



Evidence from the U.K. on Auditor's Judgment in the Risks of Material Misstatement: Determinants and Consequences

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**Evidence from the U.K. on Auditor's Judgment in the Risks of Material Misstatement:
Determinants and Consequences**

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ABSTRACT

An auditor report is prepared by an independent external auditor in a bid to provide reasonable assurance on a client company's financial statements. Frequently in the past and following the global financial crisis, users of auditor's report including investors are apprehensive in their appreciation of auditor's report. They argue that auditors have failed to report the crisis. The ongoing contention of investors is that auditors use a standardized language that provides a uniform description of the audit process weaning away some key matters that could be of greater importance, hence leaving an information gap.

In response to this serious ongoing criticism, standard setters made significant changes in auditor's reporting model by issuing a new auditing standard. For example, the U.K., Financial Reporting Council (FRC) in 2013 issued *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements*. Aiming to narrow down information gap between auditors and investors as well as to enhance transparency in the auditor's report, this new auditing standard requires the auditor to communicate with investors via his/his report about (1) the risks of material misstatement (RMM) with the greatest impact on engagement team effort, (2) the application of materiality in the audit, and (3) the scoping decisions made in the execution of the audit (FRC, 2013a). Similar auditing standard has been also adopted in other countries including the U.S. However, the U.K. is one of the earliest adopters of this new auditing standard.

Consistent with the aim of this new auditing standard and motivated by the lack of research in this area, this thesis has three objectives. First, it empirically investigates the determinants of auditor's disclosures in relation to the risks of material misstatement with the greatest impact on engagement team effort and the application of materiality in the audit. Second, it explores the consequences of this new auditing standard on audit and auditee firms in terms of audit fees and non-audit service fees. Third, it examines the influence of this new auditing standard on information asymmetry in the market for the firm's stock. The above objectives should provide a comprehensive view on the determinants and the effects of the new auditing report, hence increase our understanding on the determinants and the effects of such disclosures.

Based on the research objectives, three studies are developed using relevant underpinning theories. The first study aims to investigate the influence of firm governance and characteristics on auditor's disclosures in relation to the risks of material misstatement and the audit materiality level. In doing so, this study uses (1) key corporate governance elements including

board structure, audit and nomination committees' structure, internal ownership, and institutional ownership, and (2) auditee characteristics and performance including firm size, profitability, tangible assets, firm growth, the structure of asset, firm leverage, and firm complexity. Based on corporate governance models, Study One develops two models to achieve the objective of this study. The regression models rely on hand-collected data on the risks of material misstatement and material level from 322 London Stock Exchange listed firms with a premium listing of equity shares.

Consistent with the expectation of this thesis, this study reveals a significant positive relation between corporate governance elements and auditor's risks of material misstatement judgment. Specifically, board size, number of meetings in audit committee, size of nomination committee, and institutional ownership have a positive relationship with the risks of material misstatement disclosures. In addition, board size and institutional ownership are found to significantly and positively affect materiality. Results also indicate that the rate of sales growth and firm complexity increase RMM disclosures, while highly performing firms measured by ROA, firms with larger tangible assets accounts, and firms with a high rate of leverage have a negative relationship with such RMM disclosures. With audit materiality level, firm size has a positive influence on the materiality and this materiality increases in firms with better financial performance, contrary to firms with a higher rate of sales growth.

Study Two addresses the impact of the adoption and implementation of ISA 700 on audit and auditee behavior in the context of the risks of material misstatement and audit and non-audit service fees. The sample of this study is based on a merged hand-collected data on the risks of material misstatement from 1008 annual reports in the U.K. with audit and non-audit service fees and their control variables from Bloomberg, Datastream, and Audit Analytics. A balanced panel data is then used.

