & Reeb, 2003).

However, leverage capital structure is not always correlated with interest rates. Corporate leverage is sometimes positively correlated with credit rationing (Severin, 2010). In certain cases, leveraged capital structure increases the cost of capital. Collins and Huang (2011) found that U.S. firms listed on the S&P 500 from 1989 to 2002 had higher costs of equity capital when debt financing rate was high. Anderson, Mansi, and Reeb (2004) and Chen (2012) also found that the cost of debt of firms of S&P firms was higher when debt financing rate was high.

2.3.6.2 Total Asset (TAS)

The results of the study on controlling owners' type affects cost of equity capital and real earnings management in Indonesia from 2011 to 2013 conducted by Surifah, Rofiqoh, and Krismiaji (2019) revealed that firm size was positively associated with the cost of equity capital. This result is consistent with prior literature which posits a higher level of agency conflicts in larger firms (Berger & Ofek, 1995; Demsetz & Lehn, 1985; Tran, 2014). This is in line with Yeh, Lin, Wang, and Wu (2020), who examined whether CSR affects the cost of equity and debt capital of the firms in China from 2008 to 2011. They found that firm size had a positively significant effect on the cost of debt. However, Usman et al. (2019) tested the relationship between gender diversity in the boardroom and cost of debt in Shanghai and Shenzhen stock exchanges from 2009 to 2015, and found that the coefficients of firm had a negative effect on cost of debt, which is in line with Ghouma et al. (2018), who studied the effect of corporate governance on bond spreads in Canadian companies from 1986 to 2014.



Table 2.6 Summary of Studies on Control Variables and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio, and firm size.	Anderson et al. (2004)	To examine the relationship between board structure and cost of debt.	<p>Market: S&P 500.</p> <p>Samples: 1052 firm-year observations on 252 firms from 1993 to 1998.</p> <p>Method: Regression analysis.</p> <p>Independent Variable:</p> <ul style="list-style-type: none"> - Board independence - board size <p>Dependent variables: Cost of debt financing: weighted average debt yield to maturity in excess of the duration equivalent Treasury yield.</p> <p>Control Variables:</p> <ul style="list-style-type: none"> - Leverage - Firm size 	Leverage ratio positively influence the cost of debt, but firm size negatively influenced the cost of debt.
Leverage ratio	Collins and Huang (2011)	To investigate the effect of management entrenchment on the cost of equity capital.	<p>Market: S&P 500.</p> <p>Samples: 500 firms from 1989 to 2002.</p> <p>Method: Regression analysis.</p> <p>Independent Variable:</p> <ul style="list-style-type: none"> - An entrenchment score: change in governance score. <p>Dependent variables: Cost of capital: Ohlson and Juettner-Nauroth (2005) method.</p> <p>Control Variables: Leverage.</p>	Leverage ratio positively influenced the cost of equity capital.

Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio	Chen (2012)	To examine the effect of classified boards on the cost of debt (bond spreads).	<p>Market: S&P</p> <p>Samples: 1,500 firms with public senior unsecured bonds from 2002 to 2007.</p> <p>Method: pooled OLS regressions.</p> <p>Independent Variable:</p> <ul style="list-style-type: none"> - Classified board structure - G-index: managerial <p>Dependent variables: Cost of debt</p> <p>Control Variables: Leverage</p>	Leverage ratio positively influenced the cost of debt.



Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio	Kangarlouei et al. (2012)	To investigate the differences between ownership structure and cost of capital in capitalized and leveraged firms of Tehran Stock Exchange (TSE).	<p>Market: TSE</p> <p>Samples: 81 listed companies in the TSE from 2003 to 2009.</p> <p>Method: Multivariate Analysis of Variance.</p> <p>Independent Variables:</p> <ul style="list-style-type: none"> - Governmental ownership - Institutional ownership - Individual ownership - Private ownership. - Debt ratio is used as a measure to classify firms into capitalized (actual debt lower ratio from mean) and leveraged firms (actual debt higher rate of mean) <p>Dependent variables: Cost of debt and Cost of equity</p>	<ul style="list-style-type: none"> - Governmental and Institutional ownership increased average cost of capital in leveraged firms more than capitalized firms. - Private individual ownership results in reduction of average cost of capital in leveraged firms more than one. - Concentration of ownership reduces of cost of capital in capitalized companies more than one. - Diffused ownership increases average cost of capital in capitalized companies than one.

Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Debt to equity ratio	Lampe and Hofmann (2014)	To analyze the influence of company, industry and market-related variables on the cost of capital of logistics service providers.	<p>Market: 70 countries all over the world</p> <p>Samples: 702 logistics service providers from 2006 to 2010.</p> <p>Method: Regression analysis.</p> <p>Independent Variable:</p> <ul style="list-style-type: none"> - Microeconomic variables: asset intensity, asset turnover, capital structure: debt to equity ratio and equity ratio, current ratio, cash flow/sales, ROE, ROA, and net profit margin. - Macroeconomic variables: labor force (total), gross capital formation, GNI, GDP, CO₂ emissions, employment to population ratio, adjusted net national income, money supply, market capitalization and mean oil price <p>Dependent variables: WACC.</p>	- Debt to equity ratio negatively influenced the cost of capital of logistics service providers, but equity ratio positively influenced the cost of capital of logistics service providers.

Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

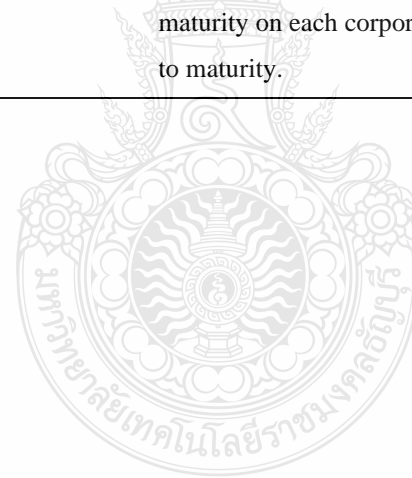
Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio	Vo and Ellis (2017)	To investigate the relationship between capital structure and shareholder value in Vietnam.	<p>Market: The Ho Chi Minh City stock exchange.</p> <p>Samples: 1,214 firm-year observations, which are listed firms from 2007 to 2013.</p> <p>Method: pooled OLS regressions</p> <p>Independent Variable:</p> <ul style="list-style-type: none"> - Leverage: the ratio of total liabilities to total assets at year-end. <p>Dependent variables:</p> <ul style="list-style-type: none"> - Firm value measured by the cumulative abnormal return of stock. 	A negative relation between financial leverage and shareholder value was found.
Leverage ratio	Das and Pattanayak (2019)	To analyze the impact of a comprehensive corporate governance index in light of the recently introduced Companies Act, 2013 on the cost of equity of a firm.	<p>Market: Indian financial market.</p> <p>Samples: 5,104 firm-year observations.</p> <p>Method: Regression analysis.</p> <p>Independent Variable: Corporate governance.</p> <p>Dependent variables: Cost of equity capital.</p> <p>Control variables: Leverage, and firm size.</p>	<ul style="list-style-type: none"> - The relationship between leverage and cost of equity capital was negative. - The relationship between firm size and cost of equity capital was positive.

Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Total Asset	Surifah et al. (2019)	To examine whether controlling owners affects cost of equity capital.	Market: The Indonesian Stock Exchange Samples: 132 publicly listed companies (396 firm-years) from 2011 to 2013. Method: Regression analysis Dependent variables: Cost of equity capital Ohlson and Juettner-Nauroth (2005) Model.	Firm size positively influenced the cost of equity capital.
Total asset, ROA, and market to book ratio	Yeh et al. (2020)	To examine whether CSR affects a firm's cost of equity and debt capital in China.	Market: China Samples: 662 Chinese firms from 2008 to 2011. Method: Regression analysis. Dependent variables: - Cost of equity capital: CAPM, - Cost of debt: Ratio of interest expenses divided by the average interest-bearing debt outstanding during year.	Firm size and ROA positively influenced the cost of debt. Market to book ratio had a positively significant effect on the cost of debt, but a negatively significant effect on the cost of equity.
Total asset	Usman et al. (2019)	To investigate the question concerning whether gender diversity in the board matters to lenders.	Market: The Shanghai and Shenzhen stock exchanges. Samples: 5,806 firm-year observations from 2009 to 2015 of all A-share listed companies. Method: Ordinary least squares regression and firm fixed effect regression. Dependent variable: Cost of debt: finance cost divided by the sum of short-term and long-term debt.	Firm size negatively related to cost of debt.

Table 2.6 Summary of Studies on Control Variables and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Total asset	Ghouma et al. (2018)	To explore the impact of the Globe and Mail corporate governance index on bond spreads in a sample of Canadian listed companies.	<p>Market: Toronto Stock Exchange</p> <p>Samples: 169 firms making 1,632 issuances from 1986 to 2014.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variable: Cost of debt, Spread: the difference between the yield to maturity on each corporate bond minus the yield to maturity.</p>	Firm size was negatively related to cost of debt.



2.3.7 Board Structure and Accounting Conservatism

Ahmed & Duellman (2007) found that accounting conservatism helps the Board of Directors to reduce the deadweight loss caused by agency problems. According to the literature review, the following firm characteristics affect accounting conservatism.

2.3.7.1 Board Size

Several studies have shown that a large board size benefits the firm due to the knowledge and experience of the board members. A large board size can also provide network for firms. The study of Boonlert-U-Thai and Phakdee (2018) on Thai firm from 2014 to 2016 found that board size enhances accounting conservatism, reduce earnings management, and increase corporate performance (Daghsni et al., 2016; Haniffa & Hudaib, 2006; Xie, Davidson, & DaDalt, 2003). The results of Sultana (2015)'s study on Australian firms from 2004 to 2012 revealed that board size positively associated with accounting conservatism. Firms devote their resources to the large board and audit committee to increase their knowledge base in order to provide better monitoring and control financial statements (Ahmed & Duellman, 2007; Anderson et al., 2004).

However, some studies have indicated that the size of large companies negatively affects corporate governance and earnings quality (Ahmed, Hossain, & Adams, 2006) due to that difficulties occur while working in a large number of committees (Firth, Fung, & Rui, 2007) and leads to delay in making a management decision (Yermack, 1996). Thus, a smaller board size and smaller audit committee are more effective for monitoring (Hermalin & Weisbach, 2003; Jensen, 1993; Karamanou & Vafeas, 2005). This is supported by Boussaid et al. (2015); Nasr and Ntim (2018), who found that board size negatively affect accounting conservatism, increase earnings management (Kankanamage, 2016), and decrease audit efficiency (Jensen, 1993). In contrast, Yunos, Ahmad, and Sulaiman (2014), who conducted a study on list firms in Malaysia from 2001 to 2007, found no relationship between board size and accounting conservatism.

2.3.7.2 Board Independence

Independent directors play a key role in balancing power between the board and management (The Securities and Exchange Commission (SEC), 2017) since they encourage the firm to present accounting information with accounting conservatism.

This is confirmed by Suleiman. (2014), who conducted a research on listed firms in Nigeria from 2003 to 2010, Yunos et al. (2014), who conducted a research on listed firms in Malaysia from 2001 to 2007, Mohammed, Ahmed, and Ji (2017), who conducted a research on listed firms in Malaysia from 2004 to 2007, and Nasr and Ntim (2018), who conducted a research on listed firms in Egypt from 2011 to 2013. They found that board independence had a positive relationship with accounting conservatism. Thus, firms are able to recognize losses in a timely manner, or asymmetric timeliness (Ho, 2009) leading to firm performance and the quality financial reports (Yun Ren, 2014).

In contrast, Amran and Manaf (2014), who conducted a research on listed firms in Malaysia from 2000 to 2012 found that if the proportion of outside independent directors is high, it leads to less timely recognition of loss. In other words, even though the number of independent non-executive directors is high, the level of conservatism is low since they lack real independence, time, adequate information. However, Boussaid et al. (2015), who conducted a research on listed firms in France from 2009 to 2012 Sultana (2015), who conducted a research on listed firms in Australian from 2004 to 2012, found no relationship between board independence and accounting conservatism.

2.3.7.3 Non-Board Duality

According to agency theory, the chairman and the CEO should not be the same person since the board of directors is responsible for monitoring the management. Numerous studies were found that board duality is negatively associated with accounting conservatism (Boonlert-U-Thai & Kuntisook, 2009; Garcia Lara, Garcia Osma, & Penalva, 2007; Krishnan & Visvanathan, 2008; LaFond & Roychowdhury, 2008). This finding was also supported by Yunos and Ahmad (2014), and Salama and Putnam (2015).

In case the CEO is also the chairman, it may enhance accounting conservatism according to stewardship theory. Firm performance will also be improved since more financial statements are reported based on accounting conservatism (Nasr & Ntim, 2018). This is in line with Saeed (2020), who investigated the relationship between corporate governance and accounting conservatism in emerging markets of South Asia, and found that Bangladesh board duality has a positive association with accounting conservatism. Even though the results are consistent with those of Elshandidy and Hassanein (2014) and Chi et al. (2009), the causes are different due to the fact that board

governance is severely compromised when the current or former CEO of the company also serves as the chairperson of the board (Imhoff, 2003). Thus, the demand for accounting conservatism is high to make up the weakness in corporate governance.

Furthermore, Boonlert-U-Thai and Phakdee (2018), who studied Thai listed firms from 2014 to 2016, Boussaid et al. (2015), who studied French listed firms from 2009 to 2012, and Yunos et al. (2014), who studied listed firms in Malaysia from 2001 to 2007, found no relationship between non-board duality and accounting conservatism.

From literature review as shown in Table 2.7, several studies found that board size, board independence and non-board duality lead to an increase in accounting conservatism. Thus, the hypothesis is that board structure has a positive direct effect on accounting conservatism.

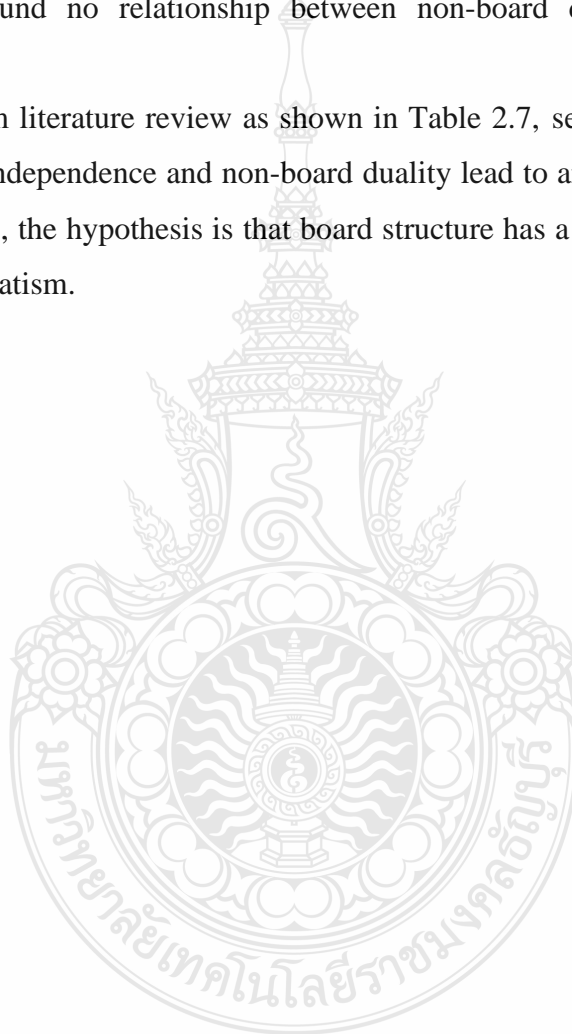


Table 2.7 Summary of Studies on Board Structure and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
Board size, board independence, and board duality	Boonlert-U-Thai and Phakdee (2018)	To investigate the association between board characteristics and accounting conservatism.	<p>Market: The stock exchange of Thailand.</p> <p>Samples: 1,049 Thai firm-year observations over the seven-year period of 2014-2016.</p> <p>Method: Regression analysis.</p> <p>Dependent variables: Accounting conservatism: - Model of Basu (1997) - Model of Ball and Shivakumar (2005)</p>	Board size had a positive effect on conservatism (Basu, 1997) although board independence and board duality did not influence conservatism.
Board size, and board independence	Sultana (2015)	To investigate the association between audit committee characteristics and accounting conservatism.	<p>Market: The Australian Securities Exchange.</p> <p>Samples: 7,668 publicly listed firm-year observations from 2004 to 2012.</p> <p>Method: Regression analysis</p> <p>Dependent variables: Accounting conservatism: - Model of Basu (1997) - Model of A. S. Ahmed and Duellman (2007)</p>	Board size had a positive effect on conservatism (Basu, 1997). Board independence did not influence conservatism.
Board size, board independence, and board duality	Boussaid et al. (2015)	To investigate the relationship between corporate board of directors and conditional accounting conservatism.	<p>Market: French</p> <p>Samples: SBF120 French firms from 2009 to 2012.</p> <p>Method: Pooled regression model.</p> <p>Dependent variables: Accounting conservatism: Model of Basu (1997).</p>	Board size had a negative effect on conservatism (Basu, 1997). Board independence and board duality did not influence conservatism.

Table 2.7 Summary of Studies on Board Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board size, board independence, and board duality.	Nasr and Ntim (2018)	To investigate the effect of corporate governance mechanisms on accounting conservatism in Egypt.	Market: Egypt Samples: 201 Egyptian observations from 2011 to 2015. Method: Multiple regression Dependent variables: Accounting conservatism: Model of Givoly and Hayn (2000b)	Board independence had a positive effect on conservatism, but board size had a negative effect on conservatism. Board duality did not influence conservatism.
Board size, board independence, and board duality	Yunos et al. (2014)	To study the impact of corporate governance on cost of equity in an emerging economy.	Market: Bursa Malaysia Samples: from 2001 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	Board independence had a positive effect on conservatism although board size and board duality did not influence conservatism.
Board size, board independence, and board duality	Suleiman. (2014)	To examine the effects of corporate governance mechanisms on accounting conservatism in Nigerian firms in food and beverages sector.	Market: Nigerian Stock Exchange Samples: from 2003 to 2010. Method: Regression analysis Dependent variables: Accounting conservatism (Givoly & Hayn, 2000b).	Board independence had a positive effect on conservatism although board size and board duality did not influence conservatism.

Table 2.7 Summary of Studies on Board Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board independence	Mohammed et al. (2017)	To investigate the relationship between accounting conservatism, corporate governance and political connection in listed firms in Malaysia.	Market: Malaysia Samples: 824 firm-year from 2004 to 2007. Method: ordinary least squares regression. Dependent variables: Accounting conservatism: Model of A. S. Ahmed and Duellman (2007).	Board independence had a positive effect on conservatism.
Board independence	Amran and Manaf (2014)	To investigate the association between the board independence, and accounting conservatism among Malaysian companies from 2000 to 2012.	Market: Malaysia Samples: 866 Malaysian companies from 2000 to 2012. Method: Ordinary least squares regression. Dependent variables: Accounting conservatism: Model of Basu (1997).	Board independence had a negative effect on conservatism.
Board duality	Salama and Putnam (2015)	To investigate the effect of accounting conservatism on the degree of financial leverage.	Market: United States Samples: 7,243 USA firm-year observations over the seven-year from 2000 to 2006. Method: Ordinary least squares regression. Dependent variables: Accounting conservatism: - Model of Basu (1997) - Model of Givoly and Hayn (2000a)	Board duality had a negative effect on conservatism (Basu, 1997).

Table 2.7 Summary of Studies on Board Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board size, board independence, board duality	Saeed (2020)	To investigate the relationship between corporate governance, and accounting conservatism.	<p>Market: Bangladesh</p> <p>Samples: 100 companies (700 firm-year observations) from 2009 to 2015.</p> <p>Method: Panel data regression.</p> <p>Dependent variables: Accounting conservatism:</p> <ul style="list-style-type: none"> - Model of Basu (1997) - Model of Beaver and Ryan (2000) - Model of Givoly and Hayn (2000a) - Model of Ball and Shivakumar (2005) 	Board duality had a positive effect on conservatism although board size and board independence did not influence conservatism.
Board size, board independence, board duality, and total asset	Elshandidy and Hassanein (2014)	To investigate the impact of International Financial Reporting Standards (IFRS) and/or board of directors' independence on accounting conservatism.	<p>Market: United Kindom</p> <p>Samples: the FTSE 100 index over 6 years, from 2002 to 2007.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variables: Accounting conservatism:</p> <ul style="list-style-type: none"> - Model of Givoly and Hayn (2000a) 	Board size, board independence, and board duality had a positive effect on conservatism although firm size had a negative effect on conservatism.
Board size, board duality	Chi et al. (2009)	To explore the relationship between accounting conservatism and corporate governance.	<p>Market: Taiwan Stock Exchange</p> <p>Samples: 4,181 firm-year observations from 1996 to 2004.</p> <p>Method: Ordinary least squares regression.</p> <p>Dependent variables: Accounting conservatism: C-Score developed by M. Khan and Watts (2007).</p>	Board duality had a positive effect on conservatism, but board size had a negative effect on conservatism.

2.3.8 Board Activity and Accounting Conservatism

According to Boussaid et al. (2015), greater board activities encourage more conservative reporting in financial statements. Prior studies found that board activities that influenced accounting conservatism are as follows:

2.3.8.1 Board Expertise

Firms with multiple directorships reflects the board's knowledge, competence, and various governance characteristics. It also shows the reputation of the directors if they get multiple board positions, which is a signal for an external auditor for high-level governance of the business. On the other hand, if multiple directorships may lead to inadequate time to manage each company (Baatwah, Salleh, & Stewart, 2019). Kutubi (2020)'s study on directors with multiple directorships on banks' financial reporting conservatism in South Asia found that at a low level of multiple directorships, banks follow conservatism in financial reporting (reputation effect), then at a high level of multiple directorships reporting conservatism declines (busyness effect). However, Al-Absy, Ismail, and Chandren (2019) tested the influence of family directors and governance mechanisms on aggressive or conservative earning management, and found that firms with multiple directorships have a positive correlation with conservative earnings management.

Yunos et al. (2014) studied 300 Malaysian listed firms from 2001 to 2007, and found that board expertise positively associated with accounting conservatism. Likewise, Yunos and Ahmad (2014) tested the influence of ownership concentration and governance attributes on conservatism in Malaysia by using board expertise as a component of governance. The result indicates that governance attributes led to more conservatism where the firms' governance led to faster recognition of bad news relative to good news into earnings. Similarly, the findings of Enache and Garcia-Meca (2019) after studying 66 US biotech firms publicly traded on the NYSE, AMEX and NASDAQ stock exchanges during 2005-2013 period confirm the positive role of support specialists on accounting conservatism. However, Salama and Putnam (2015) found that Board expertise in USA during 2000-2006 had a negative relationship with accounting conservatism since shared directors (interlocking directors) may transmit earnings management practices from one firm to another firm (Chiu, Teoh, & Tian, 2013).

However, according to Olyhoek (2017), who studied 1,648 U.S firms listed on the S&P 500 during 2009-2015, there was no relationship between the board expertise and the conservatism, which is similar to the findings of Chi et al. (2009), who found a limited influence of board expertise on conservatism in 4,181 Taiwanese firms–year observation during 1996-2004.

2.3.8.2 Board Meeting

The board of directors is responsible for monitoring the activities of the company through board meetings. This is expected to encourage companies to report quality earnings data (Cahyani & Khafid, 2020; Nariman & Ekadjaja, 2018). Firms with frequent meeting reduces earnings management (Kankanamage, 2016) and increases accounting conservatism according to the results of the study Sultana (2015), who found that the number of meetings of the board of directors was positively correlated with accounting conservatism. Boussaid et al. (2015) found that board meeting was positively associated with accounting conservatism in French firms during 2009-2012.

However, meeting frequency may not always be a mechanism for solving every issue occurring in a firm. The study of Chen, Li, and Shapiro (2011) revealed that board meeting could not reduce controlling-shareholder expropriation on corporate performance since most good governance practices could solve conflicts between shareholders and the management, but could not solve conflicts between controlling and minority shareholders. Furthermore, board of directors are dependent to controlling shareholders or board meeting which may be due to suspicious or illegal activities of management. (Chen, Firth, Gao, & Rui, 2006; Shen & Zhang, 2002), or earnings management (Cho & Rui, 2009; Ebrahim, 2007; Jackling & Johl, 2009) which does not affect accounting conservatism.

Salama and Putnam (2015) examined the impact of global diversification on the relationship between conservatism and financial leverage in USA during 2000-2006. Also, Boonlert-U-Thai and Phakdee (2018) concentrated on listed firms on the Stock Exchange of Thailand during 2014-2016, and found that board meeting was not significantly associated with accounting conservatism. In addition, board meetings may arise from unusual circumstances, such as financial distress or poor performance (Vafeas, 1999).

2.3.8.3 Board Attendance

Adams and Ferreira (2009), argued that board attendance reflects the board's diligence as it is the primary channel to access important information for administrative activities. If the board attends meetings regularly, it will be more beneficial to overseeing accounting and financial information. Therefore, previous studies have concluded that board attendance allows the board to spend more time discussing the financial reporting process. In addition, empirical evidences show that board attendance induce managers to produce more conservative accounting practices by presenting bad news in a more timely manner than good news. Accordingly, the result of Boussaid et al. (2015) showed that board attendance is positively associated with accounting conservatism. According to Saeed (2020), board activity which consists of board meeting and board attendance is positively correlated with domestic accounting conservatism in India and Pakistan, and will increase the firm value in the future. Similarly, Adams and Ferreira (2009) found that female directors enhances board attendance, and increases the sensitivity of CEO turnover to stock returns. This is consistent with the results of the study conducted by Chou et al. (2013), who found that the attendance of executive director can increase profits since board attendance is a component of good corporate governance. Furthermore, Shleifer and Vishny (1997) found that firms with good corporate governance may have lower required rate of return on equity, or cost of equity, since shareholders' costs of monitoring the managers and auditing the reported earnings are much lower.

According to Raithatha and Shaw (2019)'s study "Do family firms choose conservative accounting practices?" in India during 2005-2015, they measured accounting conservatism by utilizing 3 methods. The first method is applying earnings-stock return relationship introduced by Basu (1997), and developed to accrual-cash flow relationship by Ball and Shivakumar (2005). The second method suggested by Khan and Watts (2009) is to utilize firm size, market to book ratio, and leverage in the model. The third is unconditional conservatism, which is based on non-operating accruals developed by Givoly and Hayn (2000a). The results showed that board attendance was negatively related with accounting conservatism according to the model developed by Givoly and

Hayn (2000a). However, no relationship of accounting conservatism was found in other models.

From literature review as shown in Table 2.8, several studies found that board expertise, board Meeting and board attendance reduced accounting conservatism. Thus, the hypothesis is that board activity has a positive direct effect on accounting conservatism.



Table 2.8 Summary of Studies on Board activity and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Kutubi (2020)	To investigate the effect of directors with multiple directorships on banks' financial reporting conservatism in South Asia.	Market: Bangladesh, India, Pakistan, and Sri Lanka. Samples: 93 banks from 2009-2013 comprises 454 bank-year observations. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	The relationship between multiple directorships and accounting conservatism was an inverse 'U' shape. With a low level of multiple directorships, banks followed conservatism in financial reporting. Then, a high level of multiple directorships reporting conservatism declines.
Board expertise	Al-Absy et al. (2019)	To investigate whether the interaction terms of family directors and corporate governance mechanisms are significantly associated with aggressive or conservative earning management.	Market: Bursa Malaysia. Samples: 864 Malaysian firm-year observations from 2013 to 2015. Method: Regression analysis. Dependent variables: Discretionary Accruals (DA) and Abnormal Real Earnings Management (ABREM) (Roychowdhury's models)	Board expertise had a positive effect on conservative earnings management.
Board expertise	Yunos et al. (2014)	To investigate the association between the attributes of the board of directors and audit committee on accounting conservatism.	Market: Bursa Malaysia. Samples: 300 firms from 2001 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	Board expertise had a positive effect on conservatism.

Table 2.8 Summary of Studies on Board activity and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Yunos et al. (2014)	To investigate the effect of ownership concentration and firms' governance on accounting conservatism.	Market: Bursa Malaysia. Samples: 2021 firm-year observations from 2001 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	Board expertise had a positive effect on conservatism.
Board expertise	Enache and Garcia-Meca (2019)	Examine the relationship between accounting conservatism and board composition.	Market: NYSE, AMEX and NASDAQ stock exchanges Samples: 66 companies over nine years from 2005 to 2013. Method: Regression analysis Dependent variables: Accrual-based accounting conservatism (Givoly & Hayn, 2000b) and Basu (1997) model	Board expertise had a positive effect on conservatism.
Board expertise	Salama and Putnam (2015)	To investigate the effect of accounting conservatism on the degree of financial leverage.	Market: The United States Samples: 7,243 USA firm-year observations over the seven-year period of 2000-2006. Method: ordinary least squares regression Dependent variables: Conservatism: - Model of Basu (1997) - Model of Givoly and Hayn (2000a)	Board expertise had a negative effect on conservatism (Basu, 1997).

Table 2.8 Summary of Studies on Board activity and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board expertise	Chi et al. (2009)	To explore the relationship between accounting conservatism and corporate governance.	Market: Taiwan Stock Exchange. Samples: 4,181 firm-year observations from 1996 and 2004. Method: Ordinary least squares regression. Dependent variables: Accounting conservatism: C-Score developed by Khan and Watts (2007).	Board expertise did not influence conservatism.
- Board expertise - Audit committee size - Audit committee with financial expertise - Mark to book ratio - Firm size	Olyhoek (2017)	To investigate the relationship between conditional conservatism and audit committee effectiveness.	Market: The United States Samples: S&P 500 firms (1,648 firm-year observations) from 2009 to 2015. Method: Ordinary least squares regression. Dependent variables: Accounting conservatism: Model of Ahmed et al. (2002).	Audit committee with financial expertise had a positive effect, but Mark to book ratio had a negative effect on conservatism. But, board expertise, audit committee size and firm size did not influence conservatism.
Board meeting	Sultana (2015)	To investigate the association between audit committee characteristics and accounting conservatism.	Market: The Australian Securities Exchange. Samples: 7,668 publicly listed firm-year observations from 2004 to 2012. Method: Regression analysis. Dependent variables: Accounting conservatism: - Model of Basu (1997) - Model of Ahmed and Duellman (2007).	Board meeting had a positive effect on conservatism (Basu, 1997).

Table 2.8 Summary of Studies on Board activity and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Board meeting - Board attendance	Boussaid et al. (2015)	To investigate the relationship between corporate board of directors' attributes and conditional accounting conservatism.	Market: France Samples: firms listed on SBF120 from 2009 to 2012. Method: Pooled regression model. Dependent variables: Accounting conservatism: Model of Basu (1997).	Board meeting and board attendance had a positive effect on conservatism (Basu, 1997).
Board meeting	Boonlert-U-Thai and Phakdee (2018)	To investigate the association between board characteristics and accounting conservatism.	Market: The stock exchange of Thailand Samples: 1,049 listed firm from 2014 to 2016. Method: Regression analysis. Dependent variables: Conservatism: - Model of Basu (1997) - Model of Ball and Shivakumar (2005).	Board meeting did not influence conservatism.
Board activity - Board meeting - Board attendance	Saeed (2020)	To investigate the relationship between corporate governance and accounting conservatism.	Market: Bangladesh, India and Pakistan. Samples: 100 firms from 2009 to 2015. Method: Regression analysis. Dependent variables: Conservatism: Accruals based 1: Givoly and Hayn (2000a), Accruals based 2: Ball and Shivakumar (2005), Sensitivity of Earnings to Bad News relative to Good News: Basu (1997), Earnings based: Ball et al. (2000), Skewness based: Beatty et al. (2008), Composite: Donovan, Frankel, and Martin (2015).	Board activity: board meeting and board attendance in India and Pakistan had a positive effect on conservatism (Basu, 1997), (Ball et al., 2000) and (Donovan et al., 2015).

Table 2.8 Summary of Studies on Board activity and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Board attendance	Raithatha and Shaw (2019)	To investigate whether family firms are motivated to adopt conservative accounting practices.	<p>Market: Bombay Stock Exchange.</p> <p>Samples: 2,534 firms from 2006 to 2015, 14,081 firm-year observations from 2005 to 2015.</p> <p>Method: Regression analysis.</p> <p>Dependent variables:</p> <ul style="list-style-type: none"> - Conditional conservatism: - Based on Earnings-stock return relationship (Basu, 1997) - Based on Accrual-cash flow relationship (Ball & Shivakumar, 2005) - Conservatism score (C_score) (Khan & Watts, 2009) - Unconditional conservatism Based on non-operating accruals (Givoly & Hayn, 2000a). 	Board attendance had a negative relationship on accounting conservatism according to the model of Givoly and Hayn (2000a). No accounting conservatism relationship was found in other models.

2.3.9 Compensation and Accounting Conservatism

In case the management's compensation contracts are linked to accounting figures, accounting conservatism will reveal their economic losses in a timely manner, but slow down the reward for economic gains until the benefits are realized. Therefore, accounting conservatism prevents management's over-compensation (Watts, 2003). There are researches related to board compensation and CEO compensation with accounting conservatism as follows:

2.3.9.1 Board Compensation

Good governance prevents earnings management by directing the opportunistic behavior of management (Davison, Goodwin-Stewart, & Kent, 2005) to be in accordance with roles and responsibilities, fiduciary duties and legal liabilities, and dedication and contributing value of the directors. Thus, firms should determine the board compensation that motivate them to supervise the management properly, and reduce agency problem. This is supported by the study of Jeong and Kim (2013), who focused on the firms from the Compustat, CRSP and Corporate Library databases from 2006 to 2008. They found a positive relationship between the proportion of equity-based compensation and the level of conservatism. This reflects that equity-based compensation to outside directors strengthens the supervision of the firm by the application of accounting conservatism. Such supervision can reduce information asymmetry between managers and shareholders. In addition, applying accounting conservatism helps to deter board over-compensation if the compensation is based on accounting profits. Iwasaki, Otomasa, Shiiba, and Shuto (2018) examined the relationship between accounting conservatism and earnings-based executive compensation contracts in Japanese firms, and found a positive relationship between accounting conservatism and the compensation of the board of directors. Furthermore, firms with low-quality information environments require more accounting conservatism since the managers of such firms have more opportunities to engage in opportunistic behavior.

2.3.9.2 CEO Compensation

Since earnings-based executive compensation contracts may cause more serious ex-post settling up problems, accounting conservatism is required to prevent managers from biasing earning upwards to increase their compensations (Blunck & Rego, 2013). According to the study of Leonea, Wub, and Zimmerman (2006) from 1992 to 2003, CEO cash compensation contracts require conservatism. This is in line with

Zhang, Gao, and Zeng (2019), who studied the relationship between accounting conservatism and executive compensation-performance sensitivity in China. They found a positive association between executive compensation and accounting-based measure of performance. The result is consistent with Li, Henry, and Wu (2020), who revealed that accounting conservatism is positively related to the pay-for-performance sensitivity of CEO option based compensation in the S&P 500 Index.

Compensating risk-averse managers with stock options leads to investing in more risky projects. However, an excessive amount of compensation, may cause the risks to debtholders since their wealth will be transferred the shareholders so that they have to prevent an increase in risks. Borrowers can deploy accounting conservatism in financial reporting to reduce creditors' concerns in regards to stockholders' and managers' opportunistic wealth expropriation. Hu and Jiang (2018) examined the effect of managerial risk incentives on financial reporting conservatism from 1993 to 2014, and found that excessive risk incentives were positively associated with the accounting conservatism.

Brockman, Ma, and Ye (2015) found that firms with risks arising from risk-seeking behaviors since the executives require high compensation tend to use more timely and clearly loss recognition in firms with high debt capital structures. In addition, firms that recognize loss in a timely manner can reduce the positive correlation between the risk caused by CEO compensation and the firm's cost of loan. It indicates that timely recognition of the debtor's loss is a mechanism to reduce the risk caused by CEO compensation, and reduce the opportunity to allocate the firm's net assets to the managers instead of investing in projects with positive Net Present Value (Watts, 2003). As a result, the risk of the creditors is also reduced. Executive compensation contract is considered the main factor of accounting conservatism. The results are also consistent with the view that accounting conservatism complements other mechanisms, such as corporate governance, in reducing information asymmetry and agency problems between managers and shareholders and other stakeholders.

From literature review as shown in Table 2.9, several studies found that board compensation and CEO compensation increased accounting conservatism. Thus, the hypothesis is that compensation has a positive direct effect on accounting conservatism.

Table 2.9 Summary of Studies on Compensation and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
- Board compensation - CEO compensation	Jeong and Kim (2013)	To investigate whether the proportion of the equity-based compensation to total compensation of outside directors has an effect on the level of conservatism.	Market: Compustat, CRSP and Corporate Library databases. Samples: 3,104 firm-year observations from 2006 to 2008. Method: OLS regression model. Dependent variables: Accounting Conservatism: - CSCORE based on Khan and Watts (2009) - CONACC based on Givoly and Hayn (2000a) - CONBM based on Beaver and Ryan (2000)	- Board compensation was positively correlated with CONACC and CONBM conservatism. - CEO compensation was positively correlated with CONBM conservatism.
Board Compensation	Iwasaki et al. (2018)	To investigate the effect of executive compensation on financial accounting conservatism.	Market: Tokyo Stock Exchange. Samples: 20,811 firm-year for fiscal years from 1996 to 2006. Method: OLS regression model. Dependent variables: Conservatism: Basu (1997).	Board compensation had a positive effect on conservatism.

Table 2.9 Summary of Studies on Compensation and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO compensation	Zhang et al. (2019)	To investigate the relationship between accounting conservatism and executive compensation-performance sensitivity.	Market: China Samples: 14,389 firm-year observations from 2003 to 2012. Method: OLS regression model Dependent variables: Accounting Conservatism: based on Watts (2003)	Executive compensation-performance sensitivity had a positive relationship on conservatism.
CEO Compensation	Li et al. (2020)	To identify means of better associating executive remuneration with managerial decision making and firm performance.	Market: S&P Capital IQ ExecuComp database Samples: 16,631 firm-year observations from 1992 to 2014. Method: OLS regression model Dependent variables: Conservatism: Khan and Watts (2009)	A positive relation between firm conservatism scores and the pay-for-performance sensitivity of option as granted to CEOs.
CEO compensation	Hu and Jiang (2018)	To investigate the effect of managerial risk incentives on financial reporting conservatism.	Market: Standard & Poor's ExecuComp. Samples: 19,269 firm-year from 1993 to 2014 fiscal years. Method: Two-stage regression analysis. Mediator variables: Managerial risk incentives. Dependent/Moderator variables: Accounting Conservatism: Basu (1997). Dependent variables: Cost of debt.	- CEO compensation had a positive effect on managerial risk incentives. Managerial risk incentive had a positive effect on accounting conservatism. The relationship with the managerial risk incentives and cost of debt was weakened by conservatism

Table 2.9 Summary of Studies on Compensation and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO compensation (Option compensation sensitivity to return volatility)	Brockman et al. (2015)	To investigate whether accounting conservatism is a viable mechanism to mitigate the agency conflict between shareholders and debt holders arising from CEO compensation risk.	<p>Market: Standard & Poor’s ExecuComp.</p> <p>Samples: 1,842 unique firms (13,171 firm-year observations) from 1992 to 2007.</p> <p>Method: OLS regression.</p> <p>Dependent/Moderator variables: Accounting Conservatism: Basu (1997).</p> <p>Dependent variables: Cost of debt.</p>	<p>- CEO compensation had a positive effect on accounting conservatism.</p> <p>- The positive relationship between CEO compensation risk and borrowing costs was reduced for firms using conservatism.</p>



2.3.10 Ownership Structure and Accounting Conservatism

2.3.10.1 Family Ownership

According to the alignment effect concept, the family's ownership and management increases the earnings quality of the firm since the firm considers long-term benefits. Executives would not manipulate the earnings since it may damage the reputation of the family. Thus, family firms are motivated to report quality profits than non-family firms (Cascino, Pugliese, Mussolino, & Sansone, 2010). Moreover, the study on the impact of International Financial Reporting Standards (IFRS) convergence on conditional conservatism in Malaysia conducted by Marzuki and Wahab (2016) during 2004-2008 revealed that IFRS enhances conservatism, and family firms are more conservative post-IFRS convergence. This is in line with Boonlert-U-Thai and Kuntisook (2009), who found that Thai firms' equity were owned by the founder and members of the family during 2000-2006, which is positively associated with accounting conservatism.

Furthermore, Chen, Chen, and Cheng (2014) examined the impact of founding family ownership on accounting conservatism in 1,204 unique firms listed on the S&P 1500 index from 1996 to 2005. They divided the samples into two groups: non-CEO family ownership, and total family ownership, including both CEO and non-CEO family ownership. They found that conservatism increased in firms with non-CEO family ownership. They also tested by dividing the sample into a group with family members are also the board of director with non-CEO family directors, and the other group is total family control, including board seats held by family CEOs. As a result, conservatism increased in firms with family members as the board of director, but non-CEO family directors. Thus, the stronger family owners' influence on the board is, the more conservative the financial reporting. The findings are consistent with the recent evidence in the family-firm literature that founding families exhibit substantial incentives to reduce agency and litigation costs and to maximize firm value.

Fendiani and Tandiono (2016) examined family business and managerial ownership that affect the level of accounting conservatism in Indonesia during 2010-2013, and found that family business positively affected the level of accounting conservatism. This reflects that family firms in Indonesia will exert a greater alignment of interest, thereby

indicating a low level of agency problems Type I. This is in line with Mohammed, Ismail, and Amran (2019), who found a positive relationship between family ownership and accounting conservatism in Turkey. There are also further studies suggesting that the concept of concentrated equity is positively correlated with accounting conservatism since shareholders have incentives and power to discipline the managers. This leads to a greater level of financial reporting conservatism (Alves, 2019). In addition, Memon, Fei, Shaique, Usman, and Nazir (2020) also found that concentrated family ownership in Pakistan had a positive relationship with accrual-based conservatism and asymmetric timeliness.

There are also other studies that are in accordance with entrenchment effect. When ownership concentration increase, the controlling shareholder may expropriate the interests of minority shareholders by earnings management, and apply less accounting conservatism (Song, 2015b). This is in line with Basu, Huang, Mitsudome, and Weintrop (2005), who studied firms in Taiwan from 1991 to 1996. They found that the earnings of family-controlled firms were reported with less accounting conservatism than the earnings reported by non-family-controlled firms. Furthermore, Alkurdi, Al-Nimer, and Dabaghia (2017) examined the impact of ownership on the level of accounting conservatism in Jordan from 2005 to 2013, and found that the concentration of ownership or family ownership did not affect conservatism.

2.3.10.2 Director Ownership

Outside director is important in ensuring board independence and is responsible for directing the executive managers. The relationship between director ownership and accounting conservatism has been studied by numerous researchers. Ahmed and Duellman (2007) found a positive association between conservatism and outside director ownership. This shows that outside director ownership increases corporate governance incentives. Janafzaei and Hasani (2015) also indicated that the board of directors of company, as a governing institution play an important role in leading the firm by making decisions and applying accounting conservatism. They conducted a study on the relationship between percentage of managerial ownership and the level of conservativeness in Tehran Stock Exchange from 2005 and 2010. The results showed a meaningful positive relationship between director ownership and accounting conservatism,

which is consisted with Kao and Chu (2016), who found that director shareholdings were positively correlated with conservatism in Taiwanese firms during 2007 – 2011. However, their results are against LaFond and Roychowdhury (2018), who found that conservatism as measured by the asymmetric timeliness of earnings declines CEO ownership and director ownership. However, Suleiman (2014) found that director ownership did not influence conservatism in Nigerian Stock Exchange during 2003 to 2010. The result is in line with Enache and Garcia-Meca (2019), who examined the relationship between accounting conservatism and board composition in active US biotech firms during 2005–2013.

2.3.10.3 CEO Ownership

The ownership structure has a significant influence on the quality of financial reporting according to Jensen (1993), who stated that managers have a strong incentive to take action if they have a significant stake in the firm. This is according to the alignment effect. When the CEO becomes a shareholder, he is not just an agent, but also the owner of the firm, which can reduce agency conflicts. Firms tend to apply conservative accounting since they are not only oriented to a large profit, but also the sustainability of the firm (Yuliarti & Yanto, 2017). Similar research conducted by Dewi and Suryanawa (2014) and Saputra (2016) revealed that managerial ownership had a positive effect on accounting conservatism since accounting conservatism was used as a tool to reduce agency problems. Thus, it is necessary that firms apply accounting conservatism more if the interests of managers and shareholders are less aligned. In addition, Shuto and Takada (2010) in Japan during 1991-2005 found a relationship between managerial ownership and accounting conservatism based on the managerial level. In other words, low and high levels of managerial ownership negatively associated with conservatism due to low level of agency problem according to the incentive alignment effect, while intermediate levels of managerial ownership were positively associated with conservatism due to high level of agency problem according to the management entrenchment effect. Furthermore, Majeed et al. (2017b) also found that in firms that have shareholders with managerial ownership firms require conservatism to produce market competition.

In contrast, Banker, Basu, Byzalov, and Chen (2016) examined the confounding effect of cost stickiness on conditional conservatism estimates in U.S. firm from 1987 to 2007. It was found that in the model without sticky costs, managerial ownership and firm size were negatively related with accounting conservatism. This is supported by Yunos and Ahmad (2014) and LaFond and Roychowdhury (2008), who revealed a negative relationship between asymmetric timeliness and management ownership in the US firms during 1994-2004 under the supervision of board of directors, as well as those that are less compliant with the regulations of the Stock Market (Fan & Wong, 2002). Interestingly, firms with higher management ownership are less likely to implement accounting conservatism, while Ursula and Adhivinna (2018) found that managerial ownership had no influence on accounting conservatism.

From literature review as shown in Table 2.10, several studies found that family ownership, director ownership and CEO Ownership, increased accounting conservatism. Thus, the hypothesis is that shareholder structure has a positive direct effect on accounting conservatism.



Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	Marzuki and Wahab (2016)	To examine the impact of International Financial Reporting Standards (IFRS) convergence on conditional conservatism in Malaysia.	Market: Malaysia Samples: 1760 firm-year observations from 2004 to 2008. Method: OLS regression Dependent variables: Accounting Conservatism: Basu (1997) and Ball and Shivakumar (2005)	Family ownership had a positive effect on accounting conservatism based on Ball and Shivakumar (2005).
Family ownership	Boonlert-U-Thai and Kuntisook (2009)	To examine the effects of controlling shareholder characteristics on financial reporting conservatism.	Market: Stock Exchange of Thailand Samples: 1,733 firm-years from 2000 to 2006 fiscal years. Method: OLS regression. Dependent: Accounting Conservatism: Basu (1997).	Conservatism increased with greater controlling shareholder ownership (Family ownership).
Family ownership	Chen et al. (2014)	To investigate the impact of founding family ownership on accounting conservatism.	Market: S&P 1500 index Samples: 8264 firm-years from 1204 firms from 1996 to 2005. Method: OLS regression. Dependent variables: Accounting conservatism based on negative accruals, as developed in Givoly and Hayn (2000a).	- Conservatism increased with the ownership of founding family members who are not CEOs. - The stronger family owners influenced the board, the more conservative the financial reporting.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Family ownership - CEO ownership	Fendiani and Tandiono (2016)	To investigate the effect of a family ownership and its level of accounting conservatism.	Market: Indonesia Samples: 100 Index from 2010 to 2013. Method: OLS regression. Dependent variables: Accounting conservatism based on negative accruals, as developed in Givoly and Hayn (2000a).	- Family ownership positively affected the degree of conservatism. - Managerial ownership and firm size did not affect the degree of conservatism.
Family ownership	Mohammed et al. (2019)	To investigate the influence of board characteristics and audit committee characteristics on accounting conservatism with respect to the influence of family ownership in Turkey.	Market: Turkey. Samples: listed firms from 2011 to 2015. Method: OLS regression. Dependent variables: Accounting conservatism based on negative accruals, as developed in Givoly and Hayn (2000a).	Family ownership had a positive contribution to conservatism based on negative accruals.
- Family ownership - Total assets	Alves (2019)	To examine the association between accounting conservatism and ownership concentration.	Market: Portugal. Samples: 26 non-financial firms (749 firm-year observations) from 2002 to 2016. Method: OLS regression. Dependent variables: Accounting Conservatism: market-value based (Givoly & Hayn, 2000a).	Concentration and size were positively correlated with conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	Memon et al. (2020)	To investigate concentrated ownership's effect on conservatism in financial reporting.	<p>Market: Pakistan Stock Exchange.</p> <p>Samples: 1298 firm-year observations from 2006 to 2016.</p> <p>Method: Random effect regression and Generalised method of moment system regression.</p> <p>Dependent variables: Accounting Conservatism</p> <ul style="list-style-type: none"> - Accruals-based (Givoly & Hayn, 2000a) - Market-based (Beaver & Ryan, 2000) - Asymmetric timeliness of earning (Basu, 1997) 	Concentration was positively related with accruals-based and asymmetric timeliness, but it was negatively correlated with market-based conservatism.
Family ownership	Song (2015b)	To summarize the relevant literature mainly from the ownership concentration and accounting conservatism, in order to provide theoretical support for the follow-up study.	<p>Method: Literature review.</p> <p>Dependent variables: Accounting conservatism.</p>	A significant negative relationship between ownership concentration and accounting conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Family ownership	Basu et al. (2005)	To investigate the impacts of share ownership by large business families on earnings properties in Taiwan.	<p>Market: Taiwan Stock Exchange.</p> <p>Samples: 1,334 firm-year observations from 1991 to 1996.</p> <p>Method: OLS regression.</p> <p>Dependent variables: Accounting Conservatism (Basu, 1997).</p>	There was no significant difference in the timeliness of reported earnings between family-controlled and non-family firms, but earnings of family-controlled firms were less conservative than those of non-family firms.
Family ownership	Alkurdi et al. (2017)	To examine the impact of ownership structure on the level of accounting conservatism in Jordan.	<p>Market: Amman stock exchange, Jordan.</p> <p>Samples: 99 manufacturing and financial companies.</p> <p>Method: Multiple regression analysis.</p> <p>Dependent variables: Accrual-based measure of Conservatism proposed by Givoly and Hayn (2000a).</p>	Concentration of ownership had no significant effect on accounting conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Director ownership	Ahmed and Duellman (2007)	To investigate the association between the board of director characteristics and accounting conservatism.	Market: S&P 500 Samples: 306 firms during 1999-2001. Method: Regression analysis. Dependent variables: - Conservatism - Accrual-based (Givoly & Hayn, 2000a) - Market-based (Beaver & Ryan, 2000) - Asymmetric timeliness of earning (Roychowdhury & Watts, 2006).	The percentage of outside directors' shareholdings is positively related to conservatism.
Director ownership	Janafzaei and Hasani (2015)	To analyze the relationship between percentage of managerial ownership and the level of conservativeness.	Market: Tehran Stock Exchange. Samples: 111 companies from 2005 to 2010. Method: Regression analysis. Dependent variables: Accounting conservatism.	There was a meaningful positive relationship between managerial ownership and accounting conservativeness.
Director ownership	Kao and Chu (2016)	To compare the influence of audit committees and supervisors on accounting conservatism.	Market: Taiwan Stock Exchange. Samples: 6,048 observations from 2007-2011. Method: Regression analysis. Dependent variables: Accounting conservatism (M. Khan & Watts, 2009).	Director ownership was positively correlated with accounting conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- CEO ownership - Director ownership	LaFond and Roychowdhury (2008)	To examine the effect of managerial ownership on financial reporting conservatism.	Market: Standard & Poor's ExecuComp. Samples: 14,786 firm-years over the period 1994-2004 in US firms. Method: Regression analysis. Dependent variables: Accounting conservatism: Asymmetric timeliness of earning (Basu, 1997).	Conservatism as measured by the asymmetric timeliness of earnings declined with CEO ownership and director ownership.
Director ownership	Suleiman. (2014)	To examine the effects of corporate governance mechanisms on accounting conservatism in the Nigeria food and beverages sector.	Market: Nigerian Stock Exchange. Samples: from 2003 to 2010. Method: Regression analysis. Dependent variables: Accounting conservatism (Givoly & Hayn, 2000b).	Director ownership did not influence conservatism.
Director ownership	Enache and Garcia-Meca (2019)	To examine the relationship between accounting conservatism and board composition.	Market: NYSE, AMEX and NASDAQ stock exchanges. Samples: 66 companies over nine years from 2005 to 2013. Method: Regression analysis. Dependent variables: Accrual-based accounting conservatism (Givoly & Hayn, 2000b) and Basu (1997) model.	Director ownership did not influence conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO ownership	Dewi and Suryanawa (2014)	To examine the correlation among managerial ownership structure, leverage, and financial distress in accounting conservatism.	Market: Indonesia Stock Exchange. Samples: 37 companies in 2009–2011. Method: Regression analysis. Dependent variables: Accrual-based accounting conservatism (Givoly & Hayn, 2000b).	The effect of managerial ownership structure was positively significant to accounting conservatism.
CEO ownership	Saputra (2016)	To examine the effect of managerial ownership structure, debt covenant, financial distress, growth opportunities, risk of litigation and leverage which accounting conservatism.	Market: Indonesia Stock Exchange Samples: 53 companies from 2010 to 2012. Method: Regression analysis. Dependent variables: Accounting conservatism.	The effect of managerial ownership structure was positively significant to accounting conservatism.
CEO ownership	Shuto and Takada (2010)	To examine the effect of managerial ownership on accounting conservatism	Market: The Stock Exchange of Japan. Samples: 22,536 firm-years from 1991 to 2005. Method: Regression analysis. Dependent variables: Conservatism is based on Basu (1997).	Low and high levels of managerial ownership were negatively associated with conservatism, while intermediate levels of managerial ownership positively associated with conservatism.

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO ownership	Majeed et al. (2017b)	To examine the impact of various dimensions of product market competition on accounting conservatism particularly in varying ownership structures in China.	Market: China Samples: 17,428 Chinese firm-year observations from 2000 to 2014. Method: Regression analysis. Dependent variables: - conservatism score (C_score): Khan and Watts (2009) is based on Basu (1997).	Firms that have shareholders with managerial ownership require conservatism to produce market competition.
	Banker et al. (2016)	To examine the confounding effect of cost stickiness on conditional conservatism estimates.	Market: The United States. Samples: 234,638 firm-years from 1987 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (LaFond & Roychowdhury, 2008).	In the model without sticky costs, managerial ownership was negatively related with accounting conservatism.
CEO ownership	Yunos et al. (2014)	To investigate the effect of ownership concentration and firms' governance on accounting conservatism.	Market: Bursa Malaysia. Samples: 2021 firm-year observations from 2001 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	CEO ownership

Table 2.10 Summary of Studies on Ownership Structure and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
CEO ownership	Ursula and Adhivinna (2018)	To determine how managerial ownership, firm size, leverage, and growth opportunities affect accounting conservatism.	<p>Market: Indonesia Stock Exchange.</p> <p>Samples: 10 manufacturing company (60 firm-years) from 2012 to 2017.</p> <p>Method: Regression analysis.</p> <p>Dependent variables: Accrual-based accounting conservatism (Givoly & Hayn, 2000b).</p>	Managerial ownership had no influence on accounting conservatism.



2.3.11 Audit Committee and Accounting Conservatism

Audit committee is a part of the board of directors. Most firms in Thailand appoint major shareholders to be directors. As a result, supervision may be formed based on the intent of the controlling shareholders. In contrast, audit committee must consist of independent directors and at least one person with knowledge and competency in finance and accounting in order to supervise and monitor the financial reporting, accounting and auditing of the firm under good corporate governance. This can ensure quality financial reports in accordance with generally accepted accounting standards (Kao & Chu, 2016).

2.3.11.1 Audit Committee Size

Corporate governance mechanisms also affect the quality of corporate earnings (Hamonangan & Machfoedz, 2006). In addition, Ismail, Dunstan, and Zijl (2010) proved that there was a positive relationship between audit committee size and the level of earnings quality since audit committee members encounter asymmetric loss function and have to bear reputation costs, while financial fraud or a material error in the financial statements occur. KPMG (2006) surveyed 1,200 audit committee members in 17 countries and found that audit committee members were at risk of financial litigation than other members of the firm. Thus, it is necessary to promote accounting conservatism in their financial reporting. This is in line with Salama and Putnam (2015), who found that audit committee size had a positive effect on conservatism in the U.S. firms during 2000-2006. Dao, HassabElnaby, and Said (2015) also found similar relationship in the U.S. firms during 2002-2009. Mohammed et al. (2019) indicated that the shareholder structure of Turkish firms is family ownership which undermined the impact of board characteristics and the audit committee characteristics. Thus, accounting conservatism is required.

However, Tuan (2016) examined the association between audit committee characteristics and accounting conservatism at the Borsa Istanbul in 2012 and 2013, and found that audit committee size was not significantly associated with accounting conservatism.

2.3.11.2 Audit Committee Financial Expertise

Srinivasan (2005) examined penalties for outside directors when their firms experience accounting restatements in 1997-2001 in the United States, and revealed

that audit committee members with financial expertise will be affected rather than other audit committee if there is a failure in a financial reporting of the firm. Thus, audit committee members with financial expertise have more incentives to promote conservative accounting practices maintain their reputational capital, and reduce litigation concerns. This is consistent with Agrawal and Chadha (2005), who found that audit committee with financial expertise can reduce misstatement in financial reports and earnings management (Kankanamage, 2016). This is also supported by numerous studies, such as Sultana and Van der Zahn (2015), who examined the association between audit committee financial expertise and earnings conservatism in Australian companies during 2004-2008, Sultana (2015), who examined the association between audit committee characteristics and accounting conservatism in Australian firm during 2004–2012, Olyhoek (2017), who examined the association between the audit committee effectiveness and conditional conservatism in U.S firms listed on the S&P 500 during 2009-2015, and N. H. Mohammed et al. (2019), who examined the relation between conditional conservatism and audit committee effectiveness in Turkey from 2011 to 2015. The results of the aforementioned studies revealed that audit committee with financial expertise was positively associated with the accounting conservatism. However, Yunos et al. (2014) found that financial expertise on audit committee did not influence conservatism in Malaysian listed firms from 2001 to 2007.

From literature review as shown in Table 2.11, several studies found that audit committee size and audit committee with financial expertise increased accounting conservatism. Thus, the hypothesis is that audit committee has a positive direct effect on accounting conservatism.

Table 2.11 Summary of Studies on Audit Committee and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
Audit committee size	Salama and Putnam (2015)	To investigate the effect of accounting conservatism on the degree of financial leverage.	<p>Market: The United States</p> <p>Samples: 7,243 USA firm-year observations over the seven-year from 2000 to 2006.</p> <p>Method: OLS Regression.</p> <p>Dependent variables: Conservatism: Model of Basu (1997) and Model of Givoly and Hayn (2000a).</p>	Audit committee size had a positive effect on conservatism (Basu, 1997).
Audit committee size	Dao et al. (2015)	To examine the association between conservatism and audit-firm tenure and investigate the influences of audit committee characteristics on the association between conservatism and audit-firm tenure.	<p>Market: The United States</p> <p>Samples: U.S. 868 firm-year observations from 2002 to 2009.</p> <p>Method: OLS Regression</p> <p>Dependent variables: Accounting conservatism: accrual-based conservatism (Ahmed & Duellman, 2007) and market-based conservatism (Beaver & Ryan, 2000).</p>	Audit committee size had a positive effect on market-based conservatism (Beaver & Ryan, 2000).
Audit committee size	Tuan (2016)	To investigate the association between audit committee characteristics and accounting conservatism.	<p>Market: Borsa Istanbul</p> <p>Samples: 434 public companies in 2012 and 2013.</p> <p>Method: OLS Regression.</p> <p>Dependent variables: Accounting conservatism.</p>	The audit committee size is not significantly associated with accounting conservatism.

Table 2.11 Summary of Studies on Audit Committee and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Committee financial expertise	Sultana and Van der Zahn (2015)	To investigate the association between accounting financial expertise and earnings conservatism.	<p>Market: The Australian Securities Exchange</p> <p>Samples: 494 firm-year observations from 2004 to 2008.</p> <p>Method: Regression analysis</p> <p>Dependent variables: Accounting conservatism:</p> <ul style="list-style-type: none"> - Model of Basu (1997) - Model of Ball and Shivakumar (2005) 	Audit committee accounting financial expertise is important in recognising the asymmetrical timeliness of losses (Basu, 1997).
Committee financial expertise	Sultana (2015)	To examine the association between four pivotal audit committee characteristics and accounting conservatism.	<p>Market: The Australian Securities Exchange.</p> <p>Samples: 7,668 publicly listed firm-year observations from 2004 to 2012.</p> <p>Method: Regression analysis.</p> <p>Dependent variables: Accounting conservatism:</p> <ul style="list-style-type: none"> - Model of Basu (1997) - Model of Ball and Shivakumar (2005). 	A positive association is found between accounting conservatism and a director with financial expertise on the audit committee (Basu, 1997).

Table 2.11 Summary of Studies on Audit Committee and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Audit committee with financial expertise	Olyhoek (2017)	To investigate the relationship between conditional conservatism and audit committee effectiveness.	Market: The United States Samples: S&P 500 firms (1,648 firm-year observations) from 2009 to 2015. Method: OLS regression. Dependent variables: Accounting conservatism: Model of Ahmed et al. (2002).	Audit committee with financial expertise had a positive effect on conservatism, but audit committee size did not influence conservatism.
Audit committee financial expertise	Mohammed et al. (2019)	To investigate the influence of board characteristics and audit committee characteristics on accounting conservatism with respect to the influence of family ownership in Turkey.	Market: Turkey Samples: five-year period from 2011 to 2015. Method: OLS regression. Dependent variables: Accounting conservatism based on negative accruals, as developed in Givoly and Hayn (2000a).	Audit committee with financial expertise had a positive relationship on contribution to the accruals.
Audit committee financial expertise	Yunos et al. (2014)	To examine the association between the attributes of the board of directors and audit committee on accounting conservatism.	Market: Bursa Malaysia Samples: from 2001 to 2007. Method: Regression analysis. Dependent variables: Accounting conservatism (Basu, 1997).	Financial expertise on audit committee did not influence conservatism.

2.3.12 Control Variables and Accounting Conservatism

According to Hu and Jiang (2018), variables, firm size and leverage are also widely used in accounting conservatism research (Ball & Shivakumar, 2005; Khan & Watts, 2009; LaFond & Roychowdhury, 2008; Roychowdhury & Watts, 2007).

2.3.12.1 Leverage Ratio

Financial reporting based on accounting conservatism prevents overstated earnings. Thus, the dividend payment is appropriate. In other words, accounting conservatism reduces expropriating wealth from bondholders to equity holders. As a result, the conflict between equity holders and bondholders is reduced (Tangpanyatorn & Peetathawatchai, 2010). Firms that encounter severe debtholder–shareholder conflicts can apply accounting conservatism to solve issues relevant to excessive managerial risk incentives (Hu & Jiang, 2018). Moreover, leverage ratios are used by most firms as an indicator of their level of accounting conservatism. Leverage or high debt levels will lead to higher litigation risks, and could harm the firm. Therefore, it is essential that firms use more accounting conservatism (Liu & Elayan, 2015). According to Tan (2013) and Olyhoek (2017), accounting conservatism is related to the level of financial leverage. Sugiarto and Fachrurrozie (2018) and Rahayu, Kusmuriyanto, Kiswanto, and Gunawan (2018) also found that leverage of manufacturing companies in Indonesia significantly had a positive influence towards accounting conservatism. Certain studies have found that leverage ratio may not always require high accounting conservatism. For example, firms with dual holdings (firms with a debtholder who is also a shareholder) have less accounting conservatism due to information asymmetry between debtholders and equity holders (Lopatta, Grlger, & Kaspereit, 2016), or firms of which bonds are close to the maturity period, accounting conservatism may be reduced (Khurana & Wang, 2015), or in case bondholders have sold credit default swaps (CDSs), the lender's incentive to supervise borrowers is less. Thus, borrowers tend to report with less accounting conservatism. (Martin & Roychowdhury, 2015)

2.3.12.2 Total Assets

Firm size is considered a characteristic of the firm. Parameters used to determine firm size are the number of employees, sales volume, amount of registered and issued capital, especially total assets. Several studies on the relationship of firm size and

accounting conservatism have been conducted. Nasr and Ntim (2018) found that firm size was influence significantly with accounting conservatism in Egypt during 2011 – 2015 since large firm size must provide reliable information for investors for decision-making. A large firm size with a lot of capital, employees, and high sales reflects stability. This is also supported Deng, Li, Lobo, and Shao (2017).

However, firm size is negatively correlated with accounting conservatism since large firms have lower information asymmetry. Thus, accounting conservatism can be used less. According to Lin (2016a), who examined the association between institutional ownership composition and accounting conservatism in the U.S. firms from 1996 to 2006, firm size is significantly negative and consistent with the notion that information asymmetry is less severe in larger firms. Furthermore, Sultana (2015), who conducted a study in Australia from 2007 to 2012, Kao and Chu (2016), who conducted a study in Taiwan from 2004 to 2011, Francis, Hasan, Park, and Wu (2015), who studied firms listed in S&P 500 from 1988 to 2007, Iwasaki et al. (2018) in Tokyo from 1996 to 2006, and Majeed, Zhang, and Wang (2017a), who studied firms listed in China from 2000 to 2014, found that firm size had an inverse relationship with accounting conservatism.

However, Yulianti and Yanto (2017), who studied firms in Indonesia from 2011-2015 failed to prove the effect of firm size on accounting conservatism. The study indicated that firm size did not affect the application of accounting conservatism. In other words, large firm size does not guarantee greater accounting conservatism since there are other factors that influence the application of accounting conservatism. This is consistent with the results of the study conducted by Putra and Subowo (2016) in Indonesia from 2011 to 2014 that found no relationship between firm size and earning quality.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism

Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio	Tan (2013)	To examine the impact of state contingent allocation of creditor control rights on financial reporting.	<p>Market: The United States</p> <p>Samples: 34,224 U.S. firm-quarter observations from fiscal year 1996-2006.</p> <p>Method: Multiple Regression</p> <p>Independent Variables:</p> <ul style="list-style-type: none"> - Violation - Current Ratio - Tangible Net Worth - Leverage Ratio - Debt-to-Earnings - Fixed Charge Coverage - Interest Coverage <p>Dependent variables: Conservatism:</p> <ul style="list-style-type: none"> - Conservatism score (C_score): Khan and Watts (2009) is based on Basu (1997) 	Leverage Ratio had a positive effect on accounting conservatism.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Leverage Ratio - Total Assets	Olyhoek (2017)	To investigate the relation between conditional conservatism and audit committee effectiveness.	Market: The United States Samples: S&P 500 firms (1,648 firm-year observations) from 2009 to 2015. Method: Ordinary least squares regression. Independent Variables: Audit committee effectiveness. Dependent variables: Accounting conservatism: - Basu (1997) - A. S Ahmed et al. (2002) Control Variables - Leverage - Firm size	- Leverage Ratio had a positive effect on accounting conservatism. - Firm size had a negative effect on accounting conservatism.
Leverage ratio	Sugiarto and Fachrurrozi e (2018)	To examine the influence of financial distress, leverage, investment opportunity set, and managerial ownership to accounting conservatism.	Market: Indonesia Stock Exchange. Samples: 143 manufacturing companies from 2013 to 2016. Method: Multiple regression model. Dependent variables: Accounting conservatism: Model of Watts (2003).	Leverage significantly had a positive influence towards accounting conservatism.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Leverage ratio	Rahayu et al. (2018)	To determine the effect of the leverage, litigation risk, financial distress, political cost and company growth on accounting conservatism.	Market: Indonesian Stock Exchange. Samples: 144 manufacturing companies for year 2013-2016. Method: Multiple regression model. Dependent variables: Accounting conservatism: Beaver and Ryan (2000).	Leverage positive significant effect to accounting conservatism.
- Total asset - ROA	Nasr and Ntim (2018)	To investigate the effect of corporate governance mechanisms on accounting conservatism in Egypt.	Market: Egypt. Samples: 201 Egyptian observations from 2011 to 2015. Method: Multiple regression. Dependent variables: Accounting conservatism: Model of Givoly and Hayn (2000b).	Total asset positively influenced conservatism, but ROA did not influence conservatism.
- Total asset - ROA	Deng et al. (2017)	To examine whether initial loan sales in the secondary loan market influences borrowing firms' accounting conservatism.	Market: the LSTA/LPC Samples: 1,294 non-financial firms with traded loans from 1999 to 2010. Method: Multiple regression Dependent variables: Accounting conservatism: Model of Basu (1997).	Total asset positively influenced conservatism, but ROA did not influence conservatism.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Total asset - Market to book ratio	Lin (2016a)	To investigate the association between institutional ownership composition and accounting conservatism.	Market: The United States. Samples: 26,507 firm-year observations representing 3,623 firms from 1996 to 2006. Method: Regression analysis. Dependent variables: Accounting conservatism: Model of Basu (1997).	Total asset had a negative effect on conservatism, but Market to book ratio did not influence conservatism.
- Total asset - Market to book ratio	Sultana (2015)	To examine the association between four pivotal audit committee characteristics and accounting conservatism.	Market: The Australian Securities Exchange. Samples: 7,668 publicly listed firm-year observations from 2004 to 2012. Method: Regression analysis Dependent variables: Accounting conservatism: - Model of Basu (1997) - Model of Ball and Shivakumar (2005).	Total asset and market to book ratio had a negative effect on conservatism (Basu, 1997).
Total assets	Kao and Chu (2016)	To compare the influence of audit committees and supervisors on accounting conservatism.	Market: Taiwan Stock Exchange. Samples: 6,048 observations from 2007-2011. Method: Regression analysis. Dependent variables: Accounting conservatism (Khan & Watts, 2009).	Firm size was negatively correlated with accounting conservatism.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Total asset - ROA	Francis et al. (2015)	To investigate the effect of CEO gender on corporate financial reporting decision making.	<p>Market: Standard and Poor's (S&P)</p> <p>Samples: 1,500 companies from 1988 to 2007.</p> <p>Method: Regression analysis.</p> <p>Dependent variables: Accounting conservatism:</p> <ul style="list-style-type: none"> - The ratio of market value to book value of a firm. (Beaver & Ryan, 2000) - The cumulative non-operating accruals (Givoly & Hayn, 2000a) - The skewness of earnings (Zhang, 2008). 	Total asset had a negative effect on conservatism when measured by the method of (Beaver & Ryan, 2000) and (J. Zhang, 2008), but market to book ratio had a positive effect on conservatism when it was measure by the three methods.
- Total assets - Market to book ratio	Iwasaki et al. (2018)	To investigate the effect of executive compensation on financial accounting conservatism.	<p>Market: Tokyo Stock Exchange.</p> <p>Samples: 20,811 firm-year for fiscal years from 1996 to 2006.</p> <p>Method: OLS regression model.</p> <p>Dependent variables: Conservatism: Basu (1997).</p>	Firm size had a negative effect on conservatism, but market to book ratio did not influence conservatism.

Table 2.12 Summary of Studies on Control Variables and Accounting Conservatism (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Total assets - Market to book ratio	Majeed et al. (2017b)	To examine the impact of various dimensions of product market competition on accounting conservatism particularly in varying ownership structures in China.	Market: China Samples: 17,428 Chinese firm-year observations from 2000 to 2014. Method: Regression analysis. Dependent variables: Conservatism score (C_score): Khan and Watts (2009) is based on Basu (1997)	Firm size and market to book ratio had a negative effect on conservatism.
- Total asset - Market to book ratio	Yuliarti and Yanto (2017)	To determine the effect of leverage, firm size, managerial ownership, board of commissioner size and profitability to accounting conservatism.	Market: The Indonesia Stock Exchange. Samples: 69 publicly listed firm-year observations from 2011 to 2015. Method: Regression analysis. Dependent variables: Accounting conservatism: Model of Watts (2003).	Market to book ratio had a negative effect on conservatism, but firm size did not influence conservatism.
- Total asset - Market to book ratio	Putra and Subowo (2016)	To analyze the effect of accounting conservatism, investment opportunity set, leverage, and the size of the company towards the quality of earnings.	Market: The Indonesia Stock Exchange. Samples: 93 publicly listed firm-year observations from 2011 to 2014. Method: Regression analysis. Dependent variables: Earning quality: - Cash flow from operation divided by Net income.	Total asset and market to book ratio did not influence earning quality.

2.3.13 Accounting Conservatism and Cost of Capital

Information asymmetry among investors occurs when there are uninformed investors trading with informed investors. Uninformed investors take risks and demand an increased risk premium (Easley & O'Hara, 2004). Similarly, Hughes, Liu, and Liu (2007) showed that information asymmetry affected risk premium. Conditional conservatism requires a stricter profit recognition audit than a loss recognition audit, which reflects bad news faster than good news. This is called asymmetric timeliness of earnings. (Basu, 1997). With strict audits, information asymmetry can be reduced (Ball et al., 2000; LaFond & Watts, 2008). Thus, accounting conservatism can signal the quality of financial information when there is high quality of data leading to the variance in cash flow that the firm will receive in the future, a decrease in information risk (Lambert, Leuz, & Verrecchia., 2007), and a decrease in cost of capital (Zare et al., 2013). According to Hassani, Hedayati, Mohammadi, and Lesan (2013), accounting conservatism assures creditors that they would receive returns and interests. Moreover, shareholders would realize long-term expected returns, leading to a decrease in interest and dividend distribution. Additionally, Suijs (2008) also found that the discount rate that is not too high is the result of the accounting information system (AIS) that reports bad news more accurately than good news. Guay and Verrecchia (2017) also confirmed that timely reporting of low realizations results in lower uncertainty, lower cost of capital and higher firm value. It can be concluded that accounting conservatism is inversely related to capital cost. (Artiach & Clarkson, 2012; Warad & Al-Debi'e, 2017). Type of cost according to prior studies can be categorized into 3 groups as follows:

2.3.13.1 Cost of Equity Capital

According to the relationship between the quality of accounting figures from the use of accounting conservatism and equity investors' desired rate of return, accounting conservatism can be divided into 2 groups: ex ante (balance sheet) or unconditional conservatism, and ex post (earnings) or conditional conservatism. Chan, Lin, and Strong (2009), who studied financial firms in the UK during 1987-1999, used book-to-market ratio (B/M) as a proxy for ex ante conservatism, used the incremental bad news slope coefficient of earnings–return regression model as a proxy of ex post conservatism, and used the Ohlson and Juettner-Nauroth (2005) model to forecast cost of

equity capital. They found that accounting conservatism signaled to investors the quality of a firm's current and future profits, and also found that ex ante conservatism was negatively associated with the cost of equity capital. However, ex post conservatism was positively correlated with the cost of equity capital. This is consistent with Biddle, Ma, and Wu (2016), who used conditional accounting conservatism with information precision effect and information asymmetry effect influencing cost of equity of firms listed on the NYSE, NASDAQ, and AMEX during 1987-1998. They found a positive and significant relationship between accounting conservatism and cost of capital. However, after the government has enforced Sarbanes-Oxley Act (SOX), the effect of accounting conservatism on cost of capital has not been found, which is in line with the concept of improving data quality by Sarbanes-Oxley Act (SOX).

Garcia Lara et al. (2011) tested the association between conditional conservatism and cost of equity capital in US firms from 1975 to 2003, and found a significant negative relation between conditional conservatism and excess average stock returns. Even though cost of capital was measured by implied cost of capital derived from analysts' forecasts, the results remained the same. Their finding is consistent with Goh, Lim, Lobo, and Tong (2017), who examined the differential level of conservatism between the equity and the debt in the U.S. firms from 1994 to 2010. They found that firms get external financing from issuing shares based on the level of conservatism, and the cost of capital decreased more than the cost of issuing bonds. Similarly, Solikhah and Jariyah (2020), who studied firms in Indonesia during 2011-2015, found that accounting conservatism had a negative effect on the cost of equity. This is in line with Li (2015), who focused on firms in 35 countries during 1991 to 2007 and found that firms in financial reporting countries that use a high level of accounting conservatism had lower cost of equity and cost of debt. However, conservatism decreased only cost of debt among firms in the countries where accounting principles are accounting-based covenants.

The results of recent studies that are inconsistent with Chan et al. (2009) are the results of the study conducted by Khalifa, Othman, and Hussainey (2018), who examined the relationship between Ex ante conservatism based on Beaver and Ryan (2005) and Chan et al. (2009) measured by the Book-to-Market ratio (BTM), and Ex post conservatism based on the concept suggested by Basu (1997) and Khan and Watts (2009)

towards the cost of equity capital from 13 Middle East and North Africa countries (MENA) from 2004 to 2009. Their results revealed that the ex-ante conservatism was positively associated with the cost of equity capital, and that ex post conservatism was negatively associated with the cost of equity capital. Moreover, they found that the the cost of equity capital remained negative after controlling for ex-ante conservatism, and the value also increased.

2.3.13.2 Cost of Debt

Profits based on accounting conservatism reflect bad news faster than good news. Therefore, conservatism leads to more timely recognition of losses than gains, which enhances the quality of accounting information that is useful to lenders in the context of debt contracting and corporate governance (Sodan, 2012). In the contracting process, the lender bears downside risks arising from the borrower's performance. Debt contracts convince the borrower to performing their tasks in accordance with accounting conservatism, accounting becomes more binding (Ahmed et al., 2002; Zhang, 2008). Accounting conservatism is a mechanism to reduce downside risks for lenders. Borrowers with considerable accounting conservatism are rewarded by lowering interest rates (Zhang, 2008). Since lenders are limited upside potential of debt claims, they are less motivated to let their managers know the good news immediately, especially when the value of the enterprise is much higher than the value of the debt in the contract. Even though the firm's executives are willing to share the good news, the low cost of debt is often not rewarded by the lender (Li, 2015).

Accounting conservatism is beneficial to lenders in terms of corporate governance by providing borrowers with transparent management. Chan and Hsu (2013) showed that multi-layered firms can reduce opaqueness by applying more accounting conservatism in financial reporting to lower costs of debt. Furthermore, accounting conservatism can reduce conflict of interest from wealth expropriation from debtholders to shareholders by preventing overpaying dividend. Debtholders tend to demand low yields to offset the risk of overpaying of the borrowing firm. Thus, debtholder should reward firms that choose more conservative accounting with lower cost of debt (Ahmed et al., 2002; Sodan, 2012).

In addition, accounting conservatism provides a timely signal to the debtholder (Li, 2010). It enables debtholders to use their control rights more quickly (Sodan, 2012), which reduces their default risk (Li, 2015). Thus, conditional conservatism is considered precondition to lending (Kothari et al., 2009). Debtholders with conservatism will receive outside debt at a lower cost. This is consistent with Hu and Jiang (2018), who found that firms with high managerial risk incentives and conservatism have to bear low cost of debt. In contrast, firms that have applied accounting conservatism would like to no longer use the principle will encounter loss of reputation (Milgrom & Roberts, 1992). Thus, if a firm's credit rating falls due to its debt-rating, its cost of debt increases.

2.3.13.3 Weighted Average Cost of Capital

The total capital cost of the firm is obtained from the Weighted Average Cost of Capital (WACC) (Brealey, Myers, & Allen, 2011). Numerous studies focused on the relationship between WACC and accounting conservatism, such as Zare et al. (2013), who found an inverse correlation between WACC and accounting conservatism of Iranian companies from 2003 and 2009, which is in line with the signaling theory of Spence (1973). In other words, when firms adopt accounting conservatism as a sign for positive quality, the higher the quality of the business means the less the entity's information risk. This leads to lower WACC. Furthermore, Warad and Al-Debi'e (2017) argued that there is an adverse association between conservatism and cost of capital. However, Hassani et al. (2013) studied the relationship between accounting conservatism and cost of capital for firms listed on the Tehran Stock Exchange during 2001-2009, but found no relationship.

From literature review as shown in Table 2.13, several studies found that accounting conservatism decreased cost of equity capital, cost of debt and weighted average cost of capital. Thus, the hypothesis is that accounting conservatism has a negative direct effect on cost of capital.

Table 2.13 Summary of Studies on Accounting conservatism and Cost of Capital

Independent Variable	Authors	Purpose	Methods	Results
Conservatism - ex ant (Beaver & Ryan, 2000) - ex post (Basu, 1997)	Chan et al. (2009)	To investigate the differences of conditional and unconditional accounting conservatism.	Market: The U.K. Samples: 1,149 firms and 6,790 firm-year observations from 1987 to 1999. Method: Ordinary least squares regression. Dependent variables: Cost of Equity Capital (Ohlson & Juettner-Nauroth, 2005).	Ex-ante conservatism was associated with lower costs of equity capital and that ex-post conservatism was associated with higher costs of equity capital.
Conservatism - Non-operating accruals (Givoly and Hayn (2000b) - Negative earnings skewness (Callen, Segal, & Hope, 2010)	Biddle et al. (2016)	To examine how conditional conservatism affects the cost of equity via the effects of information precision (i.e., more precisely revealing bad news) and information asymmetry.	Market: NYSE, NASDAQ, and AMEX Samples: 62,833 firm-year observations from 1986 to 2008. Method: Ordinary least squares regression. Dependent variables: Cost of Equity Capital - Realized excess stock returns extending the methodology in McNinnis (2010) and Ogneva (2012).	A significantly positive association between conditional conservatism and the cost of equity.

Table 2.13 Summary of Studies on Accounting conservatism and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Conservatism - conditional (Callen et al., 2010)	Garcia Lara et al. (2011)	To investigate the association between conditional conservatism and cost of equity capital.	Market: Compustat and CRSP Samples: 348 monthly cross-sectional regressions from 1976 to 2004. Method: Ordinary least squares regression. Dependent variables: Cost of Equity Capital: - Future excess returns (the raw stock return less the risk-free rate) - Expected rate of return implicit in analysts' forecasts (Francis, LaFond, Olsson, & Schipper, 2004).	Both sets of tests produced corroborative evidence, showing significant negative relation between conditional conservatism and cost of equity capital.
Conservatism - Callen et al. (2010) - Khan and Watts (2009) - Givoly and Hayn (2000a)	Goh et al. (2017)	To investigate whether conditional conservatism reduces information asymmetry differentially for shareholders and debtholders.	Market: COMPUSTAT database Samples: 10,441 firm-year observations during the period 1994–2010. Method: Ordinary least squares regression. Dependent variables: Cost of Capital - Cost of equity based on Easton (2004) - Cost of debt as total interest expense divided by short-term plus long-term debt.	- The use of equity (versus debt) increased with the level of conservatism. - The reduction in the cost of equity associated with conservatism was greater for large equity issuers than for large debt issuers.

Table 2.13 Summary of Studies on Accounting conservatism and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Conservatism based on Ahmed et al. (2002)	Solikhah and Jariyah (2020)	To investigate the effect of block ownership, board of director diversification, duality of the board of directors, independent level of board of commissioner, audit committee effectiveness, and accounting conservatism on the cost of equity.	Market: Indonesia Stock Exchange. Samples: 121 manufacturing companies listed during the period of 2011-2015. Method: Multivariate ordinary least squares (OLS) regressions. Dependent variable: Cost of equity: Expected rate of return by stockholders against their ownership in the company.	Accounting conservatism had a negative effect on the cost of equity.
Conservatism based on Basu (1997)	Li (2015)	To examine the role of conditional accounting conservatism in mitigating the cost of equity and debt capital in an international setting.	Market: 35 countries. Samples: 349 country-year observations from 1991 to 2007. Method: Ordinary least squares regression. Dependent variables: Cost of Capital - Cost of equity is measured as the average implied cost of equity extracted from Claus and Thomas (2001), Gebhardt, Lee, and Swaminathan (2001), Ohlson and Juettner-Nauroth (2005) and Easton (2004) - Cost of debt as the 1-year ahead average interest rate that a firm pays.	Firms domiciled in the countries with more conservative financial reporting systems had lower cost of equity and debt capital.

Table 2.13 Summary of Studies on Accounting conservatism and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Conservatism - Ex post: Basu (1997) and Khan and Watts (2009) - Ex ante: Beaver and Ryan (2000), the Book-to-Market ratio: BTM	Khalifa et al. (2018)	To provide a deeper understanding of the relationship between accounting conservatism and the cost of equity capital.	Market: Firms from 13 Middle East and North Africa countries (MENA). Samples: 3,278 firm-year observations from 2004 to 2009. Method: Ordinary least squares regression. Dependent variables: - Cost of equity capital: estimating for companies in emerging markets by Estrada (2000, 2001, 2004, 2007).	- The ex-ante conservatism is positively associated with the cost of equity capital. - The ex-post conservatism is negatively associated with the cost of equity capital.
Conservatism based on Khan and Watts (2009), and Basu (1997)	Chan and Hsu (2013)	To investigate the extent to which the span of corporate pyramids is associated with higher agency costs of debt, and whether conservatism can moderate the agency cost.	Market: Taiwan Samples: 3,009 observations from 2001 to 2008. Method: Ordinary least squares regression. Dependent variables: Cost of debt is measured by interest expense divided by long-term liabilities.	Firms with more investment layers had higher costs of debt, the higher-layered firms that report more conservative earnings had lower costs of debt.
Conservatism based on Basu (1997)	Hu and Jiang (2018)	To investigate the effect of managerial risk incentives on financial reporting conservatism.	Market: Standard & Poor's ExecuComp, Compustat and CRSP. Samples: 19,269 firm-year for fiscal years from 1993 to 2014. Method: Two-stage regression analysis. Dependent variables: Cost of debt: Yield spread.	The coefficient on the interaction of excessive risk incentives and accounting conservatism was negatively associated with the cost of debt.

Table 2.13 Summary of Studies on Accounting conservatism and Cost of Capital (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Conservatism (Givoly & Hayn, 2000a)	Zare et al. (2013)	To examine the relevance of disclosure, conservatism and their influence on cost of capital.	Market: Tehran Stock Exchange. Samples: 113 firms from 2003 to 2009. Method: Ordinary least squares regression Dependent variables: Weighted Average Cost of Capital.	Accounting conservatism was negatively related with Weighted Average Cost of Capital.
Conservatism (Khan & Watts, 2009)	Warad and Al-Debi'e (2017)	Examining the impact of accounting conservatism and voluntary disclosure on the cost of capital.	Market: Jordan Samples: 260 firms from 2009 to 2013. Method: Panel OLS regression analysis. Dependent variables: Weighted Average Cost of Capital.	Accounting conservatism was negatively related with Weighted Average Cost of Capital.
Conservatism (Basu, 1997)	Hassani et al. (2013)	To study the relationship between accounting conservatism and cost of capital for firms listed on the stock exchange deals.	Market: Tehran Stock Exchange. Samples: 63 companies from 2002 to 2009. Method: Kolmogorov Smirnov test and Pearson correlation test. Dependent variables: WACC, cost of equity capital and Cost of debt.	Accounting conservatism was not correlated with WACC, but it was correlated with cost of equity.

2.3.14 Accounting Conservatism as a Mediating Effect Affecting the Relationship between Independent Variables and Dependent Variables

Accounting conservatism is a mechanism that connects corporate governance with effective performance. Yun Ren (2014), who studied firms in the Shanghai and Shenzhen stock exchanges from 2007 to 2010, found that corporate governance affected firm performance, while effectiveness of corporate governance led to more conservatism. Thus, firms with more conservatism tend to have better firm performance. Some studies used accounting conservatism together with regulatory mechanism to reduce information asymmetry, such as Kachouri and Jarboui (2017), who studied non-financial firms listed Tunisian companies from 2006 to 2013. They found that the corporate governance index is significantly and positively associated with accounting conservatism. Firms with more conservatism can reduce information asymmetry, and earnings management.

The study on the mediating effect of conservatism on the relationship between information asymmetry and earnings management conducted by Kamyabi and Noorali (2016a), who focused on the companies listed in Tehran Stock Exchange from 2009-2013 revealed that conservatism had a mediator effect between information asymmetry and earnings management. In addition, there were studies on the use of accounting conservatism and its relationship between audit committee and external auditor with firm performance. Khan, Khan, and Khan (2019), who studied listed firms in Malasia from 2004-2013, found that accrual-based measure of conservatism mediated the relationship between (a) audit committee effectiveness and market-based firms' performance, and (b) external auditor quality and market-based firms' performance.

Accounting conservatism can help firms with risk-averse management to have lower cost of capital of the business according to Hu and Jiang (2018), who studied Standard & Poor's ExecuComp database from 1993 to 2014. They found that excessive risk incentives were positively associated with the accounting conservatism, and also found a positive relationship between both anticipated and unexpected risk incentives and cost of debt. However, when firms increase their accounting conservatism, only the relation between cost of debt and unexpected risk incentives is weakened since creditors use conservative financial reports to prevent future unanticipated risk actions caused by managers.

However, no study found that accounting conservatism can be used as a mediating effect between the audit committee and earnings quality according to Kiryanto (2014), who studied listed firms on the Jakarta Stock Exchange from 2004 to 2006, and found that the number and independence of the audit committee had a significantly positive effect on the earnings response coefficient. The characteristics of the members of the audit committee as a whole had no effect at accounting conservatism. The accounting conservatism also positively affects earnings response coefficient, but not significantly. Thus, accounting conservatism did not mediate the relationship between audit committee characteristics and earnings response coefficient.

Interestingly, Anis and Utama (2016) used conservatism as an independence variable to test indirect effect of conditional conservatism on cost of debt through mediation role of Corporate Social Responsibility Disclosure (CSR) in manufacturing firms listed on Indonesia Stock Exchange during 2011- 2014, and found no direct relationship between conservatism and cost of debt, and no direct relationship between conservatism and CSR which was the mediator variable. However, audit committee mechanism as a control variable had a positive relationship with CSR even though CSR had a negative effect on cost of debt.

From the literature review, accounting conservatism is qualified as a mediating effect that indirectly manipulates independent variables to affect dependent variables as presented in Table 2.14. Thus, the research hypothesis is that board structure, board activity, compensation, shareholder structure, and audit committee have a negative indirect effect on cost of capital through mediation role of accounting conservatism.

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables

Independent Variable	Authors	Purpose	Methods	Results
Characteristics of board: - Board independence - Board size - Board meetings - CEO non-duality - Top management Turnover - Supervisory board Independence - Supervisory board size - Supervisory board Meetings - Supervisory board qualification	Ren (2014)	To examine the effect of the board of directors and supervisory board on conservatism and firm performance.	Market: Shanghai and Shenzhen stock exchanges Samples: 969 firms from 2007 to 2010. Method: Panel data methodology. Dependent variables: - Return on equity (ROE) - Net profit margin (PM) - Market to book ratio (MTB) Mediators: - Accrual-based (ACCR) conservatism (Givoly & Hayn, 2000a) - Asymmetric timeliness (AT) conservatism (Basu, 1997).	Board Characteristics was related to ACCR conservatism - Top management turnover - Supervisory board qualification Board Characteristics were related to AT conservatism - Board independence - Smaller supervisory board size - Supervisory qualification AT conservatism positive effects on PM ROE and PM was related to Board Characteristics - Smaller board size - Board meetings - Top management turnover - Smaller supervisory board size (PM) - Supervisory qualification (ROE) MTB was related to Board Characteristics - board independence - CEO non-duality - supervisory qualification

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Audit committee effectiveness - Audit committee independence - Audit committee expertise - Audit committee diligence External auditor quality - Auditor's independence - Auditor's specialization - Auditor's brand name	Khan et al. (2019)	To investigate whether the accrual-based conservatism mediate the relationship between audit committee and external auditor quality factors with market-based firms' performance.	Market: Malaysia Samples: 543 of the companies listed from 2004 to 2013. Method: Panel data methodology and Structural Equation Modeling (SEM) Mediator variable: - Accrual-based conservatism (Ball & Shivakumar, 2005). Dependent variables: - Firms' performance (Tobin's Q ratio).	Accounting conservatism mediated the relationship between - Audit committee effectiveness and market-based firm performance - External auditor quality and market-based firms' performance.
Excessive risk incentives	Hu and Jiang (2018)	To investigate the effect of managerial risk incentives on financial reporting conservatism.	Market: Standard & Poor's ExecuComp, Compustat and CRSP Samples: 19,269 firm-year from 1993 to 2014. Method: 2-stage regression analysis. Moderator variable: Conservatism (Basu, 1997) Dependent variables: Cost of debt: Yield spread.	- A positive association between managerial risk incentives and accounting conservatism. - A positive relation between both anticipated and unexpected risk incentives and cost of debt. - The relationship with unexpected risk incentives and cost of debt is weakened by accounting conservatism.

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
<p><i>Audit committee characteristics</i></p> <ul style="list-style-type: none"> - Audit committee size - Audit committee independence - Audit committee expertise - Audit committee activity 	Kiryanto (2014)	To develop conceptual framework of association between audit committee characteristics and earnings quality.	<p>Market: Jakarta Stock Exchange.</p> <p>Samples: 151 companies listed from 2004 to 2006.</p> <p>Method: Path Analysis (Path Analysis) with Linear Structural Relations program (LISREL).</p> <p>Mediator variable:</p> <ul style="list-style-type: none"> - Accrual-based conservatism - Earnings management (Modified Jones) <p>Dependent variables:</p> <ul style="list-style-type: none"> - Earnings response coefficients. 	<ul style="list-style-type: none"> - Audit committee size and independence had a significantly positive effect on the earnings response coefficient. - All the characteristics of the audit committee had no effect on accounting conservatism. - The accounting conservatism also had a positive affect on earnings response coefficient, but not significantly.

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
Conservatism based on Basu (1997)	Anis and Utama (2016)	<ul style="list-style-type: none"> - To examine direct effect of conditional conservatism on cost of debt, - To examine indirect effect of conditional conservatism on cost of debt through mediation role of corporate social responsibility disclosure. 	<p>Market: Indonesia Stock Exchange</p> <p>Samples: 19,269 firm-year from 2011 to 2014.</p> <p>Method: Ordinary least square and two stages least square (TSLS) with Pooled Least Square (PLS).</p> <p>Dependent variables: Cost of debt: The ratio of firms interest expense and finance charge in year t+1 to average interest bearing debt for bank loan outstanding during years t.</p> <p>Endogenous variable:</p> <ul style="list-style-type: none"> - Corporate social responsibility disclosure: checklist of CSR disclosure published on annual report. 	<ul style="list-style-type: none"> - Conservatism had no directly significant effect on cost of debt, - Conservatism had no significant effect on CSRD, while audit committee mechanism (control variables) had a positive effect on CSRD, - CSRD had a significant mediation role, where endogeneity variable (fitted value of CSR disclosure) had a negative effect on cost of debt.

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Independent director - Managerial Ownership	Zulfikar, Atuti, and Ismail (2020)	To analyze the mediating role of accounting conservatism on the influence of independent directors and managerial ownership on financial performance.	Market: Indonesia Stock Exchange Samples: 174 companies for fiscal years from 2012 to 2016. Method: Multiple regression. Dependent variables: Financial Performance: ROA. Mediator: Accounting conservatism.	- Accounting conservatism was a mediating variable on the effect of managerial ownership and financial performance - Accounting conservatism was a mediating variable on the influence of independent directors, but financial performance was not proven.
Audit committee characteristics	Jintawattanagul (2015)	To investigate the mediating effects of accrual quality on the relationship between audit committee characteristics and the cost of capital.	Market: Stock Exchange of Thailand. Samples: 272 companies for fiscal years from 2010 to 2012. Method: Multiple regression. Dependent variables: Cost of capital: Cost of equity and cost of debt. Mediator: Accounting conservatism.	- Mediate accounting conservatism on the effect of audit committee (multiple directorships, size, and age) and cost of capital. - Accounting conservatism was not mediate of association between audit committee with (account expert, legal expert, tenure, female, independence, meeting and age) and cost of capital.

Table 2.14 Summary of Studies on Conservatism (Mediator) Manipulating Independent Variables to Affect Dependent Variables (Cont.)

Independent Variable	Authors	Purpose	Methods	Results
- Audit committee ownership	Habib, Wu, and Bhuiyan (2021)	To investigate whether audit committee ownership (consisting of both equity holdings and option holdings) is associated with the cost of equity capital.	<p>Market: Australia Stock Exchange.</p> <p>Samples: 2,825 firm-year observations and 551 unique firms for fiscal years from 2001 to 2015.</p> <p>Method: Multiple regression</p> <p>Dependent variables: cost of equity capital: PEG ratio (Easton, 2004)</p> <p>Mediator: conditional conservatism score (C_SCORE) developed by Khan and Watts (2009).</p>	Accounting conservatism did not mediate of association between audit committee ownership and cost of equity capital.
Audit committee	Oktaria (2019)	To examine the effect of corporate governance mechanisms on cost of equity capital with earnings quality as a mediating variable.	<p>Market: Indonesia Stock Exchange</p> <p>Samples: 91 manufacturing firms during 2017.</p> <p>Method: Multiple regression.</p> <p>Dependent variables: cost of equity capital: CAPM.</p> <p>Mediator: Quality of earnings.</p>	The quality of earnings mediating full influenced of the composition of the size of the audit committee against the cost of equity capital.

As aforementioned, this chapter presents literature showing the relationship among board structure, board activity compensation, shareholder structure and audit committee were related to cost of capital towards accounting conservatism, the relationship between accounting conservatism and cost of capital, and the relationship between the independent variable and the dependent variable with accounting conservatism as a mediating effect. Surprisingly, the study on the relationship of board structure, board activity, compensation, shareholder structure and audit committee towards cost of capital through accounting conservatism has not been conducted. Thus, it is essential to find such relationship in this research. The research framework is as follows:

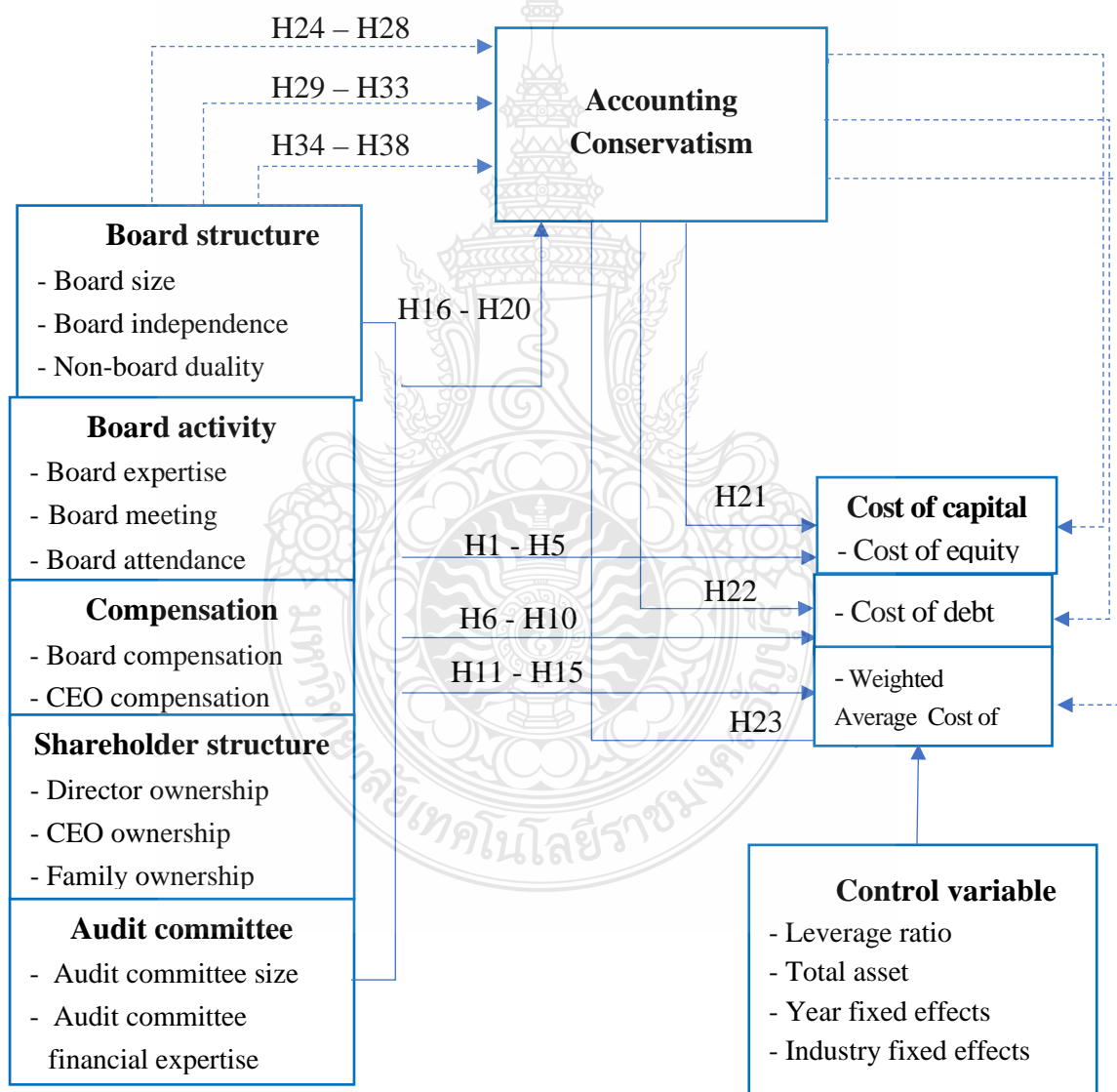


Figure 2.1 Research Framework

CHAPTER 3

RESEARCH METHODOLOGY

According to the objective of this study which is to find the results of the mediating effect of accounting conservatism on the relationship between corporate governance and cost of capital, quantitative research is used in order to test the direct effect of corporate governance on cost of capital, the direct effect of corporate governance on accounting conservatism, the direct effect of accounting conservatism on cost of capital, the indirect effect of corporate governance on cost of capital through mediation role of accounting conservatism.

3.1 Scope of Study

3.1.1 Data and Sources of Data

The population used in this research are 789 firms listed on the Stock Exchange of Thailand (SET) and Market for Alternative Investment (mai) from 2018 to 2019, as of June 18, 2020 (The Stock Exchange of Thailand, 2020). The data of each firm are used are data analysis unit.

3.1.2 Sampling

Listed firms that are selected as the sample in this study exclude:

3.1.1.1 Firms listed on the Market for Alternative Investment (mai) since the mai market requires at least 50 million baht of paid-up capital while the Stock Exchange of Thailand requires at least 300 million baht of paid-up capital. Thus, firms listed in mai may affect data analysis,

3.1.1.2 Firms in the financial business group since their operational and financial structures are different from other business groups,

3.1.1.3 Delisted firms on the Stock Exchange of Thailand since they are unable to trade securities on the stock exchange,

3.1.1.4 Firms in rehabilitation or firms that shall revise their financial statements due to the order of SEC. The trading activities on the stock exchange of this firms will be temporarily suspended until they are rehabilitated, or their financial statements are completely corrected and resubmitted, and

3.1.1.5 Listed firms on the stock exchange with unavailable or inadequate historical data relevant to accounting conservatism, corporate governance, and financial reports.

Thus, firms that meet the criteria, and are suitable to be analyzed in the study on the mediating effect of accounting conservatism on the relationship between corporate governance and cost of capital are presented in Table 3 as follows:

Table 3.1 Sample Size

	Year 2019	Year 2018
	(Firms)	(Firms)
All listed companies	789	789
Excluding		
Listed firms in MAI	164	164
Firms in financials (50) and Property Fund (58)	108	108
Delisted firms	7	7
Firms in rehabilitation	5	5
Firms with unavailable or inadequate accounting conservatism, corporate governance, and financial data.	35	31
Firm with the highest and lowest accounting conservatism value and cost of capital at 2%.	19	19
Total Sample	451	455

SOURCE: List of firms listed on the Stock Exchange of Thailand, the Stock Exchange of Thailand, 2020.

3.2 Research Methodology

Firstly, form the conceptual framework (Figure 3) based on the concepts, the theories, and the related research results as reviewed in Chapter 2 in order to create a preliminary conceptual framework. The framework consists of four main variables as follows:

3.2.1 Independent Variables: corporate governance according to Corporate Governance Code for Listed Companies 2017: CG Code, which consists of board structure, board activity, compensation, shareholder structure, and audit committee,

3.2.2 Control Variables consist of leverage ratio, total asset, year fixed effects, and industry fixed effects,

3.2.3 Mediated Variable: accounting conservatism according to Basu (1997), and

3.2.4 Dependent variables: cost of capital which consist of cost of equity according to CAPM, Cost of debt, and Weighted Average Cost of Capital.

Secondly, create a form to collect the proxy data of corporate governance, accounting conservatism, and cost of capital.

Thirdly, collect the data from the annual registration statement (Form 56-1), and the annual financial statements of the firms listed on the Stock Exchange of Thailand from 2018 to 2019.

Fourthly, find the value of accounting conservatism based on the concept of Basu (1997) from each firm during 5 previous years with rolling regressions technique. For example, to obtain the value of accounting conservatism of the sample in 2018, the data from 2014 to 2018 will be used to calculate.

Fifthly, find the BETA (B_i) by calculating the covariance between the return on securities and the market and the variance in the return on the market (O'Hanlon & Steele, 2000).

Lastly, analyze the data to explain the influence of corporate governance on accounting conservatism and cost of capital.

3.3 Data Collection

Secondary data based on quantitative research methods, by collecting information related to corporate governance from the annual registration statement (Form 56-1) and the annual report of firms listed on the Stock Exchange of Thailand, accounting conservatism and cost of capital from the Company's annual financial statements available on the website of the Stock Exchange of Thailand and the SET Market Analysis and Reporting Tool (SETSMART) is used in this study.

The collected data will be analyzed by using multiple regression to test 5 assumptions to consider whether the data was normally distributed. In case, multicollinearity occurs from the analysis, data transformation by the natural log (ln) method in variables with irregular distribution will be used. The test results will be shown with the low tolerance value, or toward, or near to 0, and also not higher than 10 of VIF value. Thus, multicollinearity of independent variables will not occur. Multiple regressions will be used for further statistical significance tests on the effect of independent variables on dependent variables.

3.4 Research Model

This study investigates the effect of corporate governance on cost of capital through mediation role of accounting conservatism by multiple regression models as follows:

3.4.1 Model Test: the Effect of Corporate Governance on Cost of Capital

The effect of corporate governance on cost of equity will be examined. The hypotheses and the regression model are as follows:

H1: There is a negative effect of board structure on cost of equity.

H1a: There is a negative effect of board size on cost of equity.

H1b: There is a negative effect of board independence on cost of equity.

H1c: There is a negative effect of non-board duality on cost of equity.

H2: There is a negative effect of board activity on cost of equity.

H2a: There is a negative effect of board expertise on cost of equity.

H2b: There is a negative effect of board meeting on cost of equity.

H2c: There is a negative effect of board attendance on cost of equity.

H3: There is a negative effect of compensation on cost of equity.

H3a: There is a negative effect of board compensation on cost of equity.

H3b: There is a negative effect of CEO compensation on cost of equity.

H4: There is a negative effect of shareholder structure on cost of equity.

H4a: There is a negative effect of director ownership on cost of equity.

H4b: There is a negative effect of CEO ownership on cost of equity.

H4c: There is a negative effect of family ownership on cost of equity.

H5: There is a negative effect of Audit committee on cost of equity.

H5a: There is a negative effect of audit committee size on cost of equity.

H5b: There is a negative effect of audit committee with financial expertise on cost of equity.

$$\begin{aligned} Ke_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\ & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\ & \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \\ & \beta_k Year\ dummy + \varepsilon \end{aligned} \quad (Model\ 1)$$

Model 1 was employed to test hypotheses 1a-1c, 2a-2c, 3a-3b, 4a-4c, and 5a-5b, as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

The effect of corporate governance on cost of debt will be examined. The hypotheses and the regression model are as follows:

H6: There is a negative effect of board structure on cost of debt.

H6a: There is a negative effect of board size on cost of debt.

H6b: There is a negative effect of board independence on cost of debt.

H6c: There is a negative effect of non-board duality on cost of debt.

H7: There is a negative effect of board activity on cost of debt.

H7a: There is a negative effect of board expertise on cost of debt.

H7b: There is a negative effect of board meeting on cost of debt.

H7c: There is a negative effect of board attendance on cost of debt.

H8: There is a negative effect of compensation on cost of debt.

H8a: There is a negative effect of board compensation on cost of debt.

- H8b: There is a negative effect of CEO compensation on cost of debt.
- H9: There is a negative effect of shareholder structure on cost of debt.
- H9a: There is a negative effect of director ownership on cost of debt.
- H9b: There is a negative effect of CEO ownership on cost of debt.
- H9c: There is a negative effect of family ownership on cost of debt.
- H10: There is a negative effect of audit committee on cost of debt.
- H10a: There is a negative effect of audit committee size on cost of debt.
- H10b: There is a negative effect of audit committee with financial expertise on cost of debt.

$$\begin{aligned}
 Kd_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\
 & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\
 & \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
 & \beta_k \text{Year dummy} + \varepsilon
 \end{aligned}
 \tag{Model 2}$$

Model 2 was employed to test hypotheses 6a-6c, 7a-7c, 8a-8b, 9a-9c, and 10a-10b, as the main issues of test. There are signs and significance of the coefficient of variables that are of interest.

The effect of corporate governance on Weighted Average Cost of Capital (WACC) will be examined. The hypotheses and the regression model are as follows:

- H11: There is a negative effect of Board structure on WACC.
- H11a: There is a negative effect of board size on WACC.
- H11b: There is a negative effect of board independence on WACC.
- H11c: There is a negative effect of non-board duality on WACC.
- H12: There is a negative effect of Board activity on WACC.
- H12a: There is a negative effect of board expertise on WACC.
- H12b: There is a negative effect of board meeting on WACC.
- H12c: There is a negative effect of board attendance on WACC.
- H13: There is a negative effect of compensation on WACC.
- H13a: There is a negative effect of board compensation on WACC.
- H13b: There is a negative effect of CEO compensation on WACC.

H14: There is a negative effect of shareholder structure on WACC.

H14a: There is a negative effect of director ownership on WACC.

H14b: There is a negative effect of CEO ownership on WACC.

H14c: There is a negative effect of family ownership on WACC.

H15: There is a negative effect of audit committee on WACC.

H15a: There is a negative effect of audit committee size on WACC.

H15b: There is a negative effect of audit committee with financial expertise on WACC.

$$\begin{aligned} WACC_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\ & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\ & \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \\ & \beta_k \text{Year dummy} + \varepsilon \end{aligned} \quad (\text{Model 3})$$

Model 3 was employed to test hypotheses 11a-11c, 12a-12c, 13a-13b, 14a-14c, and 15a-15b, as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

3.4.2 Model Test: the Effect of Corporate Governance on Accounting Conservatism

The effect of corporate governance on accounting conservatism will be examined.

The hypotheses and the regression model are as follows:

H16: There is a positive effect of board structure on accounting conservatism.

H16a: There is a positive effect of board size on conservatism.

H16b: There is a positive effect of board independence on conservatism.

H16c: There is a positive effect of non-board duality on conservatism.

H17: There is a positive effect of board activity on accounting conservatism.

H17a: There is a positive effect of board expertise on conservatism.

H17b: There is a positive effect of board meeting on conservatism.

H17c: There is a positive effect of board attendance on conservatism.

H18: There is a positive effect of compensation on accounting conservatism.

H18a: There is a positive effect of board compensation on conservatism.

H18b: There is a positive effect of CEO compensation on conservatism.

H19: There is a positive effect of shareholder structure on accounting conservatism.

H19a: There is a positive effect of director ownership on conservatism.

H19b: There is a positive effect of CEO ownership on conservatism.

H19c: There is a positive effect of family ownership on conservatism.

H20: There is a positive effect of audit committee on accounting conservatism.

H20a: There is a positive effect of audit committee size on conservatism.

H20b: There is a positive effect of audit committee with financial expertise on conservatism.

$$\begin{aligned}
 CON_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\
 & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\
 & \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
 & \beta_k \text{Year dummy} + \varepsilon
 \end{aligned}
 \tag{Model 4}$$

Model 4 was employed to test hypotheses 16a-16c, 17a-17c, 18a-18b, 19a-19c, and 20a-20b, as the main issues of the test. There are the signs and significance of the coefficient of variables that are of interest.

3.4.3 Model Test: the Effect of Accounting Conservatism on Cost of Capital

The effect of Accounting Conservatism on Cost of equity will be examined. The hypotheses and the regression model are as follows:

H21: There is a negative effect of accounting conservatism on cost of equity.

$$\begin{aligned}
 Ke_{i,t} = & \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
 & \beta_k \text{Year dummy} + \varepsilon
 \end{aligned}
 \tag{Model 5}$$

Model 5 was employed to test hypotheses 21 as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

The effect of accounting conservatism on cost of debt will be examined. The hypotheses are the regression model are as follows:

H22: There is a negative effect of accounting conservatism on cost of debt.

$$Kd_{i,t} = \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 6})$$

Model 6 was employed to test hypotheses 22 as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

The effect of accounting conservatism on Weighted Average Cost of Capital (WACC) will be examined. The hypotheses are the regression model are as follows:

H23: There is a negative effect of accounting conservatism on WACC.

$$WACC_{i,t} = \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 7})$$

Model 7 was employed to test hypotheses 23 as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

3.4.4 Model Test: the Indirect Effect of Corporate Governance on Cost of Equity Through Accounting Conservatism

The indirect effect of corporate governance on cost of equity through mediation role of accounting conservatism will be examined. The hypotheses and the regression model are as follows:

H24: There is a negative indirect effect of board structure on cost of equity through accounting conservatism.

H24a: There is a negative indirect effect of board size on cost of equity through accounting conservatism.

H24b: There is a negative indirect effect of board independence on cost of equity through accounting conservatism.

H24c: There is a negative indirect effect of non-board duality on cost of equity through accounting conservatism.

H25: There is a negative indirect effect of board activity on cost of equity through accounting conservatism.

H25a: There is a negative indirect effect of board expertise on cost of equity through accounting conservatism.

H25b: There is a negative indirect effect of board meeting on cost of equity through accounting conservatism.

H25c: There is a negative indirect effect of board attendance on cost of equity through accounting conservatism.

H26: There is a negative indirect effect of compensation on cost of equity through accounting conservatism.

H26a: There is a negative indirect effect of board compensation on cost of equity through accounting conservatism.

H26b: There is a negative indirect effect of CEO compensation on cost of equity through accounting conservatism.

H27: There is a negative indirect effect of shareholder structure on cost of equity through accounting conservatism.

H27a: There is a negative indirect effect of director ownership on cost of equity through accounting conservatism.

H27b: There is a negative indirect effect of CEO ownership on cost of equity through accounting conservatism.

H27c: There is a negative indirect effect of family ownership on cost of equity through accounting conservatism.

H28: There is a negative indirect effect of audit committee on cost of equity through accounting conservatism.

H28a: There is a negative indirect effect of audit committee size on cost of equity through accounting conservatism.

H28b: There is a negative indirect effect of audit committee with financial expertise on cost of equity through accounting conservatism.

$$\begin{aligned} Ke_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\ & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\ & \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j \text{Industry dummy} + \\ & \beta_k \text{Year dummy} + \varepsilon \end{aligned} \quad (\text{Model 8})$$

Model 8 was employed to test hypotheses 24a-24c, 25a-25c, 26a-26b, 27a-27c, and 28a-28b, as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

The effect of corporate governance on cost of debt through mediation role of accounting conservatism will be examined. The hypotheses and the regression model are as follows:

H29: There is a negative indirect effect of board structure on cost of debt through accounting conservatism.

H29a: There is a negative indirect effect of board size on cost of debt through accounting conservatism.

H29b: There is a negative indirect effect of board independence on cost of debt through accounting conservatism.

H29c: There is a negative indirect effect of non-board duality on cost of debt through accounting conservatism.

H30: There is a negative indirect effect of board activity on cost of debt through accounting conservatism.

H30a: There is a negative indirect effect of board expertise on cost of debt through accounting conservatism.

H30b: There is a negative indirect effect of board meeting on cost of debt through accounting conservatism.

H30c: There is a negative indirect effect of board attendance on cost of debt through accounting conservatism.

H31: There is a negative indirect effect of compensation on cost of debt through accounting conservatism.

H31a: There is a negative indirect effect of board compensation on cost of debt through accounting conservatism.

H31b: There is a negative indirect effect of CEO compensation on cost of debt through accounting conservatism.

H32: There is a negative indirect effect of shareholder structure on cost of debt through accounting conservatism.

H32a: There is a negative indirect effect of director ownership on cost of debt through accounting conservatism.

H32b: There is a negative indirect effect of CEO ownership on cost of debt through accounting conservatism.

H32c: There is a negative indirect effect of family ownership on cost of debt through accounting conservatism.

H33: There is a negative indirect effect of audit committee on cost of debt through accounting conservatism.

H33a: There is a negative indirect effect of audit committee size on cost of debt through accounting conservatism.

H33b: There is a negative indirect effect of audit committee with financial expertise on cost of debt through accounting conservatism.

$$Kd_{i,t} = \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 9})$$

Model 9 was employed to test hypotheses 29a-29c, 30a-30c, 31a-31b, 32a-32c, and 33a-33b, as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

The effect of corporate governance on Weighted Average Cost of Capital (WACC) through mediation role of accounting conservatism will be examined. The hypotheses and the regression model are as follows:

H34: There is a negative indirect effect of board structure on Weighted Average Cost of Capital through accounting conservatism.

H34a: There is a negative indirect effect of board size on Weighted Average Cost of Capital through accounting conservatism.

H34b: There is a negative indirect effect of board independence on Weighted Average Cost of Capital through accounting conservatism.

H34c: There is a negative indirect effect of non-board duality on Weighted Average Cost of Capital through accounting conservatism.

H35: There is a negative indirect effect of board activity on Weighted Average Cost of Capital through accounting conservatism.

H35a: There is a negative indirect effect of board expertise on Weighted Average Cost of Capital through accounting conservatism.

H35b: There is a negative indirect effect of board meeting on Weighted Average Cost of Capital through accounting conservatism.

H35c: There is a negative indirect effect of board attendance on Weighted Average Cost of Capital through accounting conservatism.

H36: There is a negative indirect effect of compensation on Weighted Average Cost of Capital through accounting conservatism.

H36a: There is a negative indirect effect of board compensation on Weighted Average Cost of Capital through accounting conservatism.

H36b: There is a negative indirect effect of CEO compensation on Weighted Average Cost of Capital through accounting conservatism.

H37: There is a negative indirect effect of shareholder structure on Weighted Average Cost of Capital through accounting conservatism.

H37a: There is a negative indirect effect of director ownership on Weighted Average Cost of Capital through accounting conservatism.

H37b: There is a negative indirect effect of CEO ownership on Weighted Average Cost of Capital through accounting conservatism.

H37c: There is a negative indirect effect of family ownership on Weighted Average Cost of Capital through accounting conservatism.

H38: There is a negative indirect effect of audit committee on Weighted Average Cost of Capital through accounting conservatism.

H38a: There is a negative indirect effect of audit committee size on Weighted Average Cost of Capital through accounting conservatism.

H38b: There is a negative indirect effect of audit committee with financial expertise on Weighted Average Cost of Capital through accounting conservatism.

$$\begin{aligned}
WACC_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\
& \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\
& \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
& \beta_k \text{Year dummy} + \varepsilon
\end{aligned}
\tag{Model 10}$$

Model 10 was employed to test hypotheses 34a-34c, 35a-35c, 36a-36b, 37a-37c, and 38a-38b, as the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

3.5 Variables and Measurement

3.5.1 Independent Variables

3.5.1.1 Board Structure

- (1) Board size is measured by the total number of board members.
- (2) Board independence is measured by the ratio of independent directors to number of board of directors.
- (3) Non-board duality coded as 1 if the positions of CEO and chairman are not occupied by same person, or 0 otherwise.

3.5.1.2 Board activity

- (1) Board expertise is measured by the number of other firms in which a director is a part of the board.
- (2) Board Meeting is measured by the number of board meetings per year.
- (3) Board attendance is measured by percentage of the attendance of each director.

3.5.1.3 Compensation

- (1) Board compensation is measured by the natural logarithm of monetary compensation paid to all directors.
- (2) CEO compensation is measured by the natural logarithm of monetary compensation paid to the CEO of the firm.

3.5.1.4 Shareholder Structure

(1) Director ownership is measured by a percentage of shares held by director.

(2) CEO ownership is measured by a percentage of shares held by CEO.

(3) Family ownership is measured by a percentage of shares held by a private individual shareholder, who might be a founder and/or a member (s) of the family who manages (as a CEO), control (as a member of the board of directors, a director-chairman) in the firm.

3.5.1.5 Audit committee

(1) Audit committee size is measured by the total number of audit committee.

(2) Audit committee with financial expertise is measured by the total number of audit committee financial expertise.

3.5.2 Control Variables

3.5.2.1 Leverage ratio is measured by total liability divided by total equity.

3.5.2.2 Total asset is measured by the natural logarithm of total assets.

3.5.3 Year and Industry Fixed Effect

3.5.3.1 Year fixed effects: Year18 = a dummy variable coded 1 if firm i is in year 2018 and 0 otherwise, and Year19 = a dummy variable coded 1 if firm i is in year 2019, and 0 otherwise.

3.5.3.2 Industry fixed effects: AGR = a dummy variable coded 1 if firm i is in the industry of Agro & Food Industry and 0 otherwise, COS = a dummy variable coded 1 if firm i is in the industry of consumer products and 0 otherwise, IND = a dummy variable coded 1 if firm i is in the industry of industrials and 0 otherwise, PRO = a dummy variable coded 1 if firm i is in the industry of property and construct and 0 otherwise, RES = a dummy variable coded 1 if firm i is in the industry of resources and 0 otherwise, SER = a dummy variable coded 1 if firm i is in the industry of services and 0 otherwise, and TEC = a dummy variable coded 1 if firm I is in the industry of technology and 0 otherwise.

3.5.4 Mediated Variable

Accounting Conservatism

Ex post conservatism or conditional conservatism according Basu (1997) with a rigorous audit for the recognition of profits and losses is applied in this study (Basu, 1997; Watts, 2003). Under this requirement, economic losses are recognized in earnings faster than economic gains. Thus, conditional conservatism is appropriate to assess timeliness reflecting the impact of various crises on the firm performance. Previous studies indicated that ex post conservatism or conditional conservatism considerably improve the functioning of equity markets through providing market operators with valuable accounting information (Gietzmann & Trombetta, 2003; Guay & Verrecchia, 2017; Suijs, 2008). Basu (1997) measured accounting conservatism of the gains (good news) and losses (bad news), together with the returns, known as the “reverse regression of earnings on returns” as follows:

$$\frac{E_{it}}{P_{it-1}} = \beta_0 + \beta_1 DR_{it} + \beta_2 R_{it} + \beta_3 R_{it} * DR_{it} + \varepsilon_{it}$$

- Where E_{it} = Earnings per share of entity i in fiscal year t
 P_{it-1} = price per share of firm i at the end of the fiscal year t-1
 R_{it} = The rate of return per share of firm i at the end of the fiscal year t-1 to the end of the fiscal year t can be found from
 $R_{it} = \frac{\text{Dividend} + \text{Change in Securities Price}}{\text{Securities Price at the Beginning of the Period}}$
 DR_{it} = Dummy variable is 1, $R_{it} < 0$, and equals 0 if $R_{it} \geq 0$

This research uses the 5-Year Rolling Regressions technique to obtain the firm-level accounting conservatism based on the concept suggested by Basu (1997). For example, the conservatism value of Company A in 2018 is calculated by using bad news coefficients obtained from Multiple Regression from 2014 – 2018 of Company A. In addition, the conservatism value of Company A in 2019 is calculated by using bad news coefficients obtained from Multiple Regression from 2015 – 2019 of Company A (Boonlert-U-Thai and Phakdee (2018))

3.5.5 Dependent Variables

3.5.5.1 Cost of Equity

According to the fact that investors need a tool to analyze to make an investment decision and manage their portfolio, the Dividend Discount Model (DDM) and the Capital Asset Pricing Model (CAPM) were introduced as the two strategies to value the investments.

The Dividend Discount Model (DDM) is based on the current value of stock on the total future value of their dividends. To value a stock using DDM, the information relevant to the announced dividends of the firm with detailed financial projections are gathered to measure the dividend value over the next several years. The model's mathematical principles are utilized to decrease the future dividend value to its present value, which results in a current stock value. Since the stock value is calculated using dividends in this model, this method cannot be applied to all stocks, especially those that do not pay a dividend.

Even though there are several methods to calculate equity cost, the most accepted one is Capital Asset Pricing Model (CAPM) (Lintner, 1965; Sharpe, 1964; Treynor, 1962). According to Sharpe (1964), CAPM is more suitable to measure shareholders' rate of return. CAPM is based on the evaluation on factors: the expected rate of return, the risk-free rate of return, the market's average rate of return and the sensitivity of the investment to market conditions. Sensitivity is measured based on how past performance compared to the market. Thus, investors can use CAPM to evaluate their portfolio or individual investments to the market and determine whether there is high risk or underperforming.

In fact, CAPM and DDM can be jointly used by investors. CAPM is most used in DDM calculations to find how to discount future dividends and calculate the current value. CAPM is more extensively applicable than DDM. Investors cannot use DDM if their investments are not dividend-paying stocks, but CAPM can be used on any type of investment. CAPM has an advantage even on specific stocks since it considers more factors than just dividends. As a result, CAPM is used in this study to calculate a company's cost of equity capital.

The CAPM model is a securities pricing model with a comparative assessment of forecast-to-return and financial assets' risk-return relationship. The model is presented as follows:

$$E(R_{i,t}) = R_{f,t} + B_i (E(R_{m,t}) - R_{f,t})$$

- Where
- $E(R_{i,t})$ = The expected rate of return of a financial asset i
 - $R_{f,t}$ = Return on risk-free assets, the yield on three-month Thai Treasury bills serving as a proxy for the risk-free rate. (e.g. Gai and Vause (2006), Mukherji (2011) and J. Chen (2021))
 - B_i = Beta coefficient as a systematic measure of the non-dispersible risk of an asset i
 - $E(R_{m,t})$ = The average rate of return on an asset with the expected risk of exposure, known as the market return.

The relationship between expected rate of return ($E(R_{i,t})$) and asset risk (B_i) that is nondiversifiable component is known as “systemic risk”. This systematic risk uses the Beta Coefficient (BETA) of the financial asset as a proxy. BETA can be measured as follows:

(B_i): BETA can be collected by available information on the website of the Stock Exchange of Thailand. BETA can be assessed based on historical data by estimating from the coefficient showing the change in the return on investment and compared with the change in the market rate of return. The value can be used as a proxy of BETA, or calculate (B_i) by finding the covariance between the return from securities and the market to the variance of the market return (O'Hanlon & Steele, 2000). The formula is presented as follows:

$$\beta_1 = \frac{\text{Cov}(R_i, R_m)}{\text{Var}(R_m)}$$

Where

$\text{Cov}(R_i, R_m)$ = The covariance between expected return from securities i and from market m, by multiplying $(R_{it} - \bar{R}_{it})$ and $(R_{mt} - \bar{R}_{mt})$.

$\text{Var}(R_m)$ = The variance of the expected return from general securities in the market can be calculated by $(R_{mt} - \bar{R}_{mt})^2$

R_{it} = The actual rate of return on securities i at the end of t is calculated by

$$R_{it} = \frac{P_{it} - P_{i(t-1)} + D_t}{P_{i(t-1)}}$$

P_{it} = Closing price of securities i at the end of the day t

$P_{i(t-1)}$ = Closing price of securities i at the end of the day t-1

D_t = Dividends paid during t

\bar{R}_{it} = The average rate of return on securities i at the end of day t can be calculated by

$$\bar{R}_{it} = \frac{\sum_{t=1}^{n-1} (R_{it})}{n-1}$$

n = Return on securities calculated by daily data

R_{mt} = The actual rate of return on securities at the end of the day t can be calculated by

$$R_{mt} = \frac{\text{SET}_t - \text{SET}_{t-1}}{\text{SET}_{t-1}}$$

SET_t = Daily stock price index of the market at the time t

SET_{t-1} = Daily stock price index of the market at the time t - 1

R_{mt} = Rate of return on securities in the market at the end of the day t can be calculated by

$$\bar{R}_{mt} = \frac{\sum_{t=1}^{n-1} (R_{mt})}{n-1}$$

The covariance between the return from securities and the market, and the variance in the return from the market were calculated to obtain (Bi). The (Bi) value of each firm is close to the BETA as presented on the website of the Stock Exchange of Thailand in 2018 and 2019.

In this study, capital increase information is not included to calculate the cost of equity of each company. The capital increase is a method to raise fund from shareholders in order to expand business, pay off debt, clear accumulated losses, and to use as working capital. It can be in the form of right offering (RO), public offering (PO), and private placement (PP). In addition, capital increase can also be in the form of debt-to-equity conversion, and the result of capital increase would affect share dilution, earning-per-share impact, and stock price impact. These issues may be related to the cost of equity of the firm. There are only 29 firms that increased their capital by issuing common stock between 2018 and 2019, five of which are in financial sector, and seven are listed on the MAI market. Thus, there are 17 firms in the sample group used in this study. Between 2018 and 2019, there were 2 firms out of a total of 455 that used debt-to-equity conversion. (Source: <https://capital.sec.or.th/webapp/webnews/searchnews.php>)

3.5.5.2 Cost of Debt

Interest expense for the year was divided by average interest-bearing debt (Chan & Hsu, 2013; Hashim & Amrah, 2016; Hsieh, Shiu, & Chang, 2018; Ongklang, 2016; Shailer & Wang, 2015; Sodan, 2012; Usman et al., 2019)

3.5.5.3 Cost of Capital

Cost of capital can be calculated from the average cost of capital of shareholders and creditors according to the proportion of owners' equity and creditor's equity, or WACC (Weighting Average Cost of Capital) as follows:

$$WACC = W_e * K_e + W_d * K_d * (1-T)$$

Where	W_e	=	Weighted average amount of market value of capital Shareholders' equity/(debt with interest + shareholders' equity)
	W_d	=	Weighted average amount of current cost of debt Debt with interest /(debt with interest + shareholders' equity)
	K_e	=	Cost of equity
	K_d	=	Cost of debt
	T	=	Corporate income tax rate

This research used book value of debt showing financial statement of the firm as an approximation for market value of debt. Unlike equity, the market value of debt does not deviate too far from the book value (Fernandez, 2007). Empirical research usually relies on book value rather than market value of debt. This reliance arises primarily due to the difficulty of obtaining quality estimates of the market value of firm debt. Thus, book value of debt has been suggested to use rather than market value of debt. Sweeney, Warga, and Winters (1997), who compared estimates of capital structure that use book versus market values of debt over the period 1978-1991 in the United States, found that long-term-debt-to-value ratios based on book rather than market values of long-term debt diverge substantially. In fact, differences in book and market capital structure are associated with changes in the level of interest rates. However, the associated problems may not be severe.

Table 3.2 Abbreviations and Variables in Regression Equations

Abbreviations	Variables
Independent Variables	
BSI	Board size
BIN	Board independence
BDU	Non-board duality
BEX	Board expertise
BME	Board meeting
BAT	Board attendance
BCO	Board compensation
CCO	CEO compensation
DOW	Director ownership
COW	CEO ownership
FOW	Family ownership
ASI	Audit committee size
AEX	Audit committee financial expertise
Control Variables	
LEV	Leverage ratio
TAS	Total asset

Table 3.2 Abbreviations and Variables in Regression Equations (Cont.)

Abbreviations	Variables
Industry Fixed Effects	
AGR	Agro & Food Industry
COS	Consumer Products
IND	Industrials
PRO	Property & Construction
RES	Resources
SER	Services
TEC	Technology
Year Fixed Effects	
Y18	Year 2018
Y19	Year 2019
Mediator Variable	
CON	Accounting Conservatism
Dependent Variables	
Ke	Cost of equity
Kd	Cost of debt
WACC	Weighted average cost of capital

3.6 Data Analysis

This quantitative research uses descriptive statistics and hypothesis testing by inferential statistics as follows:

3.6.1 Descriptive Statistics

Reports on corporate governance, accounting conservatism, and cost of capital are used with the statistics, including minimum, maximum, mean, standard deviation, frequency, and percentage. The results are will be presented in the form of values, percentages, and financial ratios.

3.6.2 Inferential Statistics

The statistic used to test the hypotheses regarding the influence of corporate governance on accounting conservatism mediating the cost of capital is the multiple regression analysis. Prior to applying technical statistical methods, outliers must be checked, known as “Case Wise Diagnostics” by examining the highest and lowest value of accounting conservatism, cost of equity, cost of debt and weighted average cost of capital at 2%. If any case wise occurs in any case, the data will be excluded from the analysis in order to prevent testing the sample with a higher-than-normal value, which may distort the relationship of independent variables with dependent variables.

The conditions of the multiple regression analysis will be checked as follows:

3.6.2.1 The mean of the residuals is zero (exogeneity of the independent variables)

3.6.2.2 The residuals are normally distributed. (test of normality)
According to central limit theory, if the sample size is large, the mean of the sample is assumed to have an approximately normal distribution. (Dielman, 1996)

3.6.2.3 The residuals are distributed independently. (autocorrelated) The statistics of Durbin-Watson will be applied to check whether residuals are not correlated when the value of Durbin-Watson is close to 2. In other words, values based on Durbin-Watson must be between 1.5 and 2.5 (Coakes & Steed, 2003).

3.6.2.4 The variance of the residuals are constant. (homoscedasticity)
According to scatter plot, if the residuals distribute and are close to zero, or distribute in a narrow range, it reflects that the variance of the forecast residuals are constant.

3.6.2.5 Each independent variable must be uncorrelated. (multicollinearity)
To check this, tolerance statistics and the variance inflation factor (VIF) will be used. If the tolerance of a variable is close to 1, the variables are independent. However, if the value is close 0, multicollinearity occurs. In case the variance inflation factor is close to 10, the degree of relationship of the independent variables in the multiple regression analysis equation is high, which indicates that multicollinearity has already occurred.

The correlation between two variables can also be tested by using the correlation coefficient between each pair of variables as in the following criteria: (Hinkle, William, & J., 1998)

r reflects the level of relationship.

.90 - 1.00	Very strong correlation
.70 - .90	Strong correlation
.50 - .70	Moderate correlation
.30 - .50	Weak correlation
.00 - .30	Very weak correlation

3.7 Mediation Test

3.7.1 Causal Step Approach

Baron and Kenny (1986) and Frazier, Tix, and Baron (2004) introduced “causal step approach” by using multiple regression analysis, including 4 steps, as presented in Figure 3.1 (A) and (B) as follows:

Step 1: According to Figure 3.1 (A), analyze the regression by creating Model 1. Use Y as the dependent variable, and X as the independent variable. The direct effect size is estimated to show that X influences Y, which is presented by c.

Step 2: According to Figure 3.1 (B), analyze the regression by creating Model 2. Use M as the dependent variable, and X as the independent variable. Forecast the direct effect size a to show that X influences the mediating variable M.

Step 3: According to Figure 3.1 (B), analyze the regression by creating Model 3. Use Y as the dependent variable, and M as the independent variable. X must be controlled to become constant in order to forecast the direct influence of b, which indicates that M influences Y. The results of this analysis are insufficient to prove that M is a real mediating variable since the influence size of b may occur due to X. Thus, it shall be further analyzed.

Step 4: According to Figure 3.1 (B), analyze the regression by creating Model 3. Y is set as the dependent variable, while X is the independent variable and controls the variable M to be constant to estimate the influence of c'. When M is controlled and becomes constant, the direct influence of variable X on Y was reduced (compared to c in Step 1) since the influence of X indirectly influenced Y when M is a mediating variable.

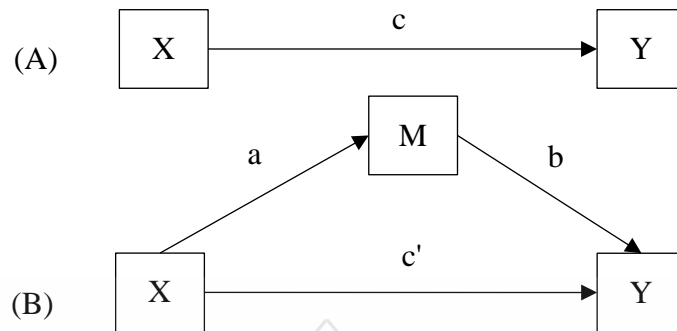


Figure 3.1 (A) Illustration of a Direct effect. X Affects Y.
 (B) Illustration of a Mediation Design.
 X is Hypothesized to Exert an Indirect Effect on Y through M.

SOURCE: Preacher and Hayes (2008)

3.7.2 Interpretation

The results of the four steps of regression analysis above can be interpreted as follows (Baron & Kenny, 1986; Frazier et al., 2004):

3.5.2.1 The results of mediation analysis can be divided and interpreted in two aspects. Firstly, when the effect sizes of c , a , b are significant, but c' is insignificant, it reflects that M is a mediating variable. Thus, it is a complete mediation. Secondly, when the effect sizes of c , a , b and c' are significant, M is an intermediate variable. Thus, it is a partial mediation.

3.7.2.2 To forecast the indirect effect size of the mediating variable, the results of the data analysis can be used to calculate in order to estimate the indirect effect size of X on Y with M as a mediating variable as follows:

- c = total effect of X on Y as shown in Step 1.
- = Direct effect + Indirect effect
- c' = Direct effect size of X on Y as shown in Step 4.

Thus, $c - c' =$ forecast value of indirect effect size of X on Y with M as a mediating variable.

CHAPTER 4

RESEARCH RESULTS

The purpose of the study on mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital is to test the influence of corporate governance, such as board structure, board activities, compensation, shareholder structure, and audit committee affecting accounting conservatism and cost of capital in order to analyze the influence of accounting conservatism on cost of capital, and to analyze the influence of corporate governance on cost of capital through accounting conservatism. The results of the data analysis are presented in four parts respectively as follows:

- 4.1 Descriptive statistics analysis,
- 4.2 Regression analysis,
- 4.3 Hypothesis testing, and
- 4.4 Conclusion.

4.1 Descriptive Statistics Analysis

The information in regards to firm characteristics, corporate governance, accounting conservatism and cost of capital were collected to study the mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital of listed firms on the Stock Exchange of Thailand. The data of the sample in this study, including board size, board independence, board duality, board expertise, board meeting, board attendance, board compensation, CEO compensation, director ownership, CEO ownership, family ownership, audit committee size, audit committee financial expertise, leverage ratio, total asset, cost of equity, cost of debt, and weighted average cost of capital were collected from the disclosed information in the annual registration statement (Form 56-1), and the annual financial statement from 2018 to 2019. The total number of listed firms in 2018 that were studied is 451 firms, and the total number of listed firms in 2019 that were studied is 455. Thus, there were 906 firms in total. The details of data analysis as follows: Table 4.1- 4.3

Table 4.1 Descriptive Statistics Analysis of the Variables from 2018 to 2019

Variables	Minimum	Maximum	Mean	Standard Deviation
Board structure				
Board size (BSI) (persons)	5.0000	21.0000	10.0552	2.4289
Board independence (persons)	3.0000	11.0000	4.1843	1.2598
Board independence (BIN) (times)	0.2000	0.7800	0.4204	0.0997
Board activity				
Board expertise (BEX) (firms)	0.0000	5.9412	3.7640	1.7024
Board meeting (BME) (times)	6.0000	29.0000	8.0740	2.9294
Board attendance (BAT) (%)	72.2200	100.000	93.2418	7.1460
Compensation				
Board compensation (million baht)	0.1900	103.410	8.5481	11.6678
Board compensation (BCO) (Ln)	-1.6607	4.6387	1.5766	1.0644
CEO compensation (million baht)	0.4200	561.393	46.1382	49.0937
CEO compensation (CCO) (Ln)	-0.8675	6.3304	3.4385	0.8969
Shareholder structure				
Director ownership (DOW) (%)	0.0000	98.5200	19.5860	21.1287
CEO ownership (COW) (%)	0.0000	87.6000	13.8757	18.3861
Family ownership (FOW) (%)	0.0000	96.3900	30.1355	26.7011
Audit committee				
Audit committee size (ASI) (persons)	3.0000	5.0000	3.1457	0.3713
Audit committee financial expertise (AEX) (persons)	1.0000	3.0000	1.1038	0.3295
Conservatism (CON)				
	-14.5656	15.4682	0.1397	2.5171
Cost of capital				
Cost of equity (Ke) (%)	-15.9843	10.8921	-2.2547	5.0843
Cost of debt (Kd) (%)	0.0024	12.3591	3.3273	1.8794
Weighted average cost of capital (WACC) (%)	-14.7654	10.4920	-0.4665	3.9861
Control variables				
Leverage ratio (LEV) (times)	-11.6560	20.0066	1.2797	1.7595
Total Asset (million baht)	11.6000	2,484,438.68	33,631.83	135,546.88
Total Asset (TAS) (LN)	2.4500	14.7300	8.8834	1.5719

Table 4.1 shows the results of the basic data in this study within the conceptual framework (Figure 2.1) in order to study the mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital. The details are as follows:

Board structure consists of board size (BSI), board independence (BIN), and board duality (BDU). Board size (BSI) is the number of board members. The study found that the lowest board size consists of 5 persons, the highest board size consists of 21 persons, the mean is 10.0552, and the standard deviation is 2.4289. Board independence is the number of independent committees. The study found that the lowest number of independent committees consists of 3 persons, the highest number of independent committees consists of 11 persons, the mean is 4.1843, and the standard deviation is 1.2598. The ratio between the number of independent directors and number of directors shows that the lowest number of independent directors is 0.20, the highest number of independent directors is 0.78, the mean is 0.4204, and the standard deviation is 0.0997. Board activity consists of board expertise (BEX), board meeting (BME), and board attendance (BAT). Board expertise (BEX) is the number of other firms in which the directors of the firm serve as directors or executives. The study found that the lowest number of board expertise is 0 firm per director, the highest number of board expertise is 5.9412 firms per director, the mean is 3.7640, and the standard deviation is 1.7024. Board meeting (BME) is the number of meetings of the committee in a year. The study found that the lowest number is 6 times per year, the highest number is 29 times per year, the mean is 8.074, and the standard deviation is 2.9294. Board attendance (BAT) is the percentage of the attendance of directors in the board meeting in a year. The study found that the lowest number is 72.22%, the highest number is 100%, the mean is 93.2418%, and the standard deviation is 7.1460.

Compensation consists of board compensation (BCO) and CEO compensation (CCO). The study found that the lowest amount of board compensation is 0.1900 million baht, the highest amount is 103.410 million baht, the mean is 8.5481 million baht, and the standard deviation is 11.6678. The natural logarithm of the board compensation (BCO) shows that the lowest number is -1.6607, the highest number is 4.6387, the mean is 1.5766, and the standard deviation is 1.0644. The study found that the lowest amount of CEO compensation is 0.4200, the highest amount is 561.393, the mean is 46.1382, and the standard deviation is 49.0937. The natural logarithm of the CEO compensation (CCO)

shows that the lowest number is -0.8675, the highest number is 6.3304, the mean is 3.4385, and the standard deviation is 0.8969. Shareholder structure consists of director ownership (DOW), CEO ownership (COW), and family ownership (FOW). Director ownership (DOW) refers to the shares held by directors calculated in percentage. The study found that the lowest amount is 0%, the highest amount is 98.52%, the mean is 19.586%, and the standard deviation is 21.1287. CEO ownership (COW) is the percentage of shares held by the CEO. The study found that the lowest number is 0%, the highest number is 87.6%, the mean is 13.8757%, and the standard deviation is 18.3861. Family ownership (FOW) is the percentage of shares held by family members. The study found that the lowest number is 0%, the highest number is 96.39%, the mean is 30.1355%, and the standard deviation is 26.7011.

Audit committee consists of audit committee size (ASI) and audit committee financial expertise (AEX). Audit committee size (ASI) is the number of audit committee. It was found that the lowest number is 3 persons, the highest number is 5 persons, the mean is 3.1457, and the standard deviation is 0.3713. Audit committee financial expertise (AEX) is the number of financial experts on the audit committee. It was found that the lowest number is 1 person, the highest number is 3 persons, the mean is 1.1038, and the standard deviation is 0.3295.

Conservatism (CON), according to the concept of Basu, is the relationship between earnings and the negative rate of return which is higher than the relationship between earnings and positive rate of return. The study found that the lowest amount is -14.5656, the highest amount is 15.4682, the mean is 0.1397, and the standard deviation is 2.5171.

Cost of capital consists of cost of equity (Ke), cost of debt (Kd), and weighted average cost of capital (WACC). Cost of equity (Ke) is the rate of return that investors expect. Capital Asset Pricing Model (CAPM) was applied in this study. The study found that the lowest amount is -15.9843%, the highest amount is 10.8921%, the mean is -2.2547%, and the standard deviation is 5.0843. Cost of debt (Kd) is the interest rate paid per interest-bearing debt. The study found that the lowest amount is 0.0024%, the highest amount is 12.3591%, the mean is 3.3273%, and the standard deviation of 1.8794. Weighted average cost of capital (WACC) is the shareholders' and creditors' average cost of equity based on the proportion to owners' equity and creditor's equity. The study found

that the lowest number is -14.7654%, the highest is 10.4920%, the mean is -0.4665%, and the standard deviation 3.9861.

Control variables consists of leverage ratio (LEV) and total asset (TAS). Leverage ratio (LEV) is the ratio of debt to equity. The study found that the lowest number is -11.6560, the highest number is 20.0066, the mean is 1.2797, and the standard deviation is 1.7595. In terms of total asset, the study found that the lowest amount is 11.60 million baht, the highest amount is 2,484,438.68 million baht, the mean is 33,631.83 million baht, and the standard deviation is 135,546.88. The natural logarithm of the total asset (TAS) shows that the lowest number is 2.45, the highest number is 14.73, the mean is 8.8834, and the standard deviation is 1.5719.

Table 4.2 Frequency and Percentage of Board Structure, and Industry/year Fixed Effect from 2018 to 2019

Variables	Frequency (Case)	Percent (%)
Board structure (BST)		
Non-Board duality (BDU)	717.00	79.7101
Board duality	189.00	20.2899
Industry Fixed Effect		
Agro & Food Industry (AGR)	100.00	11.0375
Consumer Products (COS)	67.00	7.3951
Industrials (IND)	179.00	19.7572
Property & Construction (PRO)	194.00	21.4128
Resources (RES)	96.00	10.5960
Services (SER)	202.00	22.2958
Technology (TEC)	68.00	7.5055
Year Fixed Effect		
Year-19 (Y19)	451.00	49.7792
Year-18 (Y18)	455.00	50.2208

Table 4.2 presents frequency and percentage of board structure (BST), and industry/year fixed effect from 2018 to 2019. The number of firms with non-board duality (BDU) is 717 firm-years, or 79.7101%. The number of firms in the Agro & Food Industry (AGR) sector is 99 firm-year, or 10.9272%. The number of firms in Consumer Products (COS) is 67 firm-year or 7.3951%. The number of firms in Industrials (IND) is 179 firm-

year, or 19.7572%. The number of firms in Property & Construction (PRO) is 194 firm-year, or 21.4128%. The number of firms in Resources (RES) is 96 firm-year, or 10.5960%. The number of firms in Services (SER) is 202 firm-year, or 22.2958%. The number of firms in Technology (TEC) is 68 firm-year, or 7.5055%. There are 451 firm-year or 49.7792% in Year-19 (Y19), and 455 firm-year or 50.2208% in Year-18 (Y18).

Table 4.3 Skewness and Kurtosis of Irregularly Distributed Data

Variables	Before logarithm transformation		After logarithm transformation	
	Skewness	Kurtosis	Skewness	Kurtosis
Board compensation (BCO)	3.7782	18.6989	0.0225	0.1093
CEO compensation (CCO)	3.5266	20.7498	-0.2680	1.2961
Total assets (TAS)	13.0247	215.1194	0.5123	0.5050

For board compensation (BCO), skewness is 3.7782, and kurtosis is 18.6989. For CEO compensation (CCO), skewness is 3.5266, and kurtosis was 20.7498. For total asset (TAS), skewness is 13.0247, and kurtosis is 215.1194. With normal distribution, skewness must not be over 0.75, and kurtosis use not be over 1.50 (Hoogland & Boomsma, 1998). Skewness and kurtosis of the three variables after being transformed by taking natural log transformation are as follows: for board compensation (BCO), skewness is 0.0225, and kurtosis is 0.1093. For CEO compensation (CCO), skewness is -0.2680, and kurtosis is 1.2961. For total asset (TAS), skewness is 0.5123, and kurtosis is 0.5050.

4.2 Regression Analysis

To test the data by multiple regression analysis, it is necessary to verify the data to meet the conditions of the analysis. The results of the data verification are as follows:

4.2.1 The mean of the residuals is zero (exogeneity of the independent variables). This condition is always true when ordinary least square method is applied (Greene, 2012),

4.2.2 The residuals are normally distributed with the test of normality. Normality can have a serious impact on a small sample size (less than 50 cases), but the

effect is effectively reduced when the sample is 200 cases or more (Hair, Black, Babin, Anderson, & Tatham, 2006). This is due to the fact that the regression coefficient estimation has a near-normal distribution when the sample is large. In this study, there are 906 firms, which is considered a significant number.

4.2.3 The residuals are distributed independently (autocorrelation) based on the Durbin-Watson statistic. In Table 4.5, Table 4.6, Table 4.7, and Table 4.8, the statistical values in every model are 1.5-2.5, which is the Durbin-Watson range. Thus, the independent variables used in the test have no multicollinearity.

4.2.4 The variance of the residuals are constant (homoscedasticity). According to the scatter plot, the residuals were distributed, and the values are higher and lower than 0, which is a narrow range. Thus, the variance of the forecast error is constant.

4.2.5 Each independent variable must be uncorrelated, or no multicollinearity. In other words, the tolerance statistic is not close to zero and the variance inflation factor (VIF) statistic of all independent variables in each model is less than 10. The test shows that The Tolerance statistic is in the range of 0.8072 - 0.9971 and the VIF statistic is in the range of 1.0029 - 1.9979. Therefore, it can be concluded that all independent variables have no degree of correlation, and are independent. Thus, there is no multicollinearity (Bowerman & O'Connell, 2000).

When the correlation coefficient of each pair of variables in Table 4.4 is taken into consideration, the independent variables with the highest correlation coefficient are COW and DOW, with $r = 0.683$. This is moderately correlated according to the criteria of Hinkle, William, and J. (1998)

Table 4.4 Correlation Coefficient Test

	BSI	BIN	BDU	BEX	BME	BAT	BCO	CCO	DOW	COW	FOW	ASI	AEX	CON	Ke	Kd	WACC	LEV	TAS	SER	Y19	
BSI	1																					
BIN	-.248*	1																				
BDU	.156*	-.006	1																			
BEX	.176*	-.100*	.095*	1																		
BME	.193*	.072*	-.001	.133*	1																	
BAT	.047	-.028	.053	.059	-.014	1																
BCO	.497*	-.020	.228*	.296*	.289*	.107*	1															
CCO	.362*	-.022	.065	.302*	.177*	.084*	.571*	1														
DOW	-.130*	.037	-.091*	-.047	-.099*	.028	-.198*	-.013	1													
COW	-.186*	.138*	-.192*	-.094*	-.072*	.052	-.192*	-.006	.683*	1												
FOW	-.060	.019	-.049	-.018	-.081*	.118*	-.212*	-.106*	.526*	.442*	1											
ASI	.242*	.040	-.018	.032	.043	.040	.129*	.110*	.026	.032	.038	1										
AEX	.070*	.042	-.003	.052	-.040	.032	.011	.009	-.043	-.029	-.017	.057	1									
CON	.173*	-.023	.006	.178*	.195*	.227*	.258*	.204*	-.040	-.036	.056	.162*	.069*	1								
Ke	-.125*	.010	-.033	-.222*	-.097*	-.081*	-.210*	-.191*	.012	-.002	-.003	-.057	.007	-.220*	1							
Kd	-.165*	.069*	-.077*	-.186*	-.083*	-.153*	-.239*	-.241*	-.052	-.074*	-.005	-.079*	-.002	-.320*	.114*	1						
WACC	-.136*	.042	-.068*	-.221*	-.081*	-.145*	-.237*	-.207*	-.009	-.023	-.010	-.081*	.010	-.296*	.865*	.304*	1					
LEV	.013	.074*	-.017	.042	-.036	-.095*	-.002	.059*	.049	-.012	.032	-.053	.010	-.045	-.027	.184*	.173*	1				
TAS	.398*	.064	.070*	.331*	.287*	.032	.660*	.616*	-.187*	-.152*	-.177*	.101*	.015	.167*	-.193*	-.141*	-.124*	.152*	1			
SER	.126*	-.092*	.068*	.152*	.006	.032	.052	.122*	-.003	-.026	-.077*	-.065	-.033	.017	.010	-.196*	-.076*	-.034	-.040	1		
Y19	-.041	.025	.000	-.102*	-.064	-.030	-.006	-.002	.001	-.003	-.014	-.028	.001	-.126*	.700*	.075*	.624*	.032	.012	-.005	1	

NOTE: * = Correlation is significant at the .05 level (2-tailed).

4.3 Hypothesis Testing

4.3.1 Model Test: The Effect of Corporate Governance on Cost of Capital

The effect of corporate governance on cost of equity was investigated by the following regression model.

$$Ke_{i,t} = \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \beta_k \text{Year dummy} + \varepsilon \quad (\text{Model 1})$$

Model 1 was employed to test hypotheses 1a-1c, 2a-2c, 3a-3b, 4a-4c, and 5a-5b which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H1: There is a negative effect of board structure on cost of equity.

H1a: There is a negative effect of board size on cost of equity.

H1b: There is a negative effect of board independence on cost of equity.

H1c: There is a negative effect of non-board duality on cost of equity.

H2: There is a negative effect of board activity on cost of equity.

H2a: There is a negative effect of board expertise on cost of equity.

H2b: There is a negative effect of board meeting on cost of equity.

H2c: There is a negative effect of board attendance on cost of equity.

H3: There is a negative effect of compensation on cost of equity.

H3a: There is a negative effect of board compensation on cost of equity.

H3b: There is a negative effect of CEO compensation on cost of equity.

H4: There is a negative effect of shareholder structure on cost of equity.

H4a: There is a negative effect of director ownership on cost of equity.

H4b: There is a negative effect of CEO ownership on cost of equity.

H4c: There is a negative effect of family ownership on cost of equity.

H5: There is a negative effect of Audit committee on cost of equity.

H5a: There is a negative effect of audit committee size on cost of equity.

H5b: There is a negative effect of audit committee financial expertise on cost of equity.

Table 4.5 Tests of H1 – H5: the Correlation Between Corporate Governance and the Cost of Equity ($X \rightarrow Y$)

Independent Variables	Expected Sign	Model 1 Dependent Variable: Ke					Collinearity Statistics	
		Unstandardized Coefficients		Standardized			Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)	t-value	p-value		
Intercept		1.3446	2.0465		0.6570	0.5113		
BSI	(-)	0.0308	0.0601	0.0147	0.5122	0.6087	0.8087	1.6428
BIN	(-)	-0.1973	1.2423	-0.0039	-0.1588	0.8739	0.8447	1.1839
BDU	(-)	0.0065	0.2978	0.0005	0.0218	0.9826	0.8845	1.1305
BEX	(-)	-0.2599	0.0743	-0.0870	-3.4990	0.0005*	0.8108	1.2333
BME	(-)	0.0285	0.0417	0.0164	0.6825	0.4951	0.8707	1.1485
BAT	(-)	-0.0256	0.0164	-0.0360	-1.5618	0.1187	0.9458	1.0573
BCO	(-)	-0.5650	0.1648	-0.1183	-3.4277	0.0006*	0.8212	1.3739
CCO	(-)	-0.3848	0.1745	-0.0679	-2.2045	0.0277*	0.8288	1.8909
DOW	(-)	0.0057	0.0094	0.0238	0.6104	0.5418	0.8292	1.9979
COW	(-)	-0.0119	0.0105	-0.0432	-1.1401	0.2545	0.8493	1.8628
FOW	(-)	-0.0038	0.0052	-0.0199	-0.7327	0.4640	0.8763	1.4785
ASI	(-)	-0.1011	0.3219	-0.0074	-0.3140	0.7536	0.9072	1.1023
AEX	(-)	0.2427	0.3498	0.0157	0.6939	0.4879	0.9760	1.0245

Table 4.5 Tests of H1 – H5: the Correlation Between Corporate Governance and the Cost of Equity (X → Y) (Cont.)

Independent Variables	Expected Sign	Model 1 Dependent Variable: Ke					Collinearity Statistics	
		Unstandardized Coefficients		Standardized			Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)	t-value	p-value		
LEV		-0.1033	0.0673	-0.0358	-1.5355	0.1250	0.9247	1.0814
TAS		-0.1960	0.1133	-0.0606	-1.7297	0.0840	0.8084	1.4486
Industry		0.3876	0.2696	0.0339	1.4375	0.1509	0.9026	1.1079
Year		7.0324	0.2300	0.6920	30.5711	0.0000*	0.9787	1.0217
Adjust R ²						0.5462		
F-value						65.0757*		
Durbin-Watson						1.8097		

NOTE: * denote significance at the .05.



Table 4.5 presents the correlation between corporate governance and the cost of equity (Ke) as in Model 1. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R² of the model is 0.5462, which means that the explanatory variables are able to explain the dependent variable by 54.62%.

Table 4.5 also provides the evidence in regards to the effect of corporate governance on cost of equity.

- **Board Structure** proxies: board size (BSI), board independence (BIN) and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN) and non-board duality (BDU) are not significant. Thus, the hypotheses H1a to H1c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME) and board attendance (BAT). The coefficient of board expertise (BEX) is negative and significant at a significance level of .05. Thus, the hypothesis H2a is supported.

Nonetheless, the coefficients of board meeting (BME) and board attendance (BAT) are not significant. Thus, the hypotheses H2b and H2c are not supported

- **Compensation** proxies: board compensation (BCO) and CEO compensation (CCO). The coefficients of board compensation (BCO) and CEO compensation (CCO) are negative and significant at a significance level of .05. Thus, the hypothesis H3a and H3b are supported.

- **Shareholder structure** proxies: director ownership (DOW), CEO ownership (COW) and family ownership (FOW). The coefficients of director ownership (DOW), CEO ownership (COW) and family ownership (FOW) are not significant. Thus, the hypotheses H4a to H4c are not supported.

- **Audit committee** proxies: audit committee size (ASI) and audit committee financial expertise (AEX). The coefficients of audit committee size (ASI) and audit committee financial expertise (AEX) are not significant. Thus, the hypotheses H5a to H5b are not supported.

In additional, the coefficient of year fixed effect (Year) is positive and significant at a significance level of .05.

The effect of corporate governance on cost of debt was investigated by the following regression model.

$$Kd_{i,t} = \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \beta_k \text{Year dummy} + \varepsilon \quad (\text{Model 2})$$

Model 2 was employed to test hypotheses 6a-6c, 7a-7c, 8a-8b, 9a-9c, and 10a-10b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

- H6: There is a negative effect of board structure on cost of debt.
- H6a: There is a negative effect of board size on cost of debt.
- H6b: There is a negative effect of board independence on cost of debt.
- H6c: There is a negative effect of non-board duality on cost of debt.
- H7: There is a negative effect of board activity on cost of debt.
- H7a: There is a negative effect of board expertise on cost of debt.
- H7b: There is a negative effect of board meeting on cost of debt.
- H7c: There is a negative effect of board attendance on cost of debt.
- H8: There is a negative effect of compensation on cost of debt.
- H8a: There is a negative effect of board compensation on cost of debt.
- H8b: There is a negative effect of CEO compensation on cost of debt.
- H9: There is a negative effect of shareholder structure on cost of debt.
- H9a: There is a negative effect of director ownership on cost of debt.
- H9b: There is a negative effect of CEO ownership on cost of debt.
- H9c: There is a negative effect of family ownership on cost of debt.
- H10: There is a negative effect of audit committee on cost of debt.
- H10a: There is a negative effect of audit committee size on cost of debt.
- H10b: There is a negative effect of audit committee financial expertise on cost of debt.

Table 4.6 Tests of H6 – H10: the Correlation Between Corporate Governance and the Cost of Debt (X → Y)

Independent Variables	Expect Sign	Model 2 Dependent Variable: Kd					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficient (Beta)	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error					
Intercept		7.5789	1.0304		7.3554	0.0000		
BSI	(-)	-0.0145	0.0302	-0.0187	-0.4780	0.6327	0.8087	1.6428
BIN	(-)	0.7089	0.6255	0.0376	1.1334	0.2573	0.8447	1.1839
BDU	(-)	-0.1544	0.1499	-0.0334	-1.0300	0.3033	0.8845	1.1305
BEX	(-)	-0.0969	0.0374	-0.0878	-2.5924	0.0097*	0.8108	1.2333
BME	(-)	-0.0087	0.0210	-0.0136	-0.4146	0.6785	0.8707	1.1485
BAT	(-)	-0.0238	0.0082	-0.0905	-2.8854	0.0040*	0.9458	1.0573
BCO	(-)	-0.2429	0.0830	-0.1376	-2.9275	0.0035*	0.8212	1.3739
CCO	(-)	-0.2434	0.0879	-0.1162	-2.7694	0.0057*	0.8288	1.8909
DOW	(-)	-0.0006	0.0047	-0.0064	-0.1201	0.9045	0.8292	1.9979
COW	(-)	-0.0116	0.0053	-0.1131	-2.1913	0.0287*	0.8493	1.8628
FOW	(-)	0.0000	0.0026	-0.0007	-0.0187	0.9851	0.8763	1.4785
ASI	(-)	-0.1838	0.1621	-0.0363	-1.1339	0.2571	0.9072	1.1023
AEX	(-)	-0.0056	0.1761	-0.0010	-0.0319	0.9746	0.9760	1.0245

Table 4.6 Tests of H6 – H10: the Correlation Between Corporate Governance and the Cost of Debt (X → Y) (Cont.)

Independent Variables	Expect Sign	Model 2 Dependent Variable: Kd					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficient (Beta)	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error					
LEV		0.1808	0.0339	0.1693	5.3371	0.0000*	0.9247	1.0814
TAS		0.0213	0.0571	0.0178	0.3738	0.7087	0.8084	1.4486
Industry		-0.6309	0.1358	-0.1492	-4.6474	0.0000*	0.9026	1.1079
Year		0.1962	0.1158	0.0522	1.6938	0.0906	0.9787	1.0217
Adjust R ²						0.1581		
F-value						10.9963*		
Durbin-Watson						1.8306		

NOTE: * denote significance at the .05 levels.



Table 4.6 presents the correlation between corporate governance and cost of debt (Kd) as in Model 2. This model is significant at reliability level of 95% (p -value = .05). Thus, this model is statistically valid. The adjusted R^2 of the model is 0.1581, which means that the explanatory variables are able to explain the dependent variable by 15.81%. According to Moksony (1999), R-square values are based on 3 key points: the impact of the explanatory variable, the degree of variation in this variable, and the size of the spread around the regression line. The relatively low adjusted R^2 values of this study are likely due to the impact of the explanatory variable. Thus, explanatory variables should be added as control variables, such as market capitalization and return on assets (ROA), to explain cost of debt variables. By adding these variables to the regression equation, R^2 will greatly increase and make the model look very impressive (Moksony, 1999).

- **Board Structure** proxies: board size (BSI), board independence (BIN) and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN) and non-board duality (BDU) are not significant. Thus, the hypotheses H6a to H6c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME) and board attendance (BAT). The coefficient of board expertise (BEX) and board attendance (BAT) are negative and significant at a significance level of .05. Thus, the hypothesis H7a and H7c are supported.

Nonetheless, the coefficients of board meeting (BME) is not significant. Thus, the hypotheses H7b is not supported.

- **Compensation** proxies: board compensation (BCO) and CEO compensation (CCO). The coefficients of board compensation (BCO) and CEO compensation (CCO) are negative and significant at a significance level of .05. Thus, the hypothesis H8a and H8b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW) and family ownership (FOW). The coefficient of CEO ownership (COW) is negative and significant at a significance level of .05. Thus, the hypothesis H9b is supported.

However, the coefficients of director ownership (DOW) and family ownership (FOW) are not significant. Thus, the hypotheses H9a and H9c are not supported.

- **Audit Committee** proxies: audit committee size (ASI) and audit committee financial expertise (AEX). The coefficients of audit committee size (ASI) and audit committee financial expertise (AEX) are not significant. Thus, the hypotheses H10a and H10b are not supported.

Moreover, the coefficient of Industry fixed effect (Industry) is negative and significant at a significance level of .05. However, leverage (LEV) is positive and significant at a significance level of .05.

The effect of corporate governance on weighted average cost of capital (WACC) was investigated by the following regression model.

$$WACC_{i,t} = \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j \text{Industry dummy} + \beta_k \text{Year dummy} + \varepsilon$$

(Model 3)

Model 3 was employed to test hypotheses 11a-11c, 12a-12c, 13a-13b, 14a-14c, and 15a-15b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H11: There is a negative effect of Board structure on WACC.

H11a: There is a negative effect of board size on WACC.

H11b: There is a negative effect of board independence on WACC.

H11c: There is a negative effect of non-board duality on WACC.

H12: There is a negative effect of Board activity on WACC.

H12a: There is a negative effect of board expertise on WACC.

H12b: There is a negative effect of board meeting on WACC.

H12c: There is a negative effect of board attendance on WACC.

H13: There is a negative effect of compensation on WACC.

H13a: There is a negative effect of board compensation on WACC.

H13b: There is a negative effect of CEO compensation on WACC.

H14: There is a negative effect of shareholder structure on WACC.

H14a: There is a negative effect of director ownership on WACC.

H14b: There is a negative effect of CEO ownership on WACC.

H14c: There is a negative effect of family ownership on WACC.

H15: There is a negative effect of audit committee on WACC

H15a: There is a negative effect of audit committee size on WACC.

H15b: There is a negative effect of audit committee financial expertise on WACC.



Table 4.7 Tests of H11 – H15: the Correlation Between Corporate Governance and the Weighted Average Cost of Capital (X → Y)

Independent Variables	Expect Sign	Model 3 Dependent Variable: WACC					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept		3.4666	1.7020		2.0368	0.0420*		
BSI	(-)	0.0289	0.0500	0.0176	0.5779	0.5635	0.8087	1.6428
BIN	(-)	0.0645	1.0331	0.0016	0.0624	0.9502	0.8447	1.1839
BDU	(-)	-0.1605	0.2476	-0.0164	-0.6479	0.5172	0.8845	1.1305
BEX	(-)	-0.2164	0.0618	-0.0924	-3.5042	0.0005*	0.8108	1.2333
BME	(-)	0.0383	0.0347	0.0281	1.1048	0.2695	0.8707	1.1485
BAT	(-)	-0.0404	0.0136	-0.0725	-2.9666	0.0031*	0.9458	1.0573
BCO	(-)	-0.6990	0.1371	-0.1866	-5.0995	0.0000*	0.8212	1.3739
CCO	(-)	-0.4837	0.1452	-0.1088	-3.3318	0.0009*	0.8288	1.8909
DOW	(-)	0.0004	0.0078	0.0022	0.0539	0.9571	0.8292	1.9979
COW	(-)	-0.0093	0.0087	-0.0427	-1.0635	0.2878	0.8493	1.8628
FOW	(-)	-0.0035	0.0043	-0.0235	-0.8133	0.4162	0.8763	1.4785
ASI	(-)	-0.2745	0.2677	-0.0256	-1.0251	0.3056	0.9072	1.1023
AEX	(-)	0.1927	0.2909	0.0159	0.6623	0.5079	0.9760	1.0245

Table 4.7 Tests of H11 – H15: the Correlation Between Corporate Governance and the Weighted Average Cost of Capital (X → Y)
(Cont.)

Independent Variables	Expect Sign	Model 3 Dependent Variable: WACC					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
LEV		0.3353	0.0560	0.1480	5.9915	0.0000*	0.9247	1.0814
TAS		0.1160	0.0943	0.0457	1.2304	0.2189	0.8084	1.4486
Industry		-0.2915	0.2243	-0.0325	-1.2998	0.1940	0.9026	1.1079
Year		4.8374	0.1913	0.6071	25.2854	0.0000*	0.9787	1.0217
Adjust R ²						0.4894		
F-value						52.0158*		
Durbin-Watson						1.9227		

NOTE: * denote significance at the .05 levels.

Table 4.7 presents the correlation between corporate governance and the weighted average cost of capital (WACC) as in Model 3. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R² of the model is 0.4894, which means that the explanatory variables are able to explain the dependent variable by 48.94%.

Table 4.7 also provides the evidence in regards to the effect of corporate governance on weighted average cost of capital.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN), and non-board duality (BDU) are not significant. Thus, the hypotheses H11a to H11c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The coefficient of board expertise (BEX) and board attendance (BAT) are negative and significant at a significance level of .05. Thus, the hypothesis H12a and H12c are supported.

Nonetheless, the coefficients of board meeting (BME) is not significant. Thus, the hypotheses H12b is not supported.

- **Compensation** proxies: board compensation (BCO) and CEO compensation (CCO). The coefficients of board compensation (BCO), and CEO compensation (CCO) are negative and significant at a significance level of .05. Thus, the hypotheses H13a and H13b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW) and family ownership (FOW). The coefficients of director ownership (DOW), CEO ownership (COW), and family ownership (FOW) are not significant. Thus, the hypotheses H14a to H14b are not supported.

- **Audit Committee** proxies: audit committee size (ASI) and audit committee financial expertise (AEX). The coefficients of audit committee size (ASI) and audit committee financial expertise (AEX) are not significant. Thus, the hypotheses H15a to H15b are not supported.

Moreover, the coefficient of leverage (LEV) and year fixed effect (Year) are positive and significant at a significance level of .05.

4.3.2 Model Test: The Effect of Corporate Governance on Accounting Conservatism

The effect of corporate governance on accounting conservatism was investigated by the following regression model.

$$\begin{aligned} CON_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\ & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\ & \beta_{13} AEX_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \\ & \beta_k Year\ dummy + \varepsilon \end{aligned} \quad (\text{Model 4})$$

Model 4 was employed to test hypotheses 16a-16c, 17a-17c, 18a-18b, 19a-19c, and 20a-20b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H16: There is a positive effect of board structure on accounting conservatism.

H16a: There is a positive effect of board size on conservatism.

H16b: There is a positive effect of board independence on conservatism.

H16c: There is a positive effect of non-board duality on conservatism.

H17: There is a positive effect of board activity on accounting conservatism.

H17a: There is a positive effect of board expertise on conservatism.

H17b: There is a positive effect of board meeting on conservatism.

H17c: There is a positive effect of board attendance on conservatism.

H18: There is a positive effect of compensation on accounting conservatism.

H18a: There is a positive effect of board compensation on conservatism.

H18b: There is a positive effect of CEO compensation on conservatism.

H19: There is a positive effect of shareholder structure on accounting conservatism.

H19a: There is a positive effect of director ownership on conservatism.

H19b: There is a positive effect of CEO ownership on conservatism.

H19c: There is a positive effect of family ownership on conservatism.

H20: There is a positive effect of audit committee on accounting conservatism.

H20a: There is a positive effect of audit committee size on conservatism

H20b: There is a positive effect of audit committee financial expertise on conservatism.

Table 4.8 Tests of H16-H20: the Correlation Between Corporate Governance and Accounting Conservatism (X → M)

Independent Variables	Expect Sign	Model 4 Dependent Variable: CON					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept		-10.0054	1.3771		-7.2658	0.0000*		
BSI	(+)	0.0006	0.0404	0.0006	0.0158	0.9874	0.8087	1.6428
BIN	(+)	-0.2447	0.8359	-0.0097	-0.2928	0.7698	0.8447	1.1839
BDU	(+)	-0.3434	0.2004	-0.0555	-1.7138	0.0869	0.8845	1.1305
BEX	(+)	0.1200	0.0500	0.0812	2.4015	0.0165*	0.8108	1.2333
BME	(+)	0.1162	0.0281	0.1350	4.1404	0.0000*	0.8707	1.1485
BAT	(+)	0.0640	0.0110	0.1818	5.8096	0.0000*	0.9458	1.0573
BCO	(+)	0.4310	0.1109	0.1822	3.8861	0.0001*	0.8212	1.3739
CCO	(+)	0.2425	0.1174	0.0864	2.0650	0.0392*	0.8288	1.8909
DOW	(+)	-0.0053	0.0063	-0.0442	-0.8329	0.4051	0.8292	1.9979
COW	(+)	-0.0041	0.0070	-0.0298	-0.5794	0.5624	0.8493	1.8628
FOW	(+)	0.0104	0.0035	0.1101	2.9754	0.0030*	0.8763	1.4785
ASI	(+)	0.7555	0.2166	0.1114	3.4876	0.0005*	0.9072	1.1023

Table 4.8 Tests of H16-H20: the Correlation Between Corporate Governance and Accounting Conservatism (X → M) (Cont.)

Independent Variables	Expect Sign	Model 4 Dependent Variable: CON					Collinearity Statistics		
		Unstandardized Coefficients		Standardized		t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)					
AEX	(+)	0.4299	0.2353	0.0563	1.8266	0.0681	0.9760	1.0245	
LEV		-0.0187	0.0453	-0.0131	-0.4135	0.6794	0.9247	1.0814	
TAS		-0.1224	0.0763	-0.0764	-1.6048	0.1089	0.8084	1.4486	
Industry		-0.0375	0.1814	-0.0066	-0.2065	0.8364	0.9026	1.1079	
Year		-0.4825	0.1548	-0.0959	-3.1174	0.0019*	0.9787	1.0217	
Adjust R ²						0.1617			
F-value						11.2712*			
Durbin-Watson						1.9749			

NOTE: * denote significance at the .05 levels.

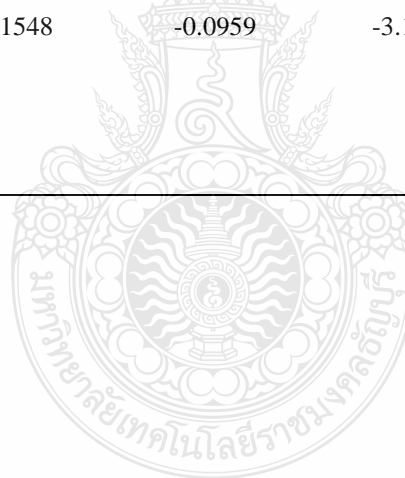


Table 4.8 presents the correlation between corporate governance and accounting conservatism as in Model 4 with accounting conservatism (CON) as the dependent variable. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R^2 of the model is 0.1617, which means that the explanatory variables are able to explain the dependent variable by 16.17%. Low adjusted R^2 values are due to the impact of the explanatory variable. Thus, explanatory variables should be added as control variables, such as financial distress and growth opportunities, to explain the variation of accounting conservatism (Sari, 2020). By adding these variables to the regression equation, R^2 values will greatly increase, and make the model look very impressive (Moksony, 1999).

Table 4.8 also provides the evidence in regards to the effect of corporate governance on cost of equity.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN) and non-board duality (BDU) are not significant. Thus, the hypotheses H16a to H16c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The coefficients of board expertise (BEX), board meeting (BME), and board attendance (BAT) are positive and significant at a significance level of .05. Thus, the hypothesis H17a to H17c are supported.

- **Compensation** proxies: board compensation (BCO), and CEO compensation (CCO). The coefficients of board compensation (BCO), and CEO compensation (CCO) are positive and significant at a significance level of .05. Thus, the hypotheses H18a and H18b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The coefficient of family ownership (FOW) is positive and significant at a significance level of .05. Thus, the hypothesis H19c is supported.

Nonetheless, the coefficients of director ownership (DOW) and CEO ownership (COW) are not significant. Thus, the hypotheses H19a to H19b are not supported.

- **Audit committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The coefficient of audit committee size (ASI) is

positive and significant at a significance level of .05. Thus, the hypothesis H20a is supported.

However, the coefficient of audit committee financial expertise (AEX) is not significant. Thus, the hypotheses H20b is not supported.

In addition, the coefficient of year fixed effect (Year) is negative and significant at a significance level of .05.

4.3.3 Model Test: The Effect of Accounting Conservatism on Cost of Capital

The effect of accounting conservatism on cost of equity was investigated by the following regression model.

$$Ke_{i,t} = \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 5})$$

Model 5 was employed to test hypothesis 21 which is the main issue of the test. There are signs and significance of the coefficient of variables that are of interest.

H21: There is a negative effect of accounting conservatism on cost of equity.

Table 4.9 presents the correlation between accounting conservatism and cost of Equity (Ke) as in Model 5. This model is significant at reliability level of 95% (p-value = 0.05)*. Thus, this model is statistically valid. The adjusted R² of the model is 0.5384, which means that the explanatory variables are able to explain the dependent variable by 53.84%.

Table 4.9 also provides the evidence in regards to the effect of accounting conservatism on cost of equity. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of .05. Thus, the hypothesis H21 is supported.

In addition, the coefficient of firm size (TAS) is negative and significant at a significance level of .05. However, year fixed effect (Year) is positive and significant at a significance level of .05.

Table 4.9 Tests of H21: the Correlation Between Accounting Conservatism and the Cost of Capital (M → Y)

Independent Variables	Expect Sign	Model 5 Dependent Variable: Ke					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept		-0.4673	0.6811		-0.6861	0.4928		
CON	(-)	-0.2106	0.0468	-0.1042	-4.5009	0.0000*	0.9509	1.0517
LEV		-0.0757	0.0662	-0.0262	-1.1436	0.2531	0.9707	1.0301
TAS		-0.5822	0.0752	-0.1800	-7.7461	0.0000*	0.9445	1.0588
Industry		0.0837	0.2587	0.0073	0.3234	0.7465	0.9971	1.0029
Year		7.0080	0.2316	0.6896	30.2653	0.0000*	0.9826	1.0177
Adjust R ²						0.5384		
F-value						212.0957*		
Durbin-Watson						1.8309		

NOTE: * denote significance at the .05 levels.

The effect of accounting conservatism on cost of debt was investigated by the following regression model.

$$Kd_{i,t} = \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 6})$$

Model 6 was employed to test hypothesis 22 which is the main issue of the test. There are signs and significance of the coefficient of variables that are of interest.

H22: There is a negative effect of accounting conservatism on cost of debt.

Table 4.10 presents the correlation between accounting conservatism and cost of debt (Kd) as in Model 6. This model is significant at reliability level of 95% (p-value = 0.05). Thus, this model is statistically valid. The adjusted R² of the model is 0.1776, which means that the explanatory variables are able to explain the dependent variable by 17.76%.

Table 4.10 provides the evidence in regards to the effect of accounting conservatism on cost of debt. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of .05. Thus, the hypothesis H22 is supported.

In addition, the coefficient of leverage (LEV) is positive and significant at a significance level of .05. However, the coefficient of firm size (TAS) and industry fixed effect (Industry) are negative and significant at a significance level of .05.

Table 4.10 Tests of H22: the Correlation Between Accounting Conservatism and the Cost of Debt (M → Y)

Independent Variables	Expect Sign	Model 6 Dependent Variable: Kd					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept		4.6327	0.3361		13.7857	0.0000*		
CON	(-)	-0.2110	0.0231	-0.2826	-9.1427	0.0000*	0.9509	1.0517
LEV		0.1954	0.0327	0.1830	5.9800	0.0000*	0.9707	1.0301
TAS		-0.1546	0.0371	-0.1293	-4.1676	0.0000*	0.9445	1.0588
Industry		-0.8043	0.1277	-0.1902	-6.2999	0.0000*	0.9971	1.0029
Year		0.1294	0.1142	0.0344	1.1326	0.2577	0.9826	1.0177
Adjust R ²						0.1776		
F-value						40.0776*		
Durbin-Watson						1.7932		

NOTE: * denote significance at the .05 levels.

The effect of accounting conservatism on the weighted average cost of capital (WACC) was investigated by the following regression model.

$$WACC_{i,t} = \beta_0 + \beta_1 CON_{i,t} + \beta_{14} LEV_{i,t} + \beta_{15} TAS_{i,t} + \beta_j Industry\ dummy + \beta_k Year\ dummy + \varepsilon \quad (\text{Model 7})$$

Model 7 was employed to test hypothesis 23 which is the main issue of the test. There are signs and significance of the coefficient of variables that are of interest.

H23: There is a negative effect of accounting conservatism on WACC.

Table 4.11 presents the correlation between accounting conservatism and weighted average cost of capital (WACC) as in Model 7. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R² of the model is 0.4752, which means that the explanatory variables are able to explain the dependent variable by 47.52%.

Table 4.11 provides the evidence in regards to the effect of accounting conservatism on weighted average cost of capital. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of .05. Thus, the hypothesis H23 is supported.

In additional, the coefficient of leverage (LEV) and year fixed effect (Year) are positive and significant at a significance level of .05. However, firm size (TAS) and industry fixed effect (Industry) are negative and significant at a significance level of .05.

Table 4.11 Tests of H23: the Correlation Between Accounting Conservatism and the Weighted Average Cost of Capital (M → Y)

Independent Variables	Expect Sign	Model 7 Dependent Variable: WACC					Collinearity Statistics	
		Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
		Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept		-0.2287	0.5694		-0.4017	0.6880		
CON	(-)	-0.3033	0.0391	-0.1915	-7.7563	0.0000*	0.9509	1.0517
LEV		0.3686	0.0554	0.1627	6.6577	0.0000*	0.9707	1.0301
TAS		-0.3222	0.0628	-0.1271	-5.1279	0.0000*	0.9445	1.0588
Industry		-0.6263	0.2163	-0.0698	-2.8958	0.0039*	0.9971	1.0029
Year		4.7498	0.1936	0.5961	24.5393	0.0000*	0.9826	1.0177
Adjust R ²						0.4752		
F-value						164.9103*		
Durbin-Watson						1.9575		

NOTE: * denote significance at the .05 levels.

4.3.4 Model Test: The Direct Effect of Corporate Governance and Accounting Conservatism on Cost of Capital

The influence of intervening variable was analyzed by multiple regression analysis with causal step approach proposed by Baron and Kenny (1986). There are four steps as follows:

Step 1: Cost of capital as the dependent variable, and corporate governance as the independent variable were used in regression analysis as in Model 1-3. This presents the direct influence of the corporate governance on cost of capital in beta as shown in Table 4.5 – Table 4.7.

Step 2: Accounting conservatism as the dependent variable, and corporate governance as the independent variable were used in regression analysis as in Model 4. This presents the direct influence of corporate governance on accounting conservatism as the mediating variable in beta as shown in Table 4.8

Step 3: Cost of capital as the dependent variable, and accounting conservatism as the independent variable while controlling corporate governance were used in regression analysis as in Model 8-10. This presents the direct influence of the variable through accounting conservatism on cost of capital in beta as shown in Table 4.12 – Table 4.14.

Step 4: The results in Model 8-10 in Step 3, with cost of capital as the dependent variable and corporate governance as the independent variable while controlling accounting conservatism were used in regression analysis. This presents the direct influence of corporate governance on cost of capital in beta as shown in Table 4.12 – Table 4.14.

The direct influence of accounting conservatism and corporate governance on cost of capital as shown in Model 8-10 of Step 3 and Step 4 was analyzed with the equations as follows:

$$\begin{aligned} Ke_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\ & \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\ & \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j Industry\ dummy + \\ & \beta_k Year\ dummy + \varepsilon \end{aligned} \quad (\text{Model 8})$$

$$\begin{aligned}
Kd_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\
& \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\
& \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
& \beta_k \text{Year dummy} + \varepsilon
\end{aligned}
\tag{Model 9}$$

$$\begin{aligned}
WACC_{i,t} = & \beta_0 + \beta_1 BSI_{i,t} + \beta_2 BIN_{i,t} + \beta_3 BDU_{i,t} + \beta_4 BEX_{i,t} + \beta_5 BME_{i,t} + \beta_6 BAT_{i,t} + \\
& \beta_7 BCO_{i,t} + \beta_8 CCO_{i,t} + \beta_9 DOW_{i,t} + \beta_{10} COW_{i,t} + \beta_{11} FOW_{i,t} + \beta_{12} ASI_{i,t} + \\
& \beta_{13} AEX_{i,t} + \beta_{14} CON_{i,t} + \beta_{15} LEV_{i,t} + \beta_{16} TAS_{i,t} + \beta_j \text{Industry dummy} + \\
& \beta_k \text{Year dummy} + \varepsilon
\end{aligned}
\tag{Model 10}$$



Table 4.12 The Direct Effect of Accounting Conservatism and Corporate Governance on Cost of Equity (X, M → Y)

Independent Variables	Model 8 Dependent Variable: Ke					Collinearity Statistics	
	Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept	-0.1769	2.0966		-0.0844	0.9328		
CON	-0.1521	0.0496	-0.0753	-3.0637	0.0023*	0.8225	1.2158
BSI	0.0309	0.0598	0.0147	0.5162	0.6058	0.8087	1.6428
BIN	-0.2345	1.2365	-0.0046	-0.1896	0.8496	0.8446	1.1840
BDU	-0.0457	0.2969	-0.0037	-0.1540	0.8776	0.8816	1.1343
BEX	-0.2416	0.0742	-0.0809	-3.2580	0.0012*	0.8056	1.2413
BME	0.0461	0.0419	0.0265	1.1008	0.2713	0.8542	1.1706
BAT	-0.0158	0.0166	-0.0223	-0.9539	0.3404	0.9111	1.0975
BCO	-0.4994	0.1654	-0.1045	-3.0188	0.0026*	0.8142	1.4143
CCO	-0.3479	0.1741	-0.0614	-1.9978	0.0460*	0.8263	1.9000
DOW	0.0049	0.0094	0.0205	0.5274	0.5980	0.8289	1.9402
COW	-0.0126	0.0104	-0.0454	-1.2049	0.2286	0.8492	1.8638
FOW	-0.0022	0.0052	-0.0117	-0.4281	0.6687	0.8697	1.4933
ASI	0.0138	0.3226	0.0010	0.0428	0.9659	0.8949	1.1174

Table 4.12 The Direct Effect of Accounting Conservatism and Corporate Governance on Cost of Equity (X, M → Y) (Cont.)

Independent Variables	Model 8 Dependent Variable: Ke					Collinearity Statistics	
	Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error	Coefficient (Beta)				
AEX	0.3081	0.3488	0.0200	0.8833	0.3773	0.9724	1.0284
LEV	-0.1062	0.0670	-0.0367	-1.5851	0.1133	0.9245	1.0817
TAS	-0.2146	0.1130	-0.0664	-1.9000	0.0578	0.8072	1.4557
Industry	0.3819	0.2684	0.0334	1.4230	0.1551	0.9026	1.1080
Year	6.9590	0.2302	0.6847	30.2296	0.0000*	0.9681	1.0329
Adjust R ²					0.5504		
F-value					62.5622*		
Durbin-Watson					1.8077		

NOTE: * denote significance at the .05 levels.

Table 4.12 presents the correlation between accounting conservatism and cost of equity and the correlation between corporate governance and cost of equity as in Model 8. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R² of the model is 0.5504, which means that the explanatory variables are able to explain the dependent variable by 55.04%

Table 4.12 provides the evidence in regards to the effect of accounting conservatism on cost of equity while controlling corporate governance. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of 0.01.

Table 4.12 also provides evidence of the effect of corporate governance on cost of equity while controlling accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN), and non-board duality (BDU) are not significant.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The coefficient of board expertise (BEX) is negative and significant at a significance level of .05.

Nonetheless, the coefficients of board meeting (BME), and board attendance (BAT) are not significant.

- **Compensation** proxies: board compensation (BCO), and CEO compensation (CCO). The coefficients of board compensation (BCO), and CEO compensation (CCO) are negative and significant at a significance level of .05.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The coefficients of director ownership (DOW), CEO ownership (COW), and family ownership (FOW) are not significant.

- **Audit Committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The coefficient of audit committee size (ASI), and audit committee financial expertise (AEX) are not significant.

In addition, the coefficient of year fixed effect (Year) is positive and significant at a significance level of .05.

Table 4.13 The Direct Effect of Accounting Conservatism and Corporate Governance on Cost of Debt (X, M → Y)

Independent Variables	Model 9 Dependent Variable: Kd					Collinearity Statistics	
	Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept	5.7420	1.0287		5.5816	0.0000*		
CON	-0.1836	0.0244	-0.2459	-7.5378	0.0000*	0.8225	1.2158
BSI	-0.0143	0.0293	-0.0185	-0.4888	0.6251	0.8087	1.6428
BIN	0.6640	0.6067	0.0352	1.0944	0.2741	0.8446	1.1840
BDU	-0.2175	0.1457	-0.0470	-1.4929	0.1358	0.8816	1.1343
BEX	-0.0749	0.0364	-0.0679	-2.0585	0.0398*	0.8056	1.2413
BME	0.0126	0.0206	0.0197	0.6140	0.5394	0.8542	1.1706
BAT	-0.0120	0.0082	-0.0458	-1.4774	0.1399	0.9111	1.0975
BCO	-0.1638	0.0812	-0.0928	-2.0181	0.0439*	0.8142	1.4143
CCO	-0.1988	0.0854	-0.0949	-2.3271	0.0202*	0.8263	1.9000
DOW	-0.0015	0.0046	-0.0172	-0.3344	0.7382	0.8289	1.9402
COW	-0.0123	0.0051	-0.1204	-2.4052	0.0164*	0.8492	1.8638
FOW	0.0019	0.0025	0.0264	0.7297	0.4658	0.8697	1.4933
ASI	-0.0451	0.1583	-0.0089	-0.2849	0.7758	0.8949	1.1174

Table 4.13 The Direct Effect of Accounting Conservatism and Corporate Governance on Cost of Debt (X, M → Y) (Cont.)

Independent Variables	Model 9 Dependent Variable: Kd					Collinearity Statistics	
	Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error	Coefficient (Beta)				
AEX	0.0733	0.1711	0.0129	0.4284	0.6685	0.9724	1.0284
LEV	0.1774	0.0329	0.1661	5.3972	0.0000*	0.9245	1.0817
TAS	-0.0011	0.0554	-0.0010	-0.0206	0.9836	0.8072	1.4557
Industry	-0.6378	0.1317	-0.1508	-4.8433	0.0000*	0.9026	1.1080
Year	0.1076	0.1130	0.0286	0.9525	0.3411	0.9681	1.0329
Adjust R ²					0.2079		
F-value					14.1949*		
Durbin-Watson					1.8283		

NOTE: *, **, and *** denote significance at the 0.05, 0.01, and 0.001 levels, respectively.

Table 4.13 presents the correlation between accounting conservatism and cost of debt, and the correlation between corporate governance and cost of debt as in Model 9. This model was significant at reliability level of 95% (p -value = .05). Thus, this model is statistically valid. The adjusted R^2 of the model is 0.2079, which means that the explanatory variables are able to explain the dependent variable by 20.79%.

Table 4.13 provides evidence of the effect of accounting conservatism on cost of debt while controlling corporate governance. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of .05.

Table 4.8 also provides evidence of the effect of corporate governance on cost of debt while controlling accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The coefficient of board size (BSI), board independence (BIN), and non-board duality (BDU) are not significant.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The coefficient of board expertise (BEX) is negative and significant at a significance level of .05.

Nonetheless, the coefficients of board meeting (BME), and board attendance (BAT) are not significant.

- **Compensation** proxies: board compensation (BCO) and CEO compensation (CCO). The coefficients of board compensation (BCO) and CEO compensation (CCO) are negative and significant at a significance level of .05.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and Family ownership (FOW). The coefficient of CEO ownership (COW) is negative and significant at a significance level of .05.

However, the coefficients of director ownership (DOW), and Family ownership (FOW) are not significant.

- **Audit committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The coefficients of audit committee size (ASI), and audit committee financial expertise (AEX) are not significant.

Moreover, the coefficient of leverage (LEV) is positive and significant at a significance level of .05. However, industry fixed effect (Industry) is negative and significant at a significance level of .05.

Table 4.14 The Direct Effect of Accounting Conservatism and Corporate Governance on Weighted Average Cost of Capital (X, M → Y)

Independent Variables	Model 10 Dependent Variable: WACC					Collinearity Statistics	
	Unstandardized Coefficients		Standardized	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error	Coefficient (Beta)				
Intercept	1.1068	1.7207		0.6432	0.5202		
CON	-0.2359	0.0407	-0.1489	-5.7896	0.0000*	0.8225	1.2158
BSI	0.0290	0.0491	0.0177	0.5915	0.5544	0.8087	1.6428
BIN	0.0068	1.0148	0.0002	0.0067	0.9947	0.8446	1.1840
BDU	-0.2414	0.2436	-0.0246	-0.9910	0.3219	0.8816	1.1343
BEX	-0.1881	0.0609	-0.0804	-3.0912	0.0021*	0.8056	1.2413
BME	0.0657	0.0344	0.0482	1.9109	0.0563	0.8542	1.1706
BAT	-0.0253	0.0136	-0.0454	-1.8567	0.0637	0.9111	1.0975
BCO	-0.5974	0.1358	-0.1595	-4.3998	0.0000*	0.8142	1.4143
CCO	-0.4265	0.1429	-0.0960	-2.9839	0.0029*	0.8263	1.9000
DOW	-0.0008	0.0077	-0.0044	-0.1069	0.9149	0.8289	1.9402
COW	-0.0102	0.0086	-0.0472	-1.1952	0.2323	0.8492	1.8638
FOW	-0.0011	0.0043	-0.0071	-0.2488	0.8036	0.6697	1.4933
ASI	-0.0963	0.2648	-0.0090	-0.3636	0.7162	0.8949	1.1174

Table 4.14 The Direct Effect of Accounting Conservatism and Corporate Governance on Weighted Average Cost of Capital (X, M → Y)
(Cont.)

Independent Variables	Model 10 Dependent Variable: WACC					Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficient (Beta)	t-value	p-value	Tolerance	VIF
	Est. Coe. (B)	Std. Error					
AEX	0.2940	0.2862	0.0243	1.0273	0.3046	0.9724	1.0284
LEV	0.3309	0.0550	0.1461	6.0193	0.0000*	0.9245	1.0817
TAS	0.0871	0.0927	0.0344	0.9396	0.3477	0.8072	1.4557
Industry	-0.3003	0.2203	-0.0335	-1.3635	0.1731	0.9026	1.1080
Year	4.7236	0.1889	0.5928	25.0021	0.0000*	0.9681	1.0329
Adjust R ²					0.5074		
F-value					52.7872*		
Durbin-Watson					1.9290		

NOTE: * denote significance at the .05 levels.

Table 4.14 presents the correlation between accounting conservatism and the weighted average cost of capital and the correlation between corporate governance and the weighted average cost of capital as in Model 10. This model is significant at reliability level of 95% (p-value = .05). Thus, this model is statistically valid. The adjusted R² of the model are 0.5074, which means that the explanatory variables are able to explain the dependent variable by 50.74%.

Table 4.14 provided evidence of the effect of accounting conservatism on weighted average cost of capital while controlling corporate governance. The coefficient of accounting conservatism (CON) is negative and significant at a significance level of .05.

Table 4.14 also provides evidence of the effect of corporate governance on weighted average cost of capital while controlling accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The coefficients of board size (BSI), board independence (BIN), and non-board duality (BDU) are not significant.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The coefficient of board expertise (BEX) is negative, and significant at a significance level of .05.

Nonetheless, the coefficients of board meeting (BME) and board attendance (BAT) are not significant.

- **Compensation** proxies: board compensation (BCO), and CEO compensation (CCO). The coefficients of board compensation (BCO), and CEO compensation (CCO) are negative and significant at a significance level of .05.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The coefficients of director ownership (DOW), CEO ownership (COW), and family ownership (FOW) are not significant.

- **Audit Committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The coefficients of audit committee size (ASI), and audit committee financial expertise (AEX) are not significant.

Moreover, the coefficients of leverage (LEV) and year fixed effect (Year) are positive and significant at a significance level of .05.

4.3.5 Intervening Variables Influence Analysis: the Indirect Effect of Corporate Governance on Cost of Capital through Accounting Conservatism

Bata values from the results of the intervening variables were analyzed based on the concepts of Baron and Kenny (1986), and Frazier, Tix, and Baron (2004) in the 4 steps as shown in Table 4.5 – Table 4.7, Table 4.8, and Table 4.12 – Table 4.14, and concluded in Table 4.15 – 4.17.

The Indirect Effect of Corporate Governance on Cost of Equity through Accounting Conservatism

The values were used to test the indirect effect of corporate governance on cost of capital through accounting conservatism based on assumptions analyzed by types of cost of capital: Hypotheses 24 - Hypotheses 28 are for cost of equity (Ke). The details are as follows:

The beta values in column 3-11 of Table 4.15 were employed to test Hypotheses 24a-24c, 25a-25c, 26a-26b, 27a-27c, and 28a-28b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H24: There is a negative indirect effect of board structure on cost of equity through accounting conservatism.

H24a: There is a negative indirect effect of board size on cost of equity through accounting conservatism.

H24b: There is a negative indirect effect of board independence on cost of equity through accounting conservatism.

H24c: There is a negative indirect effect of non-board duality on cost of equity through accounting conservatism.

H25: There is a negative indirect effect of board activity on cost of equity through accounting conservatism.

H25a: There is a negative indirect effect of board expertise on cost of equity through accounting conservatism.

H25b: There is a negative indirect effect of the board meeting on cost of equity through accounting conservatism.

H25c: There is a negative indirect effect of board attendance on cost of equity through accounting conservatism.

- H26: There is a negative indirect effect of compensation on cost of equity through accounting conservatism.
- H26a: There is a negative indirect effect of board compensation on cost of equity through accounting conservatism.
- H26b: There is a negative indirect effect of CEO compensation on cost of equity through accounting conservatism.
- H27: There is a negative indirect effect of shareholder structure on cost of equity through accounting conservatism.
- H27a: There is a negative indirect effect of director ownership on cost of equity through accounting conservatism.
- H27b: There is a negative indirect effect of CEO ownership on cost of equity through accounting conservatism.
- H27c: There is a negative indirect effect of family ownership on cost of equity through accounting conservatism.
- H28: There is a negative indirect effect of audit committee on cost of equity through accounting conservatism.
- H28a: There is a negative indirect effect of audit committee size on cost of equity through accounting conservatism.
- H28b: There is a negative indirect effect of audit committee financial expertise on cost of equity through accounting conservatism.

Table 4.15 Tests of H24 – H28: the Indirect Effect of Corporate Governance on Cost of Equity through Mediation Role of Accounting Conservatism (X → M → Y)

Independent Variables	Expect Sign	CG → CON → Ke								Indirect effect (11)=(3)-(9)
		CG & Ke	p-value	CG & CON	p-value	CON & Ke	p-value	CG, CON & Ke	p-value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
CON						-0.1042	-4.5009	-0.0753	0.0023*	
BSI	(-)	0.0147	0.6087	0.0006	0.9874			0.0147	0.6058	0.0000
BIN	(-)	-0.0039	0.8739	-0.0097	0.7698			-0.0046	0.8496	0.0007
BDU	(-)	0.0005	0.9826	-0.0555	0.0869			-0.0037	0.8776	0.0042
BEX	(-)	-0.0870	0.0005*	0.0812	0.0165*			-0.0809	0.0012*	-0.0061
BME	(-)	0.0164	0.4951	0.1350	0.0000*			0.0265	0.2713	-0.0102
BAT	(-)	-0.0360	0.1187	0.1818	0.0000*			-0.0223	0.3404	-0.0137
BCO	(-)	-0.1183	0.0006*	0.1822	0.0001*			-0.1045	0.0026*	-0.0137
CCO	(-)	-0.0679	0.0277*	0.0864	0.0392*			-0.0614	0.0460*	-0.0065
DOW	(-)	0.0238	0.5418	-0.0442	0.4051			0.0205	0.5980	0.0033
COW	(-)	-0.0432	0.2545	-0.0298	0.5624			-0.0454	0.2286	0.0022
FOW	(-)	-0.0199	0.4640	0.1101	0.0030*			-0.0117	0.6687	-0.0083
ASI	(-)	-0.0074	0.7536	0.1114	0.0005*			0.0010	0.9659	-0.0084
AEX	(-)	0.0157	0.4879	0.0563	0.0681			0.0200	0.3773	-0.0042

Table 4.15 Tests of H24 – H28: the Indirect Effect of Corporate Governance on Cost of Equity through Mediation Role of Accounting Conservatism (X → M → Y) (Cont.)

Independent Variables	Expect Sign	CG → CON → Ke								Indirect effect (11)=(3)-(9)
		CG & Ke	p-value	CG & CON	p-value	CON & Ke	p-value	CG, CON & Ke	p-value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
LEV		-0.0358	0.1250	-0.0131	0.6794	-0.0262	-1.1436	-0.0367	0.1133	0.0010
TAS		-0.0606	0.0840	-0.0764	0.1089	-0.1800	-7.7461	-0.0664	0.0578	0.0058
Industry		0.0339	0.1509	-0.0066	0.8364	0.0073	0.3234	0.0334	0.1551	0.0005
Year		0.6920	0.0000*	-0.0959	0.0019*	0.6896	30.2653	0.6847	0.0000*	0.0072

NOTE: * denote significance at the .05 levels.



The column (3) – (11) in Table 4.15 presents the indirect effect of corporate governance on cost of equity through accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The results revealed that board structure proxies have no effect on cost of equity (Ke). All of the board structure proxies have no effect on accounting conservatism (CON). Even though accounting conservatism (CON) has an effect on cost of equity (Ke) while controlling corporated governance, accounting conservatism (CON) is not an intervening variable between board structure proxies and cost of equity (Ke). Thus, the Hypotheses H24a to H24c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The results revealed that board expertise (BEX) has an effect on cost of equity (Ke), board expertise (BEX) has an effect on accounting conservatism (CON), accounting conservatism (CON) has an effect on cost of equity (Ke) while controlling corporated governance. Moreover, board expertise (BEX) has an effect on cost of equity (Ke) while controlling accounting conservatism (CON). This means accounting conservatism (CON) is an intervening variable between board expertise (BEX) and cost of equity (Ke), and is a partial mediation with the effect size of -0.0061. Thus, the Hypothesis H25a is supported.

Nonetheless, board meeting (BME) and board attendance (BAT) have no effect on cost of equity (Ke). Even though board meeting (BME) and board attendance (BAT) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on cost of equity (Ke) while controlling corporated governance, accounting conservatism (CON) is not the intervening variable between board meeting (BME), board attendance (BAT), and cost of equity (Ke). Thus, the hypotheses H25b to H25c are not supported.- **Compensation** proxies: board compensation (BCO), and CEO compensation (CCO). The results revealed that board compensation (BCO) and CEO compensation (CCO) have an effect on cost of equity (Ke). Board compensation (BCO) and CEO compensation (CCO) have an effect on accounting conservatism (CON). Accounting conservatism (CON) has an effect on cost of equity while controlling corporated governance. Moreover, board compensation (BCO) and CEO compensation (CCO) have an effect on cost of equity (Ke) while controlling accounting conservatism (CON). It shows that accounting conservatism (CON) is the intervening variable between

Board compensation (BCO), CEO compensation (CCO) and cost of equity (Ke). It is also a partial mediation with the effect size of -0.0137 and -0.0065 respectively. Thus, the hypotheses H26a to H26b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The results revealed that shareholder structure proxies have no effect on cost of equity (Ke). Even though family ownership (FOW) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on cost of equity (Ke) while controlling corporate governance, accounting conservatism (CON) is not the intervening variable between shareholder structure proxies and cost of equity (Ke). Thus, the hypotheses H27a to H27c are not supported.

- **Audit Committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The results revealed that audit committee proxies have an effect on cost of equity (Ke). Even though audit committee size (ASI) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on cost of equity (Ke) while controlling corporate governance, accounting conservatism (CON) is not the intervening variable between audit committee proxies and cost of equity (Ke). Thus, the hypotheses H28a to H28b are not supported.

The Indirect Effect of Corporate Governance on Cost of Debt through Accounting Conservatism

The values were used to test the indirect effect of corporate governance on cost of capital through accounting conservatism based on assumptions analyzed by types of cost of capital: Hypotheses 29 - Hypotheses 33 are for cost of debt (Kd). The details are as follows:

The beta values in column 3-11 of Table 4.16 were employed to test Hypotheses 29a-29c, 30a-30c, 31a-31b, 32a-32c, and 33a-33b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H29: There is a negative indirect effect of board structure on cost of debt through accounting conservatism.

H29a: There is a negative indirect effect of board size on cost of debt through accounting conservatism.

- H29b: There is a negative indirect effect of board independence on cost of debt through accounting conservatism.
- H29c: There is a negative indirect effect of the non-board duality on cost of debt through accounting conservatism.
- H30: There is a negative indirect effect of board activity on cost of debt through accounting conservatism.
- H30a: There is a negative indirect effect of the board expertise on cost of debt through accounting conservatism.
- H30b: There is a negative indirect effect of the board meeting on cost of debt through accounting conservatism.
- H30c: There is a negative indirect effect of board attendance on cost of debt through accounting conservatism.
- H31: There is a negative indirect effect of compensation on cost of debt through accounting conservatism.
- H31a: There is a negative indirect effect of board compensation on cost of debt through accounting conservatism.
- H31b: There is a negative indirect effect of CEO compensation on cost of debt through accounting conservatism.
- H32: There is a negative indirect effect of shareholder structure on cost of debt through accounting conservatism.
- H32a: There is a negative indirect effect of director ownership on cost of debt through accounting conservatism.
- H32b: There is a negative indirect effect of CEO ownership on cost of debt through accounting conservatism.
- H32c: There is a negative indirect effect of family ownership on cost of debt through accounting conservatism.
- H33: There is a negative indirect effect of audit committee on cost of debt through accounting conservatism.
- H33a: There is a negative indirect effect of the audit committee size on cost of debt through accounting conservatism.
- H33b: There is a negative indirect effect of audit committee financial expertise on cost of debt through accounting conservatism.

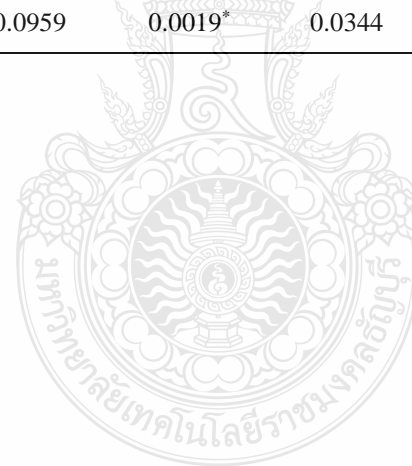
Table 4.16 Tests of H24 – H38: the Indirect Effect of Corporate Governance on Cost of Debt through Mediation Role of Accounting Conservatism (X → M → Y)

Independent Variables	Expect Sign	CG → CON → Kd								
		CG & Kd	p-value	CG & CON	p-value	CON & Kd	p-value	CG, CON & Kd	p-value	Indirect effect
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)=(3)-(9)
CON						-0.2826	0.0000*	-0.2459	0.0000*	
BSI	(-)	-0.0187	0.6327	0.0006	0.9874			-0.0185	0.6251	-0.0002
BIN	(-)	0.0376	0.2573	-0.0097	0.7698			0.0352	0.2741	0.0024
BDU	(-)	-0.0334	0.3033	-0.0555	0.0869			-0.0470	0.1358	0.0136
BEX	(-)	-0.0878	0.0097*	0.0812	0.0165*			-0.0679	0.0398*	-0.0200
BME	(-)	-0.0136	0.6785	0.1350	0.0000*			0.0197	0.5394	-0.0332
BAT	(-)	-0.0905	0.0040*	0.1818	0.0000*			-0.0458	0.1399	-0.0447
BCO	(-)	-0.1376	0.0035*	0.1822	0.0001*			-0.0928	0.0439*	-0.0448
CCO	(-)	-0.1162	0.0057*	0.0864	0.0392*			-0.0949	0.0202*	-0.0213
DOW	(-)	-0.0064	0.9045	-0.0442	0.4051			-0.0172	0.7382	0.0109
COW	(-)	-0.1131	0.0287*	-0.0298	0.5624			-0.1204	0.0164*	0.0073
FOW	(-)	-0.0007	0.9851	0.1101	0.0030*			0.0264	0.4658	-0.0271
ASI	(-)	-0.0363	0.2571	0.1114	0.0005*			-0.0089	0.7758	-0.0274
AEX	(-)	-0.0010	0.9746	0.0563	0.0681			0.0129	0.6685	-0.0138

Table 4.16 Tests of H24 – H38: the Indirect Effect of Corporate Governance on Cost of Debt through Mediation Role of Accounting Conservatism (X → M → Y)

Independent Variables	Expect Sign	CG → CON → Kd								Indirect effect (11)=(3)-(9)
		CG & Kd	p-value	CG & CON	p-value	CON & Kd	p-value	CG, CON & Kd	p-value	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
LEV		0.1693	0.0000*	-0.0131	0.6794	0.1830	0.0000*	0.1661	0.0000*	0.0032
TAS		0.0178	0.7087	-0.0764	0.1089	-0.1293	0.0000*	-0.0010	0.9836	0.0188
Industry		-0.1492	0.0000*	-0.0066	0.8364	-0.1902	0.0000*	-0.1508	0.0000*	0.0016
Year		0.0522	0.0906	-0.0959	0.0019*	0.0344	0.2577	0.0286	0.3411	0.0236

NOTE: * denote significance at the .05 levels.



The column (3) – (11) in Table 16 presents the indirect effect of corporate governance on cost of debt through accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN) and non-board duality (BDU). The results revealed that board Structure proxies have an effect on cost of debt (Kd). Board structure proxies have no effect on accounting conservatism (CON). Even though accounting conservatism (CON) has an effect on cost of debt (Kd) while controlling corporated governance, accounting conservatism (CON) is not the intervening variable between board structure proxies and cost of debt (Kd). Thus, the hypotheses H29a to H29c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME) and board attendance (BAT). The results revealed that board expertise (BEX) and board attendance (BAT) have an effect on cost of debt (Kd). Moreover, board expertise (BEX) and board attendance (BAT) have an effect on accounting conservatism (CON). Accounting conservatism (CON) has an effect on cost of debt (Kd) while controlling corporate governance. Board expertise (BEX) still has an effect on cost of debt (Kd), but board attendance (BAT) has no effect on cost of debt (Kd) while controlling accounting conservatism (CON). It shows that accounting conservatism (CON) is the intervening variable between board expertise (BEX) and cost of debt (Kd), and also a partial mediation with the effect size of -0.0200. Thus, the hypotheses H30a are supported. In addition, it clearly shows that accounting conservatism (CON) is the intervening variable between board attendance (BAT) and cost of debt (Kd), and also a full mediation with the effect size of -0.0447. Thus, the hypotheses H30c is supported.

Nonetheless, board meeting (BME) has no effect on cost of debt (Kd). Even though board meeting (BME) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on cost of debt while controlling corporated governance, accounting conservatism (CON) is not the intervening variable between board meeting (BME) and cost of debt. Thus, the hypotheses H30b is not supported.

- **Compensation** proxies: board compensation (BCO), and CEO compensation (CCO). The results revealed that board compensation (BCO) and CEO compensation (CCO) have an effect on cost of debt (Kd), board compensation (BCO) and CEO compensation (CCO) have an effect on accounting conservatism (CON), accounting conservatism (CON) has an effect on cost of debt (Kd) while controlling corporated governance. Moreover, board compensation (BCO) and CEO compensation (CCO) also have an effect on cost of debt (Kd) while controlling accounting conservatism (CON). It shows that accounting conservatism (CON) is the intervening variable between board

compensation (BCO), CEO compensation (CCO), and Cost of debt (Kd). It is also a partial mediation with the effect size of -0.0448 and -0.0213 respectively. Thus, the hypotheses H31a to H31b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The results revealed that shareholder structure proxies have no effect on cost of equity (Kd). Accounting conservatism (CON) is not the intervening variable between Shareholder structure proxies and cost of debt (Kd) even though family ownership (FOW) has an effect on accounting conservatism (CON), accounting conservatism (CON) has an effect on cost of debt (Kd) while controlling corporated governance (CON), and CEO ownership (COW) has an effect on cost of debt (Kd) while controlling accounting conservatism (CON). Thus, the hypotheses H32a to H32c are not supported.

- **Audit Committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The results revealed that audit committee proxies have no effect on cost of debt (Kd). Accounting conservatism (CON) is not the intervening variable between audit committee proxies and cost of debt (Kd) even though audit committee size (ASI) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on cost of debt (Kd) while controlling corporated governance. Therefore, the hypotheses H33a to H33b were not supported.

The Indirect Effect of Corporate Governance on Weighted Average Cost of Capital through Accounting Conservatism

The values were used to test the indirect effect of corporate governance on cost of capital through accounting conservatism based on assumptions analyzed by types of cost of capital: Hypoteses 24 - Hypoteses 38 are for weighted average cost of capital (WACC). The details are as follows:

The beta values in column 3-11 of Table 4.17 were employed to test hypotheses 34a-34c, 35a-35c, 36a-36b, 37a-37c, and 38a-38b, which are the main issues of the test. There are signs and significance of the coefficient of variables that are of interest.

H34: There is a negative indirect effect of board structure on weighted average cost of capital through accounting conservatism.

H34a: There is a negative indirect effect of board size on weighted average cost of capital through accounting conservatism.

H34b: There is a negative indirect effect of board independence on weighted average cost of capital through accounting conservatism.

- H34c: There is a negative indirect effect of the non-board duality on weighted average cost of capital through accounting conservatism.
- H35: There is a negative indirect effect of board activity on weighted average cost of capital through accounting conservatism.
- H35a: There is a negative indirect effect of board expertise on weighted average cost of capital through accounting conservatism.
- H35b: There is a negative indirect effect of board meeting on weighted average cost of capital through accounting conservatism.
- H35c: There is a negative indirect effect of board attendance on weighted average cost of capital through accounting conservatism.
- H36: There is a negative indirect effect of compensation on weighted average cost of capital through accounting conservatism.
- H36a: There is a negative indirect effect of board compensation on weighted average cost of capital through accounting conservatism.
- H36b: There is a negative indirect effect of CEO compensation on weighted average cost of capital through accounting conservatism.
- H37: There is a negative indirect effect of shareholder structure on weighted average cost of capital through accounting conservatism.
- H37a: There is a negative indirect effect of director ownership on weighted average cost of capital through accounting conservatism.
- H37b: There is a negative indirect effect of CEO ownership on weighted average cost of capital through accounting conservatism.
- H37c: There is a negative indirect effect of family ownership on weighted average cost of capital through accounting conservatism.
- H38: There is a negative indirect effect of audit committee on weighted average cost of capital through accounting conservatism.
- H38a: There is a negative indirect effect of audit committee size on weighted average cost of capital through accounting conservatism.
- H38b: There is a negative indirect effect of audit committee financial expertise on weighted average cost of capital through accounting conservatism.

Table 4.17 Tests of H24 – H38: the Indirect Effect of Corporate Governance on Weighted Average Cost of Capital through Mediation
Role of Accounting Conservatism (X → M → Y)

Independent Variables	Expect Sign	CG → CON → WACC								
		CG & WACC	p-value	CG & CON	p-value	CON & WACC	p-value	CG, CON & WACC	p-value	Indirect effect
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)=(3)-(9)
CON						-0.1915	0.0000*	-0.1489	0.0000*	
BSI	(-)	0.0176	0.5635	0.0006	0.9874			0.0177	0.5544	-0.0001
BIN	(-)	0.0016	0.9502	-0.0097	0.7698			0.0002	0.9947	0.0014
BDU	(-)	-0.0164	0.5172	-0.0555	0.0869			-0.0246	0.3219	0.0083
BEX	(-)	-0.0924	0.0005*	0.0812	0.0165*			-0.0804	0.0021*	-0.0121
BME	(-)	0.0281	0.2695	0.1350	0.0000*			0.0482	0.0563	-0.0201
BAT	(-)	-0.0725	0.0031*	0.1818	0.0000*			-0.0454	0.0637	-0.0271
BCO	(-)	-0.1866	0.0000*	0.1822	0.0001*			-0.1595	0.0000*	-0.0271
CCO	(-)	-0.1088	0.0009*	0.0864	0.0392*			-0.0960	0.0029*	-0.0129
DOW	(-)	0.0022	0.9571	-0.0442	0.4051			-0.0044	0.9149	0.0066
COW	(-)	-0.0427	0.2878	-0.0298	0.5624			-0.0472	0.2323	0.0044
FOW	(-)	-0.0235	0.4162	0.1101	0.0030*			-0.0071	0.8036	-0.0164
ASI	(-)	-0.0256	0.3056	0.1114	0.0005*			-0.0090	0.7162	-0.0166
AEX	(-)	0.0159	0.5079	0.0563	0.0681			0.0243	0.3046	-0.0084

Table 4.17 Tests of H24 – H38: the Indirect Effect of Corporate Governance on Weighted Average Cost of Capital through Mediation Role of Accounting Conservatism (X → M → Y) (Cont.)

Independent Variables	Expect Sign	CG → CON → WACC								
		CG & WACC	p-value	CG & CON	p-value	CON & WACC	p-value	CG, CON & WACC	p-value	Indirect effect
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)=(3)-(9)
LEV		0.1480	0.0000*	-0.0131	0.6794	0.1627	0.0000*	0.1461	0.0000*	0.0019
TAS		0.0457	0.2189	-0.0764	0.1089	-0.1271	0.0000*	0.0344	0.3477	0.0114
Industry		-0.0325	0.1940	-0.0066	0.8364	-0.0698	0.0039*	-0.0335	0.1731	0.0010
Year		0.6071	0.0000*	-0.0959	0.0019*	0.5961	0.0000*	0.5928	0.0000*	0.0143

NOTE: * denote significance at the .05 levels.



The column (3) – (11) in Table 4.17 presents the indirect effect of corporate governance on weighted average cost of capital (WACC) through accounting conservatism.

- **Board Structure** proxies: board size (BSI), board independence (BIN), and non-board duality (BDU). The results revealed that board structure proxies have no effect on weighted average cost of capital (WACC), and board structure proxies have no an effect on accounting conservatism (CON). Accounting conservatism (CON) is not the intervening variable between board structure proxies and weighted average cost of capital (WACC) even though accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporated governance (CON). Thus, the hypotheses H34a to H34c are not supported.

- **Board Activity** proxies: board expertise (BEX), board meeting (BME), and board attendance (BAT). The results revealed that board expertise (BEX) and board attendance (BAT) have an effect on weighted average cost of capital (WACC). Board expertise (BEX) and board attendance (BAT) have an effect on accounting conservatism (CON). Accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporate governance, and board expertise (BEX) still has an effect on weighted average cost of capital (WACC). However, board attendance (BAT) has no effect on weighted average cost of capital (WACC) while controlling accounting conservatism (CON). It shows that accounting conservatism (CON) is the intervening variable between board expertise (BEX) and weighted average cost of capital (WACC), and is a partial mediation with the effect size of -0.0121. Thus, the hypothesis H35a is supported. In addition, it clearly shows that accounting conservatism (CON) is the intervening variable board attendance (BAT) and weighted average cost of capital (WACC), and also a full mediation with the effect size of -0.0271. Thus, the hypotheses H35c is supported.

Nonetheless, board meeting (BME) and board attendance (BAT) have no effect on weighted average cost of capital (WACC). Accounting conservatism (CON) is not the intervening variable between board meeting (BME), board attendance (BAT), and weighted average cost of capital (WACC) even though board meeting (BME) and board attendance (BAT) have an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporated governance. Thus, the hypotheses H35b to H35c are not supported.

- **Compensation** proxies: board compensation (BCO) and CEO compensation (CCO). The results revealed that board compensation (BCO) and CEO compensation (CCO) have an effect on weighted average cost of capital (WACC), board compensation (BCO) and CEO compensation (CCO) also have an effect on accounting conservatism (CON), accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporated governance, and board compensation (BCO) and CEO compensation (CCO) still have an effect on weighted average cost of capital (WACC) while controlling accounting conservatism (CON). It shows that accounting conservatism (CON) is the intervening variable between board compensation (BCO), CEO compensation (CCO), and weighted average cost of capital (WACC). It is also a partial mediation with the effect size of -0.0271 and -0.0129 respectively. Thus, the hypotheses H36a to H36b are supported.

- **Shareholder Structure** proxies: director ownership (DOW), CEO ownership (COW), and family ownership (FOW). The results revealed that shareholder structure proxies have no effect on weighted average cost of capital (WACC). Accounting conservatism (CON) is not the intervening variable between shareholder structure proxies and weighted average cost of capital (WACC) even though family ownership (FOW) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporated governance. Thus, the hypotheses H37a to H37c are not supported.

- **Audit Committee** proxies: audit committee size (ASI), and audit committee financial expertise (AEX). The results revealed that audit committee proxies have no effect on weighted average cost of capital (WACC). Accounting conservatism (CON) is not the intervening variable between audit committee proxies and weighted average cost of capital (WACC) even though audit committee size (ASI) has an effect on accounting conservatism (CON), and accounting conservatism (CON) has an effect on weighted average cost of capital (WACC) while controlling corporated governance. Thus, the hypotheses H38a to H38b are not supported.

4.4 Conclusion

The results of the mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital can be concluded as follows:



Table 4.18 Results of Hypothesis Testing

Hypotheses	Cost of Equity		Cost of Debt		Weighted Average Cost of Capital		Accounting Conservatism
	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect
There is an effect of corporate governance on cost of capital / accounting conservatism							
- Board size on cost of capital / accounting conservatism	H1a (-) *	H24a * (-)	H6a * (-)	H29a * (-)	H11a * (-)	H34a * (-)	H16a * (+)
- Board independence on cost of capital / accounting conservatism	H1b * (-)	H24b * (-)	H6b * (-)	H29b * (-)	H11b * (-)	H34b * (-)	H16b * (+)
- Non-Board duality on cost of capital / accounting conservatism	H1c * (-)	H24c * (-)	H6c * (-)	H29c * (-)	H11c * (-)	H34c * (-)	H16c * (+)
- Board expertise on cost of capital / accounting conservatism	H2a ✓ (-)	H25a ✓ (-)	H7a ✓ (-)	H30a ✓ (-)	H12a ✓ (-)	H35a ✓ (-)	H17a ✓ (+)

Table 4.18 Results of Hypothesis Testing (Cont.)

Hypotheses	Cost of Equity		Cost of Debt		Weighted Average Cost of Capital		Accounting Conservatism							
	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect							
- Board meeting on cost of capital / accounting conservatism	H2b (-)	✗ (-)	H25b (-)	✗ (-)	H7b (-)	✗ (-)	H30b (-)	✗ (-)	H12b (-)	✗ (-)	H35b (-)	✗ (-)	H17b (+)	✓
- Board attendance on cost of capital / accounting conservatism	H2c (-)	✗ (-)	H25c (-)	✗ (-)	H7c (-)	✓ (-)	H30c (-)	✓ (-)	H12c (-)	✓ (-)	H35c (-)	✓ (-)	H17c (+)	✓
- Board compensation on cost of capital / accounting conservatism	H3a (-)	✓ (-)	H26a (-)	✓ (-)	H8a (-)	✓ (-)	H31a (-)	✓ (-)	H13a (-)	✓ (-)	H36a (-)	✓ (-)	H18a (+)	✓
- CEO compensation on cost of capital / accounting conservatism	H3b (-)	✓ (-)	H26b (-)	✓ (-)	H8b (-)	✓ (-)	H31b (-)	✓ (-)	H13b (-)	✓ (-)	H36b (-)	✓ (-)	H18b (+)	✓
- Director ownership on cost of capital / accounting conservatism	H4a (-)	✗ (-)	H27a (-)	✗ (-)	H9a (-)	✗ (-)	H32a (-)	✗ (-)	H14a (-)	✗ (-)	H37a (-)	✗ (-)	H19a (+)	✗
- CEO ownership on cost of capital / A accounting conservatism	H4b (-)	✗ (-)	H27b (-)	✗ (-)	H9b (-)	✓ (-)	H32b (-)	✗ (-)	H14b (-)	✗ (-)	H37b (-)	✗ (-)	H19b (+)	✗

Table 4.18 Results of Hypothesis Testing (Cont.)

Hypotheses	Cost of Equity				Cost of Debt				Weighted Average Cost of Capital				Accounting Conservatism	
	Direct effect		Indirect effect		Direct effect		Indirect effect		Direct effect		Indirect effect		Direct effect	
- Family ownership on cost of capital / accounting conservatism	H4c	✗	H27c	✗	H9c	✗	H32c	✗	H14c	✗	H37c	✗	H19c	✓
	(-)		(-)		(-)		(-)		(-)		(-)		(+)	
- Audit committee size on cost of capital / accounting conservatism	H5a	✗	H28a	✗	H10a	✗	H33a	✗	H15a	✗	H38a	✗	H20a	✓
	(-)		(-)		(-)		(-)		(-)		(-)		(+)	
- Audit committee financial expertise on cost of capital / accounting conservatism	H5b	✗	H28b	✗	H10b	✗	H33b	✗	H15b	✗	H38b	✗	H20b	✗
	(-)		(-)		(-)		(-)		(-)		(-)		(+)	
There is an effect of accounting conservatism on cost of capital	H21	✓			H22	✓			H23	✓				
	(-)				(-)				(-)					

NOTE: (+) = positive effect hypotheses, (-) = negative effect hypotheses, ✓ = accepted hypotheses, ✗ = rejected hypotheses

CHAPTER5

CONCLUSION AND RECOMMENDATIONS

Chapter 5 of the study on the mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital is divided into 4 parts as follows:

- 5.1 Conclusion
- 5.2 Discussion
- 5.3 Contributions of the Study
- 5.4 Research Limitations and Recommendations for Future Research

5.1 Conclusion

This research aims to investigate the effect of corporate governance and accounting conservatism affecting cost of capital of listed companies in the stock exchange of Thailand from 2018 to 2019.

The total population included 789 firms, and 451 firm year observations in 2018 and 455 firm year observations in 2019 were selected as the sample of firms. The data of each firm was collected from the annual registration statement (Form 56-1) and its annual report. Descriptive statistics and multiple regressions were used to analyze and test the effect between independent variables, mediator variable, and dependent variables.

The research questions as shown in Chapter 1 are as follows:

Research Question 1: Does corporate governance have a direct effect on cost of capital?

Research Question 2: Does corporate governance have a direct effect on accounting conservatism?

Research Question 3: Does accounting conservatism have a direct effect on cost of capital?

Research Question 4: Does corporate governance have an indirect effect on cost of capital through mediation role of accounting conservatism?

Corporate governance in this research consists of 5 principles:

1. Board Structure - board size, board independence, and non-board duality were used as proxies,
2. Board Activity - board expertise, board meeting, and board attendance were used as proxies,
3. Compensation - board compensation, and CEO compensation were used as proxies,
4. Shareholder structure - director ownership, CEO ownership, and family ownership were used as proxies, and
5. Audit committee - audit committee size, and audit committee financial expertise were used as proxies.

These principles are independent variables, while cost of capital is a dependent variable. Cost of capital consists of cost of equity measured by Capital Asset Pricing Model: CAPM developed by Sharpe (1964), cost of debt measured by the interest expense of the interest-bearing debt, and weighted average cost of capital measured by the average cost of capital of shareholders and creditors. In addition, accounting conservatism is used as the mediator variable. Accounting conservatism in this study derived from the concept of conditional conservatism introduced by Basu (1997) to suggest that firms that apply accounting conservatism with regard to the uncertainty of economic events can reduce risks among investors and creditors.

The results showed that the hypothetical model was consistent with the empirical data. As mentioned in Chapter 4, 10 research models derived from the relevant literature and research questions, and this study focuses on the characteristics of mediator variables based on the theory of Baron and Kenny (1986).

The issue of "corporate governance had a negative direct effect on cost of capital" was measured by cost of equity, cost of debt, and weighted average cost of capital. It was found that independent variables of corporate governance, such as board expertise, board compensation, and CEO compensation had a negative and significant effect on cost of equity, cost of debt and weighted average cost of capital. Moreover, CEO ownership as an independent variable had a negative and significant effect on cost of debt.

The results showed that corporate governance had a positive and significant effect on accounting conservatism. Apparently, independent variables of corporate governance, such as board expertise, board meeting, board attendance, board compensation, CEO compensation, family ownership and audit committee size had a positive and statistically significant effect on accounting conservatism as the mediator variables.

The results also showed that accounting conservatism had a negative and significant effect on cost of capital. This was measured by cost of equity, cost of debt and weighted average cost of capital.

Moreover, independent variables of corporate governance, such as board expertise, board compensation, and CEO compensation influenced cost of equity, cost of debt, and weighted average cost of capital when the accounting conservatism was controlled. Therefore, it could be concluded that corporate governance had an indirect effect on cost of capital through mediation role of accounting conservatism in the form of partial mediation.

5.2 Discussion

The results of the study on the mediating effects of accounting conservatism on the relationship between corporate governance and cost of capital are discussed in relation to the objectives of this study as follows:

5.2.1 To Examine the Direct Effect of Corporate Governance on Cost of Capital

The first objective of this study was to examine the direct effect of board structure, board activity, compensation, shareholder structure, and audit committee on cost of capital. After examining, the results of Hypothesis from H1 to H15 show that board structure: board size, board independence and non-board duality had no significant influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 1, 6 and 11 were rejected. The key reason is that large committees faced difficulties in regards to cooperation which might cause free rider problem (Forbes & Milliken, 1999) and lead to delays in decision making (Lorca, Sanchez-Ballesta, & Garcia-Meca, 2011; Yermack, 1996). In firms with severe conflict

of interests between shareholders and bondholders, the performance of independent board may benefit shareholders, but cause disadvantages to bondholders and increase agency costs of debt (Jensen & Meckling, 1976; Myers, 1977). According to the Stock Exchange of Thailand, the chairman can be the CEO of the firm on the condition that there must be an independent committee of not less than half, which may cause a managerial and controlling monopoly (Daghani, Zouhayer, & Mbarek, 2016). Similarly, Hassan, Kayani, and Ayub (2018) found no influence of board size, Setiany, Suhardjanto, Lukviarman, and Hartoko (2017) found no influence of board independence, and Ali, Yang, Sarwar, and Ali (2019) found no influence of non-board duality on cost of capital.

Board expertise, as a component of board activity, had a negative and significant influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 2a, 7a and 12a were accepted. This is in line with resource dependence. In other words, directors serve to connect the firm with external factors that generate uncertainty and external dependencies (Hillman, Cannella, & Paetzold, 2000), and bring resources, such as skills, information, ties, reputation and credibility to the firm, which can reduce the cost of capital. This is also consistent with Goncalves, Rossoni, and Mendes-Da-Silva (2019), and Fields, Fraser, and Subrahmanyam (2012). In addition, board attendance as a component of board activity, had a negative and significant influence on cost of capital measured by cost of debt and weighted average cost of capital. Thus, Hypothesis 7c and 12c were accepted.

However, board meeting and board attendance, as the components of board activity, had no significant influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 2b, 7b, 12b, and 2c were rejected. This is because the board of directors' meeting could resolve issues and enhance the next-year performance (Vafeas, 1999). In case the firm sets the attendance level, some directors who are unable to attend the meeting (Min & Chizema, 2018) may authorize their representatives to attend such meeting. However, their representatives cannot perform their duties as decent as directors (Chou, Chung, & Yin, 2013), and it does not reduce cost of capital of the firm. This is in line with Hassan et al. (2018), Utami and Pernamasari (2020), and Srivastava (2019), who found no influence of board meeting,

and Jantadej and Wattanatorn (2020) found no influence of board attendance on cost of capital.

Compensation, which consists of board compensation and CEO compensation, had a negative influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 3, 8 and 13 were accepted. Similar to agency theory, firms with agency problems often pay large commissions (Andreas, Rapp, & Wolff, 2012) to reflect good corporate governance to investors and creditors, which results in low capital costs. This is consistent with Tran (2014), and Sengupta and Zhang (2014). In addition, an incentive pay to the CEO can have competing effects, build confidence among investors and reduce cost of equity (Sharma, Sharma, Tanyi, & Cheng, 2020). This is in line with Bizjak, Kalpathy, and Mihov (2019), and Kabir, Li, and Veld-Merkoulova (2013), who found that CEO compensation reduced cost of debt.

Shareholder structure, which consists of director ownership, CEO ownership and family ownership, had no significant influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 4a, 9a, 14a, 4b, 14b, 4c, 9c and 14c were rejected. If the executive director or CEO considered as the insider has excessive ownership, may insulate managers from outside shareholder monitoring (Pham, Suchard, & Zein, 2012). Furthermore, family ownership also causes weakness in the matter of informativeness of reported earnings to outside investors (Vichitsarawong, Eng, & Meek, 2010), which cannot reduce cost of capital. Similarly, Ali et al. (2019) found no influence of director ownership, Khlif, Samaha, and Azzam (2015) found no influence of CEO ownership, and Boubakri, Guedhami, and Mishra (2010) found no influence of family ownership on cost of capital.

However, an increase in the number of shares held by the executive management of the firm may assure creditors with lower default risks, which can reduce cost of debt for the firm (Gao, 2020). Thus, Hypothesis 9b was accepted. This is in line with Lugo (2019), who found that the relationship between CEO ownership and the firm's cost of borrowing is in the form of inverse U-shaped. In other words, there is a positive relationship when insider ownership is low. However, such relationship becomes negative at certain point.

Audit committee, which consists of audit committee size and audit committee financial expertise, had no significant influence on cost of capital measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 5, 10 and 15 were rejected. Investors and creditors consider knowledge and experience of the audit committee rather than the number of audit committee and their financial expertise. To meet the minimum criteria set by the Capital Market Supervisory Board (CMSB), firms have a similar number of audit committee, namely at least 3 auditors and at least 1 person with sufficient knowledge and experience to review the reliability of the financial statements (The Securities and Exchange Commission (SEC), 2017). This is consistent with Dao, Huang, Huang, Zhu, (2013), who found no influence of audit committee size. Similarly, Limpabandh and Issarawornrawanich (2016), and Khemakhem and Naciri (2015) found no influence of audit committee financial expertise on cost of capital.

5.2.2 To Examine the Direct Effect of Corporate Governance on Accounting Conservatism

The second objective of this study was to examine the direct effect of board structure, board activity, compensation, shareholder structure and audit committee on accounting conservatism. After examining, the results of Hypothesis from H16 to H20 show that board structure: board size, board independence and non-board duality had no influence on accounting conservatism. This, Hypothesis 16 was rejected. The reason is that in the case of a large board of committee, each director may expect other directors to act on his or her behalf (Yermack, 1996). According to Governance Code for listed companies 2017, the number of independent directors shall be more than half if the Chairman is also the CEO of the firm (approximately 20.29%, as reported in Chapter 4) (The Securities and Exchange Commission (SEC), 2017). In case independent directors lack of real independence, time, as well as not enough information (Amran & Manaf, 2014), it would cause inefficiency in audits. This is in line with Yunos, Ahmad, and Sulaiman (2014), who found no influence of board size. Furthermore, Boussaid, Hamza, and Sougne (2015), and Sultana (2015) found no influence of board independence. Similarly, Boonlert-U-Thai and Phakdee (2018), Boussaid et al. (2015), Yunos et al. (2014) and Nasr and Ntim (2018) found no influence of non-board duality on cost of capital.

Board activities, which consists of board expertise, board meeting and board attendance, had a positive influence on accounting conservatism. Thus, Hypothesis 17 was accepted. According to resource dependence theory, directors are responsible for connecting the firm with uncertain external factors and external dependencies. Effective uncertainty management leads to power and increases survival likelihood (Hillman et al., 2000). The directors will monitor the firm policies assigned to the management through meetings. The directors' participation in the financial reporting process discussion will encourage the management to create more accounting conservatism practices and report quality profit data (Cahyani & Khafid, 2020; Nariman & Ekadjaja, 2018). This is in line with Yunos et al. (2014), Enache and Garcia-Meca (2019) and Al-Absy, Ismail, and Chandren (2019), who found a positive influence of Board expertise. Similarly, Sultana (2015), and Boussaid et al. (2015) found a positive influence of Board meeting, and Saeed (2020) found a positive influence of Board attendance on accounting conservatism.

Compensation, which consists of board compensation and CEO compensation, had a positive influence on accounting conservatism. Thus, Hypothesis 18 was accepted. In fact, high compensation to the directors encourages them to sufficiently supervise the management, which strengthens the alignment of directors and shareholders. The directors concentrate on accounting conservatism in order to reduce information asymmetry between managers and shareholders. In addition, accounting conservatism is increasingly preferred in firms with a management compensation policy based on accounting profits to prevent overpaying executives (Blunck & Rego, 2013). The results of this study are consistent with Jeong and Kim (2013) and Iwasaki, Otomasa, Shiiba, and Shuto (2018), who found a positive influence of board compensation. In addition, Leonea, Wub, and Zimmerman (2006), Zhang, Gao, and Zeng (2019), Li, Henry, and Wu (2020), Hu and Jiang (2018), and Brockman, Ma, and Ye (2015) also found a positive influence of CEO compensation on accounting conservatism.

Director ownership and CEO ownership, as the components of shareholder structure, had no significant influence on accounting conservatism. Thus, Hypothesis 19a and 19b were rejected. Firms with director ownership and CEO ownership structure can help align manager interests with shareholder interests in accordance with incentive alignment effect (Chou, 2015; Jensen & Mecking, 1976; Jensen & Murphy, 1990).

Therefore, it is not necessary to seriously apply the principles of accounting conservatism. This is consistent with Suleiman (2014), and Enache and Garcia-Meca (2019), who found no influence of directors ownership. Moreover, LaFond and Roychowdhury (2008), and Ursula and Adhivinna (2018) found no influence of CEO ownership on accounting conservatism. However, family ownership which is the component of shareholder structure has a positive influence on accounting conservatism. Thus, Hypothesis 19c was accepted. It was found that family ownership aims at long-term benefits, and the management is motivated to report quality profits for the family's reputation (Cascino, Pugliese, Mussolino, & Sansone, 2010). This is in line with Boonlert-U-Thai and Kuntisook (2009), Chen et al. (2014), Marzuki and Wahab (2016), Mohammed et al. (2019), Alves (2019) and Memon et al. (2020), who found that family ownership had a positive influence on accounting conservatism.

Audit committee size, as a component of audit committee, had a positive influence on accounting conservatism. Thus, Hypothesis 20a was accepted. According to the survey of 1,200 audit committee in 17 countries conducted by KPMG (2006), the audit committee encounter greater risk of financial litigation than other members of the firm. Thus, it is necessary to promote conservatism in financial reporting. This is in accordance with Salama and Putnam (2015) and Dao, HassabElnaby, and Said (2015), who found that audit committee size had a positive influence on accounting conservatism. However, audit committee financial expertise had no significant influence on accounting conservatism. Thus, Hypothesis 20b was rejected. The reason is that accounting conservatism was eliminated the Conceptual Framework for Financial Reporting by the Financial Accounting Standard Board (FASB) in 2010 due to the inequality of neutrality of financial reports. As a result, the role of accounting conservatism has been decreased in the aspect of audit committee financial expertise. This is in line with Yunos et al. (2014), who found that financial expertise on audit committee do not influence conservatism.

5.2.3 To Examine the Direct Effect of Accounting Conservatism on Cost of Capital

The third objective of this study was to examine the direct effect of accounting conservatism on cost of capital. After examining, the results of Hypothesis from H21 to H23 show that accounting conservatism had a negative influence on cost of capital

measured by cost of equity, cost of debt and weighted average cost of capital. Thus, Hypothesis 21, 22 and 23 were accepted. According to the principle of accounting conservatism, good news (profit) is required to be strictly audited prior to transaction recognition, which can reduce information asymmetry (Ball, Kothari, & Robin, 2000; LaFond & Watts, 2008), and lower cost of capital (Zare, Heidari, Salehi, & Jourkesh, 2013; Zhang, 2008). As a results, investors reward companies that report timely losses with low required rate of return (Guay & Verrecchia, 2017; Suijs, 2008), and creditors with the confidence that they would get their money back would offer lower interest rates (Hassani, Hedayati, Mohammadi, & Lesan, 2013). The results show that accounting conservatism is inversely related to cost of capital (Artiach & Clarkson, 2012; Warad & Al-Debi'e, 2017). This is in line with Garcia Lara, Osma, and Penalva (2011), Li (2015), Goh, Lim, Lobo, and Tong (2017) and Khalifa, Othman, and Hussainey (2018), who found that accounting conservatism had a negative influence on cost of equity. Similarly, Chan and Hsu (2013) and Hu and Jiang (2018) found that accounting conservatism had a negative influence on cost of debt. Furthermore, accounting conservatism had a negative influence on weighted average cost of capital according to Zare et al. (2013) and Warad and Al-Debi'e (2017).

5.2.4 To Examine the Indirect Effect of Corporate Governance on Cost of Capital Through Accounting Conservatism

The fourth objective of this study was to examine the indirect effect of board structure, board activity, compensation, shareholder structure, and audit committee on cost of capital through mediation role of accounting conservatism. In order to test and analyze this matter, causal step approach developed by Baron and Kenny (1986) was applied. The results reveal that accounting conservatism is a mediating variable of corporate governance to cost of capital. After examining, the results of Hypothesis 25a, 30a and 35a show that there is a negative indirect effect of the board expertise on cost of capital through accounting conservatism. Moreover, seats of the board of directors in several large firms reflect their knowledge, abilities, experience and reputation (Huang, Wang, & Xie, 2021). In other words, outsider directors from more valuable firms have greater power of influence and access to more valuable information and resources. Thus, the board can significantly reduce the implied cost of capital for private companies

(Goncalves et al., 2019) by applying various business strategies, as well as proper accounting policies, including accounting conservatism to maximize the benefits of the firm, and enhance corporate governance. This is consistent with Almutairi and Quattainah (2019), who found that an independent board director sitting on the board of more than three other firm is an important determinant of accounting conservatism in Islamic banks in 15 countries between 1993 and 2015, reducing the investors and creditors' demand of returns to offset the reduced risk.

The results of Hypothesis 30c and 35c show that there is a negative indirect effect of the board attendance on cost of debt and weighted average cost of capital through accounting conservatism. According to the results of this study, creditors are concerned about accounting governance activities of the board (Busru, 2019). If the board of directors attends and follows accounting conservatism, these concerns will be alleviated (Boussaid, Hamza and Sougne, 2015). As a result, the cost of debt of the firm can be decreased. This is consistent with Hu and Jiang (2018), who found that, the relation between cost of debt and excessive risk incentives is weakened when firms increase their accounting conservatism. This is due to the fact that rational creditors seek protection from conservative reporting policies against future unanticipated risk actions by managers.

The results of Hypothesis 26, 31, and 36 show a negative indirect effect of compensation on cost of capital through accounting conservatism. Types of directors and director remuneration clearly affect the motivation for applying the accounting conservatism principle. If equity-linked compensation, such as equity option plans or bonus share entitlements, is provided to executive directors and those rights are linked to accounting figures, the motivation for applying the accounting conservatism principle becomes less. Thus, it is suggested that compensation provided to independent directors should be cash-based only at the proper amount in order to increase accounting conservatism (Ahmed & Henry, 2012). However, according to Jeong and Kim (2013), equity-based compensation to outside directors strengthens governance in firms by applying accounting conservatism, while decreasing information asymmetry between managers and shareholders due to the fact that the alignment of the interests of outside directors and shareholders also reduces agency costs of the firms.

Watts (2003) highlighted that compensation contracts stimulate the demand for accounting conservatism of the stakeholders since accounting conservatism provides timely signals for investigating the existence of negative net present value projects. This also reduces earnings management and cumulative earnings. The use of accounting conservatism is considered as a signal of good corporate governance. It also protects the rights of shareholders and individual investors. As a result, the cost of capital of the business can be lower. This is similar to the results of the study conducted by Hu and Jiang (2018), who revealed that the relationship with unexpected risk incentives and cost of debt is weakened by accounting conservatism. Zhang et al. (2019) also found a positive association between executive compensation and accounting conservatism, and revealed that the role of accounting conservatism becomes stronger when the performance is lower and information asymmetry is more serious.

5.3 Contributions of the Study

5.3.1 Theoretical Contributions

The executives' top responsibility is to maximize returns for shareholders which is to "create value for the business". For investors, choosing a company to invest in is based on the valuation of the business by expecting a continuous increase in future business value. Business value is an evaluation based on the total present value of free cash flows or FCF expected by the company and lowered by its weighted average cost of capital (WACC). To increase company business value, it is necessary to minimize weighted average cost of capital. The results suggested that minimizing weighted average cost of capital was the issue that companies considered in order to create business value during volatile economic conditions, such as 2018-2019 when this study was conducted.

Previous studies on capital structure theory found that companies with debt financing increases financial risk to lenders. This is known as default risk which is passed on to investors. According to information asymmetry theory, lenders and investors as outsiders may not be able to fully obtain corporate information for decision-making, especially earnings data reported by the company. Thus, they demand an additional return known as "risk premium", which is the main reason that increases WACC of the company. Furthermore, investors have to encounter corporate risks arising from return

volatility of the ordinary shareholders' investment and the volatility of the stock market's rate of return, known as the "Beta Coefficient". The last factor affecting WACC is the risk of uncertain financial markets due to economic, political, social, technological volatility, as well as disasters and epidemics in the VUCA World. According to previous studies based on capital structure theory, companies that could reduce such risks were able to reduce their capital costs. The results of this study also found that accounting conservatism helps reduce the cost of capital since accounting conservatism requires a strict good news (profit) audit prior to transaction recognition, which decreases information asymmetry and increases lenders and investors' confidence in the company reports.

In addition, this study confirms that corporate governance influences cost of capital. According to agency theory, agency problems are the major cause of an increase in corporate cost of capital when the agent fails to ensure the principals that they will not take any action that may cause damage the principals. Thus, there were several studies on agency problems caused by conflicts of interests in various perspectives, which can be categorized in three groups: (I) conflicts of interests between shareholders and managers, (II) conflicts of interests between controlling shareholders and outside minority shareholders, and (III) conflicts of interests between shareholders and bondholders. Previous studies revealed that corporate governance could reduce such conflicts. The results of this study also strengthen corporate governance concept by showing the mechanism that the board of directors uses to reduce agency problems and cost of capital. Moreover, CEO compensation reduces Type I agency problem and cost of capital. For companies that determine CEO compensation based on profits, it is necessary to apply accounting conservatism to assure shareholders that the company does not realize inflated profits. According to resource dependence theory, accounting conservatism is commonly used in companies with high board compensation and high board expertise to reduce information asymmetry between controlling shareholders and outside minority shareholders, which is the cause of Type II agency problem. Since accounting conservatism can suppress inflated profit recognition, it reduces excessive dividend payments to shareholders and default risks for bondholders. As a consequence, Type III agency problem tend to be less. In conclusion, corporate governance can lead to an

increase in applying accounting conservatism in order to reduce all types of agency problems and cost of capital.

5.3.2 Practical Contributions

This study examined conditional conservatism in the form of bad news reflected in the timely loss recognition. It occurs when year-end stock prices have dropped from the beginning of the year due to various circumstances and the company also reports a decline in profit which is less than the previous year without taking other factors into account. It shows that the company has applied conditional conservatism. However, it is essential to observe the trend of the previous 3-5 year at least. For unconditional conservatism, it does not recognize realized profits, but realized losses as shown in the income statement. Thus, companies with unconditional conservatism always have higher cash flows from operating activities than accounting profit. This study found that board activity and compensation increased accounting conservatism can encourage listed companies to focus on corporate governance in order to produce quality financial reports. As a result, borrowers and investors will benefit from this in terms of assessing the corporate risk and investing at an acceptable level of risk.

Furthermore, corporate governance was found to reduce the cost of capital. Thus, investors can use WACC of each company to assess corporate governance of the board of directors. In other words, it can be assumed that companies with low WACC have good corporate governance. WACC is also used to consider the value of investment. Investors tend to invest in projects of which expected returns are higher than WACC. This study revealed that accounting conservatism could reduce capital cost by encouraging companies to control their WACC by applying accounting conservatism since WACC is calculated to reduce the expected net cash flow, which will increase the company value and generate the highest return to shareholders.

The finding of this study benefits the Stock Exchange of Thailand (SET) since it clearly shows that corporate governance reduces capital costs through accounting conservatism. The SET should establish corporate governance measures that prioritize board expertise and compensation that encourage companies to apply accounting conservatism in order to reduce cost of capital while adding the firm value. This helps

protect retail investors and attract quality investors by building their confidence, which can lead to continuous capital market development.

Additionally, the results of the study also help the Federation of Accounting Professions by clearly defining ‘prudence’ in the conceptual framework for financial reporting. In case accounting and financial reports reflect corporate risks, such information can sufficiently be used by users of financial reports for decision-making.

5.4 Research Limitations and Recommendations for Future Research

5.4.1 Research Limitations

5.4.1.1 The long-term trend data were excluded in this study since only cross-sectional data in 2018-2019 that requires prior 5-year data of each firm were selected to be studied. For example, in order to analyze 2018 data, the data from 2014 must also be collected. Moreover, the financial statements and annual reports provided by the Stock Exchange of Thailand are only available to the public for 5 years. As a result, rolling regressions technique that exceeds 5 years cannot be applied. Due to cross-sectional analysis, there are issues of external factors affecting the relationship of variables, especially the economic crisis in 2018 and 2019 affecting the share price and interest rates in the market. Thus, industry and year fixed effect variables were determined to control such external factors in this study.

5.4.1.2 Capital structure affects the determination of the optimal capital structure. When the company has low leverage, it will increase capital through debt. If the company has high leverage, it will increase capital by issuing new ordinary shares. However, the company has to compare the risk and return which affect its cost of equity since high leverage reflects high risks and high cost of equity. However, in this study, leverage was not used as an explanatory variable since it is not relevant to corporate governance. Instead, leverage was used as a control variable to prevent omitted variable bias.

5.4.1.3 Capital increase and debt to equity conversion increases the number of shares, but decreases the share price. This “dilution effect” phenomenon may affect cost of equity calculation of each company. In order to calculate cost of equity,

capital increase and debt to equity conversion were not included in this study. Only 17 companies with capital increase and 2 companies with convertible debenture from 455 companies were included as the sample of this study. (Source: <https://capital.sec.or.th/webapp/webnews/searchnews.php>)

5.4.1.4 To calculate cost of debt, the interest rates paid for annual debt in average were used without considering the past of capital cost. As a result, the cost of debt including average cost of capital used in this study deviates from the real cost of capital.

5.4.1.5 The application of the capital asset pricing model (CAPM) to calculate cost of equity is based on the rate of return that investors want from risk free investment and the multiplier between the market risk premium and the beta (systematic risk). This is considered a risk of the securities that cannot be diversified. However, there may be other factors related to the rate of return.

5.4.1.6 This study did not address the issue of changes in corporate financial reporting standards and accounting policies since it mainly focused on finding the value of conditional conservatism, which is the correlation between reporting losses in financial statements and lower security prices when bad news occurs, rather than the correlation between reported earnings in financial statements with higher security prices when there is good news.

5.4.2 Recommendations for Future Research

Due to the limitation in the scope and time of this study, further research is suggested to present the following matters:

5.4.2.1 A panel data or time series should be used in future research to prevent effects across time and to correct omission variable bias caused by not having all other factors as independent variables which may affect or be related to independent variables, such as industry type or the years of the data to be collected and studied.

5.4.2.2 The study showed that companies with good corporate governance apply, accounting conservatism. This study included a group of companies with good performance and companies with bad performance together. According to the result, board compensation was positively correlated with accounting conservatism. Thus, it could be analyzed that companies with good performance had to applied accounting

conservatism in order to prevent excessive board compensation, while companies with bad performance might apply less accounting conservatism in order not to lower their performance. For a clearer conclusion, future studies should study companies with good performance and companies with bad performance separately.

5.4.2.3 According to the results, industrial groups influence cost of debt and weighted average cost of capital due to different capital structures. Industrial products, resource industry group, and service industry group have a high debt in the capital structure and result in a higher cost of debt or weighted average cost of capital than other industries. Moreover, current social and economic uncertainties also affect businesses, but the impact of such uncertainties is different in each industry, which makes the implementation of accounting conservatism principles differently. For example, the COVID-19 crisis affects the hospital business, which is in the service industry group. Thus, companies in this group have to apply accounting conservatism more than other industries during the crisis. However, it is essential that future studies categorize companies and focus on each industry group in order to obtain results that can be suitably implemented in companies in each group.

5.4.1.4 Another factor related to default risk and increases cost of debt is credit rating, which should be taken into account in future studies. Due to firm performance, industrial environment trends, and economic conditions, credit rating changes and affects the ability to pay debts of the company. If the credit rating is downgraded, it reflects that the company has an increased risk of default.

5.4.2.5 In future studies, it is essential to measure the cost of equity by forecasting the correlation between the rate of return and risk factors other than market risks, such as size risk and risk from book value. According to Connor and Segal (2001), and Bilinski and Lyssimachou (2004), size risk and book to market ratio (B/M) risk can improve accuracy in securities yield forecast.

5.4.2.6 Calculating unconditional conservatism may be applied in future research in order to measure accounting conservatism arising from the use of corporate accounting policies to manage earnings regardless of economic events. To do so, the models developed by Beaver and Ryan (2005), or Givoly and Hayn (2000) can be used to measure accounting conservatism.

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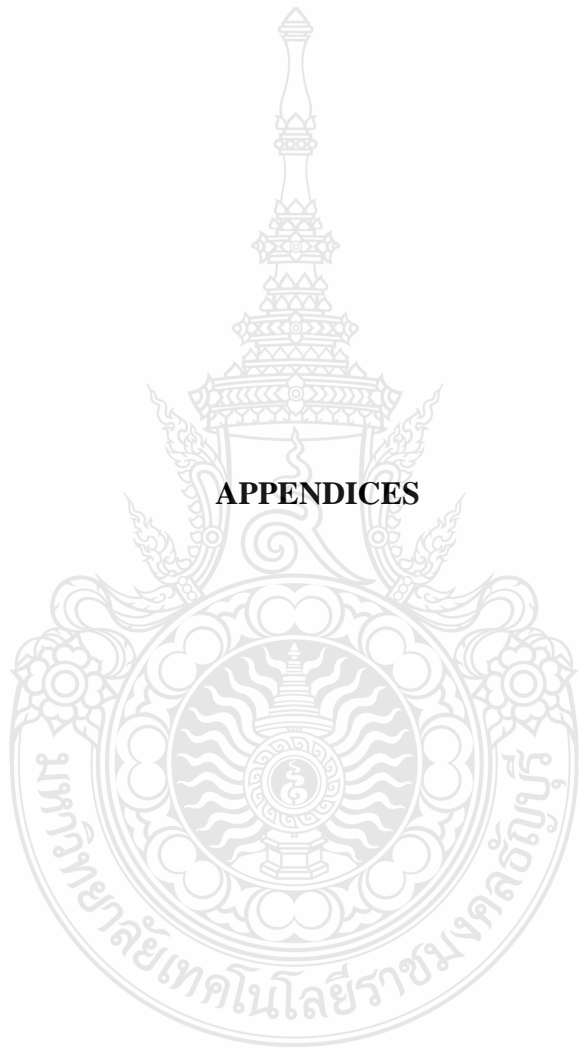
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APPENDICES



APPENDIX A
Linear Regression Assumptions

Linear Regression Assumptions

In the assessment of multiple regression assumptions, it was found that the data did not contradict the multiple regression assumptions as explained in (1) to (5) as follows:

1. The means of the random errors were zero based on exogeneity of the independent variables. When the method of ordinary least square is used, this condition is always true (Greene, 2012).

2. The random errors were normally distributed based on the test of normality. The histogram was an inverted bell shape with a symmetrical appearance. Skewness did not exceed 0.75, and Kurtosis did not exceed 1.50 (Hoogland & Boomsma, 1998). Based on the normal P-P plot of standardized residual, errors were found near diagonal. However, based on the central limit theory, the distribution of residuals in a large sample size (200 cases or more) is normal (Hair, Black, Babin, Anderson, & Tatham, 2006).

3. The random errors had constant variance (homoscedasticity). The scatter plot diagram shows that most of the errors were distributed above and below level 0 in a narrow range confirming that there were no heteroscedasticity problems (residuals ± 2 standard deviations (Panda, Chen, Shaw, & Allore, 2013)).

4. The random errors were independently distributed ranging from 1.5 to 2.5 indicating that an autocorrelation does not exist according to the Durbin-Watson statistic.

5. Independent variables must not be correlated (multicollinearity). In other words, tolerances must not be near zero, and Variance Inflation Factor (VIF) must be lower than 10 (Bowerman & O'Connell, 2000).



APPENDIX B

Results of Linear Regression Assumptions Testing

Results of Linear Regression Assumptions Testing

The data set was checked whether it was in line with the assumptions of linear regression. Certain variables were found to be irregularly distributed. After applying natural log to solve the problem, no serious concerns were found. The summary of the five assumptions of each variable are as follows:

Table 1.1 presents the effect of board size (BSI), board independence (BIN), non-board duality (BDU), board expertise (BEX), board meeting (BME), board attendance (BAT), board compensation (BCO), CEO compensation (CCO), director ownership (DOW), CEO ownership (COW), family ownership (FOW), audit committee size (ASI), audit committee financial expertise (AEX), mediated variable accounting conservatism (CON) and control variables leverage (LEV), total assets (TAS), industry (SER) and year (Y19) fixed effect on cost of equity.

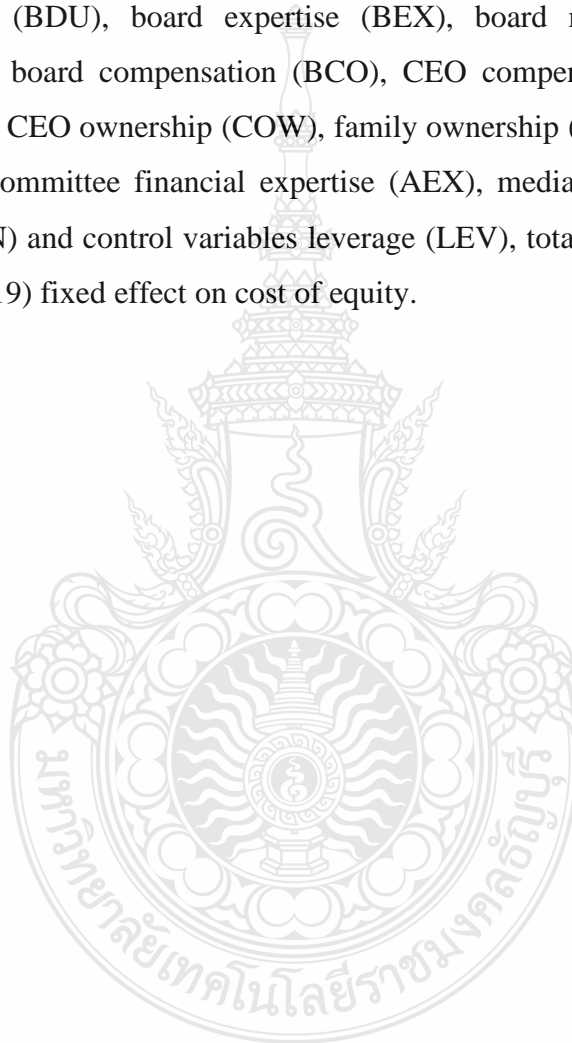


Table 1 Summary five assumptions of linear regression testing variables of corporate governance, accounting conservatism, and cost of equity

	Variables																		
	Ke	BSI	BIN	BDY	BEX	BMT	BAT	BCO	CCO	DOW	COW	FOW	ASI	AEX	CON	LEV	TAS	SER	Y19
1. Exogeneity test																			
Ordinary Least Square	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Normality test																			
Histogram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Skewness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kurtosis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Residual plots	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Homoscedasticity test																			
Scatter Plot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. Autocorrelation test																			
Durbin-Watson	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. Multicollinearity test																			
Tolerance		0.8087	0.8390	0.8794	0.8127	0.8523	0.9072	0.8151	0.8247	0.8060	0.8483	0.8702	0.8974	0.9715	0.8209	0.9235	0.8055	0.9104	0.9705
VIF		1.6428	1.1919	1.1371	1.2305	1.1733	1.1022	1.4090	1.9060	1.9492	1.8708	1.4920	1.1144	1.0294	1.2181	1.0828	1.4661	1.0984	1.0304

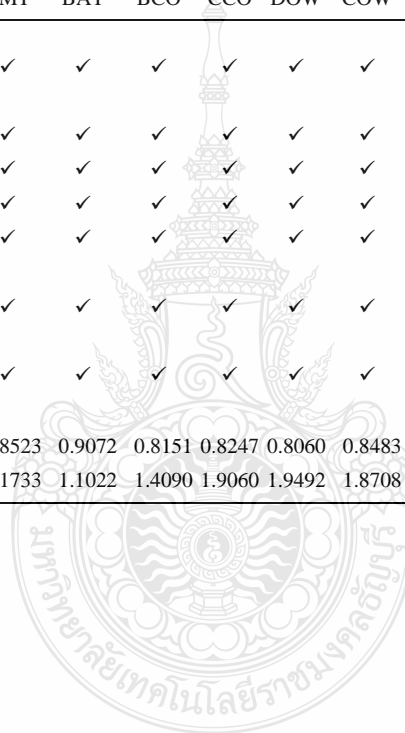


Table 1.2 presents the effect of board size (BSI), board independence (BIN), non board duality (BDU), board expertise (BEX), board meeting (BME), board attendance (BAT), board compensation (BCO), CEO compensation (CCO), director ownership (DOW), CEO ownership (COW), family ownership (FOW), audit committee size (ASI), audit committee financial expertise (AEX), mediated variable accounting conservatism (CON) and control variables leverage (LEV), total assets (TAS), industry (SER) and year (Y19) fixed effect on cost of debt.



Table 2 Summary five assumptions of linear regression testing variables of corporate governance, accounting conservatism, and cost of debt

	Variables																		
	Kd	BSI	BIN	BDY	BEX	BMT	BAT	BCO	CCO	DOW	COW	FOW	ASI	AEX	CON	LEV	TAS	SER	Y19
1. Exogeneity test																			
Ordinary Least Square	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Normality test																			
Histogram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Skewness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kurtosis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Residual plots	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Homoscedasticity test																			
Scatter Plot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. Autocorrelation test																			
Durbin-Watson	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. Multicollinearity test																			
Tolerance	0.8087	0.8390	0.8794	0.8127	0.8523	0.9072	0.8151	0.8247	0.8060	0.8483	0.8702	0.8974	0.9715	0.8209	0.9235	0.8055	0.9104	0.9705	
VIF	1.6428	1.1919	1.1371	1.2305	1.1733	1.1022	1.4090	1.9060	1.9492	1.8708	1.4920	1.1144	1.0294	1.2181	1.0828	1.4661	1.0984	1.0304	

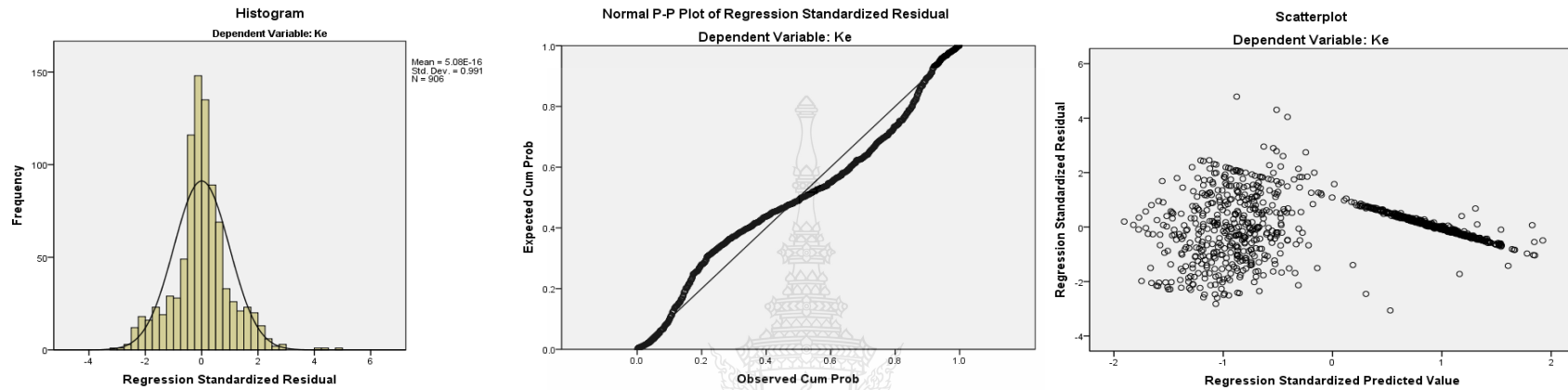
Table 1.3 presents the effect of board size (BSI), board independence (BIN), non board duality (BDU), board expertise (BEX), board meeting (BME), board attendance (BAT), board compensation (BCO), CEO compensation (CCO), director ownership (DOW), CEO ownership (COW), family ownership (FOW), audit committee size (ASI), audit committee financial expertise (AEX), mediated variable accounting conservatism (CON) and control variables leverage (LEV), total assets (TAS), industry (SER) and year (Y19) fixed effect on weighted average cost of capital.



Table 3 Summary five assumptions of linear regression testing variables of corporate governance, accounting conservatism, and weighted average cost of capital

	Variables																		
	WACC	BSI	BIN	BDY	BEX	BMT	BAT	BCO	CCO	DOW	COW	FOW	ASI	AEX	CON	LEV	TAS	SER	Y19
1. Exogeneity test																			
Ordinary Least Square	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Normality test																			
Histogram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Skewness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kurtosis	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Residual plots	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3. Homoscedasticity test																			
Scatter Plot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. Autocorrelation test																			
Durbin-Watson	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. Multicollinearity test																			
Tolerance		0.8087	0.8390	0.8794	0.8127	0.8523	0.9072	0.8151	0.8247	0.8060	0.8483	0.8702	0.8974	0.9715	0.8209	0.9235	0.8055	0.9104	0.9705
VIF		1.6428	1.1919	1.1371	1.2305	1.1733	1.1022	1.4090	1.9060	1.9492	1.8708	1.4920	1.1144	1.0294	1.2181	1.0828	1.4661	1.0984	1.0304

Model 1



Model 2

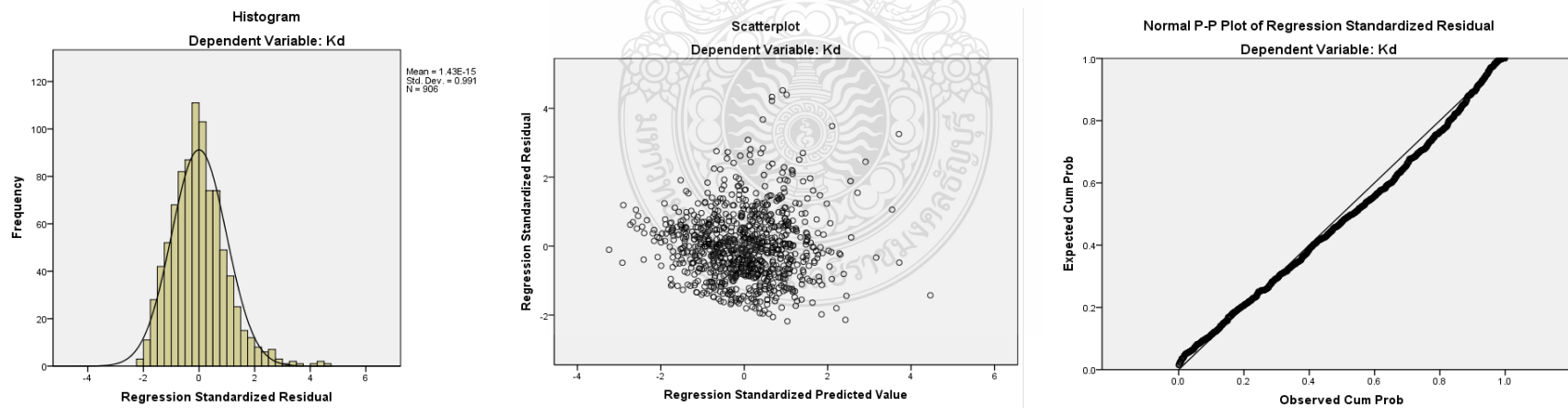
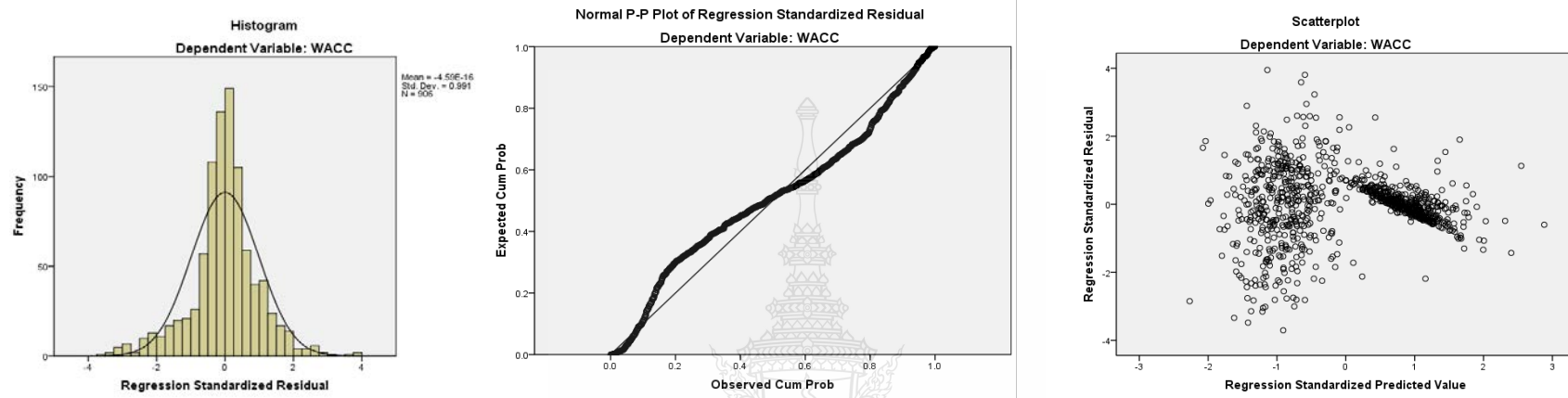


Figure 1 Show Normal P-P Plot of Standardized Residual, Histogram and Scatterplot

Model 3



Model 4

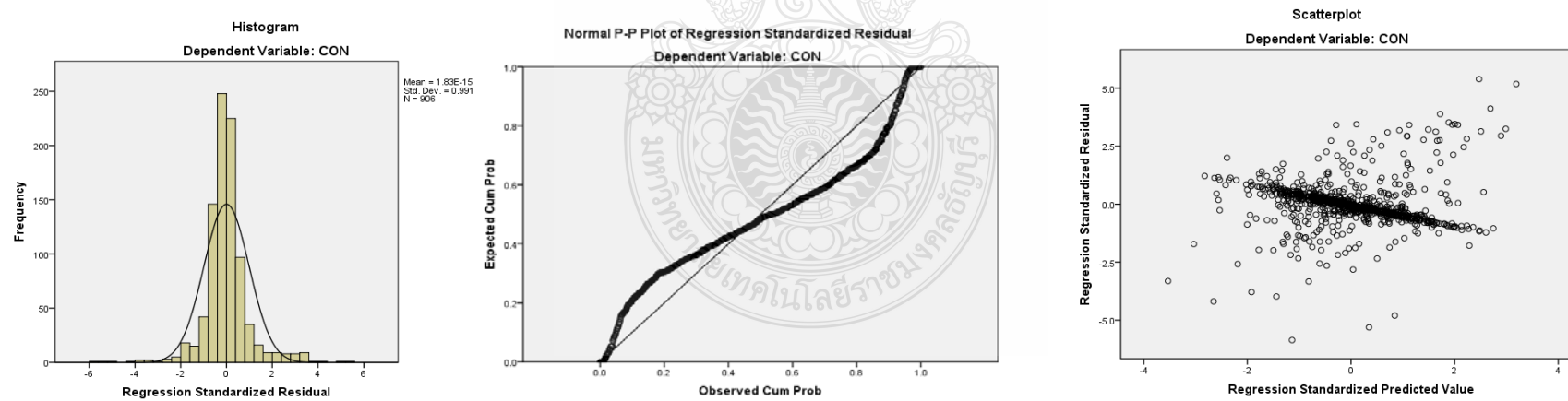
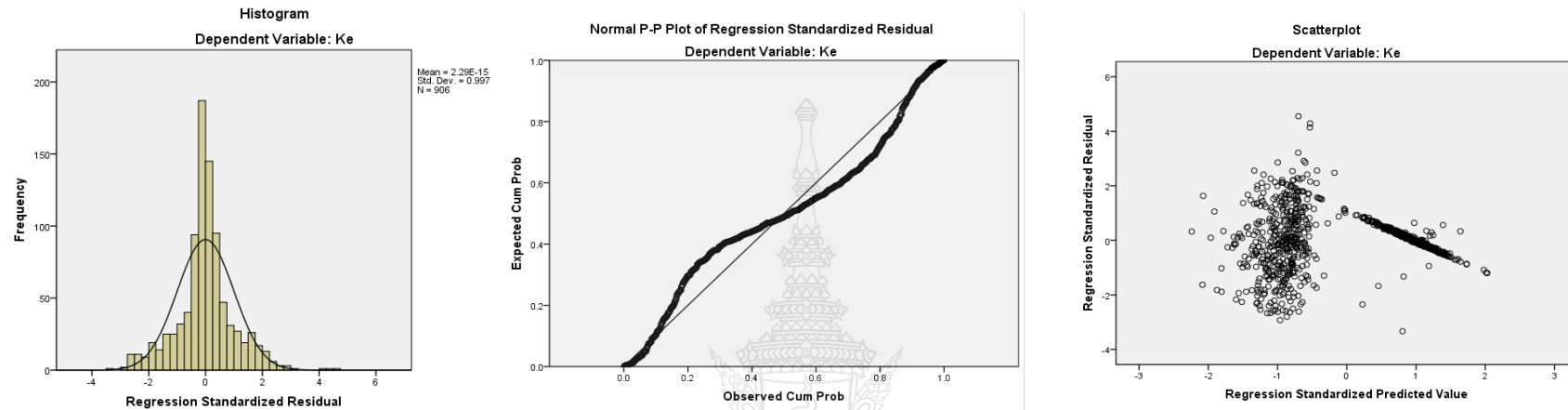


Figure 1 Show Normal P-P Plot of Standardized Residual, Histogram and Scatterplot (Cont.)

Model 5



Model 6

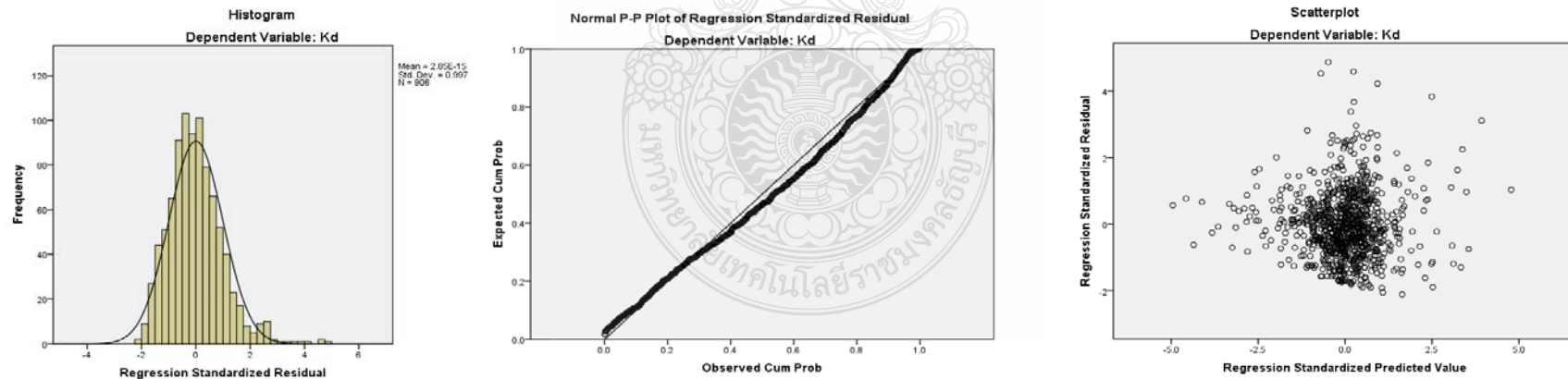
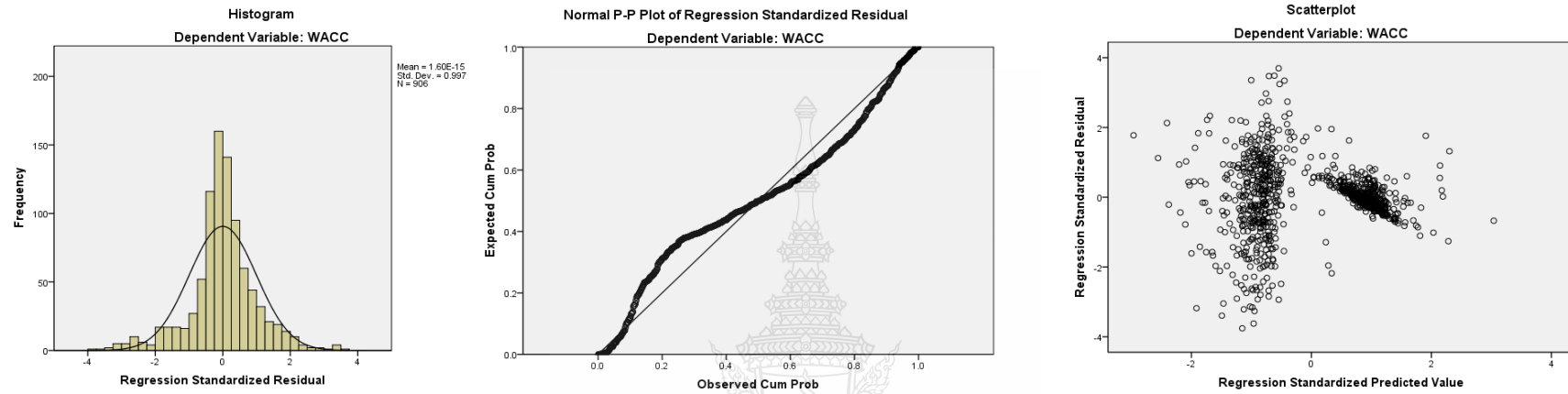


Figure 1 Show Normal P-P Plot of Standardized Residual, Histogram and Scatterplot (Cont.)

Model 7



Model 8

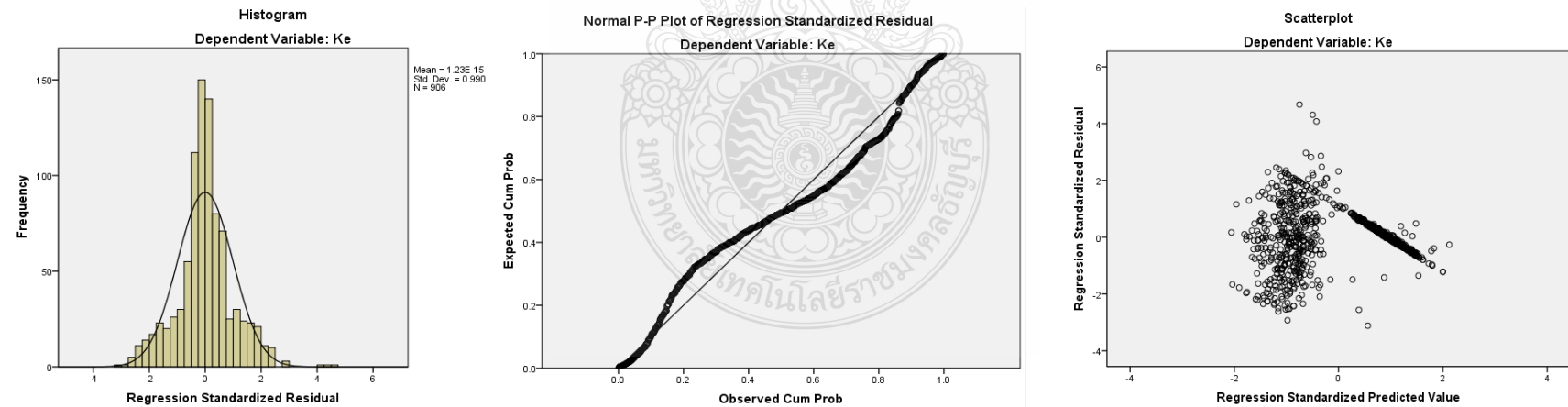
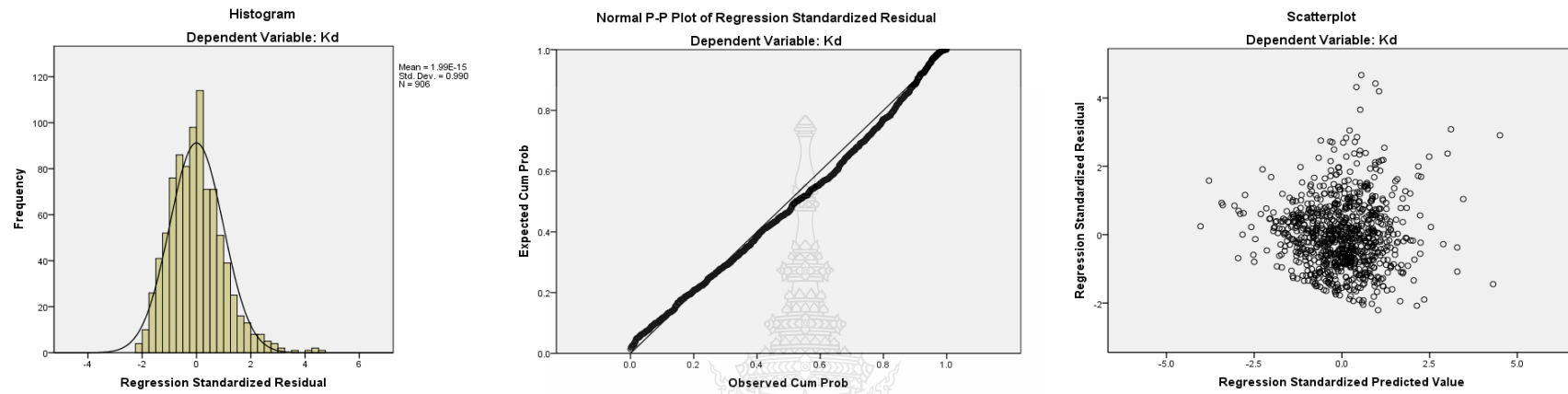


Figure 1 Show Normal P-P Plot of Standardized Residual, Histogram and Scatterplot (Cont.)

Model 9



Model 10

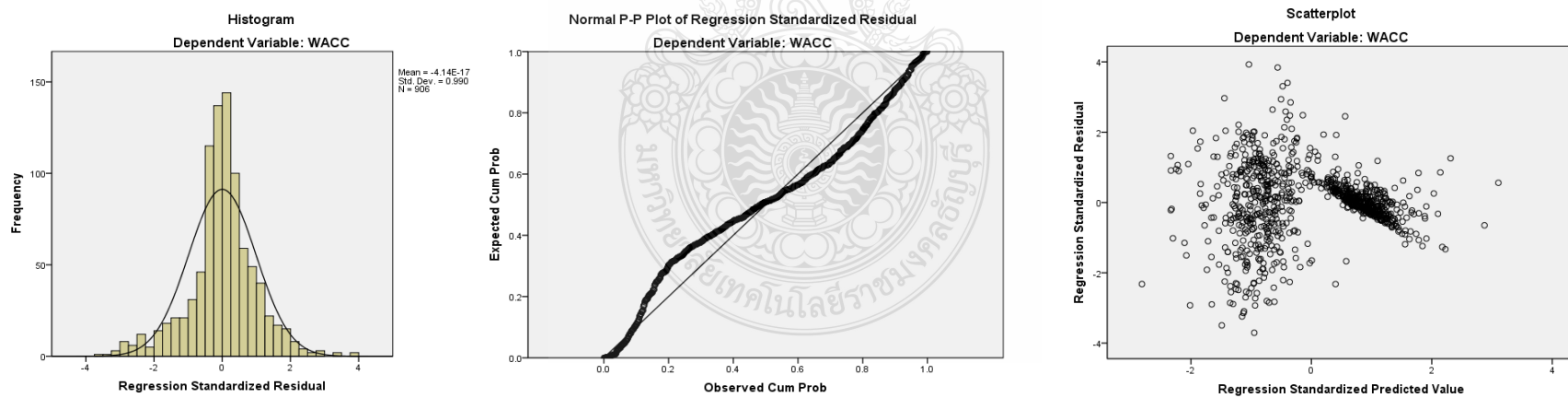


Figure 1 Show Normal P-P Plot of Standardized Residual, Histogram and Scatterplot (Cont.)

Biography

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