Study Two applies random-effects (RE) regression in examining the relation of risks of material misstatement with audit and non-audit service fees and with their control variables including ratios of receivable and inventory to total assets, sale growth, foreign operations, firm size, tangible assets, total accruals, return on assets, leverage, current ratio, return volatility, audit opinion, audit firm type, Z-Score, business subsidiaries, merger, loss, and year and industry dummies. As predicted, the second study finds that high audit fees are associated with high the risks of material misstatement. Specifically, it shows that both the number of risks of

RMM and its contents in number of words have a positive and significant relationship with audit fees including non-audit service fees

An important question is whether the implementation of auditing standard “ISA 700” would improve the information environment of firms whose shares are publicly traded. Study Three, therefore, investigates the link between information asymmetry component in the market measured by trading cost, price impact of trade, and immediate of shares, and increased accounting disclosures following the adoption of new auditing standard in the U.K. This study uses 1047 company’s annual reports to manually collect data on the disclosures of risks of material misstatement and uses Datastream and Bloomberg to collect daily market and financial data. It adopts Hail's (2002) disclosure model with its control variables, including firm size, net income, sales growth, asset tangible, return volatility, stock price, firm leverage, current ratio, Z-Score, and year and industry dummies to examine the relationship between the disclosures of risks of material misstatement and information asymmetry in the market for the firm’s stock. The results of this study, using the pooled ordinary least squares, support the argument that increased accounting disclosures increase firm information environment which have significant influence on the information asymmetry in turn enhancing stock liquidity. Specifically, this study shows that the disclosures of risks of material misstatement significantly and negatively affect bid-ask spread, significantly and positively affect stocks liquidity ratio, and significantly and positively affect number of trades and trading volume.

This thesis contributes to the existing literature on current corporate governance, audit process and fees, and accounting disclosures literature and to regulators. First, it adds to the existing literature by investigating how corporate governance elements influence auditor’s disclosures of the risks of material misstatement and audit materiality in the extended auditor’s report. This area has not been considered in previous research. In addition, this study is the first attempt to use both audit fees and non-audit service fees and link them the risks of material misstatement in the extended auditor’s report. Furthermore, for the first time, this research uses a number of proxies related to information asymmetry component in the market in attempts to study the influence of such discourses on these proxies. The findings of this research could have significant implications for standard setters and regulators as this thesis shows that the information asymmetry is reduced with the new auditor's report, hence regulators may consider requiring auditors of smaller U.K. entities and secondary listing(s) entities to disclose the risks of material misstatement in the new auditor’s report.

Overall, the results of this thesis show (1) how audit strategies are responsive to a client corporate governance, and characteristics, (2) show that audit fees are a function of client size, risk, internal controls weakness, and financial restatements, and (3) the auditor's report provides more value-relevant information to investors which decreases the level of information asymmetry. To the best of my knowledge, this study is the most comprehensive study related to the new auditing standard; that is, ISA 700.

Keywords: auditor's judgment; risks of material misstatement; materiality level; corporate governance; audit fees; non-audit fees; information asymmetry; stock liquidity.

STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Yaqoub Nasser Alduraywish

2019

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THESIS RELATED RESEARCH OUTPUTS TO DATE

Under review paper

Alduraywish, Y., Monem, R., & Boolaky, P. (2019). Auditing standards, increased accounting disclosure, and information asymmetry: Evidence from the U.K. listed companies. *Journal of Accounting, Auditing and Finance*

Journal working papers

Alduraywish, Y., Monem, R., & Boolaky, P. (2017). *Risks of material misstatement, materiality level, and client firm characteristics: Evidence from the U.K.* Working paper, Griffith University.

Alduraywish, Y., Monem, R., & Boolaky, P. (2018). *Audit fees, non-audit fees, and auditor reporting on U.K. listed companies: Evidence from risks of material misstatement.* Working paper, Griffith University.

Conference papers:

Alduraywish, Y., Monem, R., & Boolaky, P. “Critical Audit Matters among U.K. Listed Firms: Determinants and Effects on Investors and Audit Clients”, *Accounting and finance association of Australia and New Zealand, Adelaide, Australia (28-30th June, 2017).*

Alduraywish, Y. “Critical audit matters and audit legal liability: A systematic review of literature” *Economics, Finance and Accounting International Conference, Hong Kong (24th-25th May 2018).*

Alduraywish, Y., Monem, R., & Boolaky, P. “Risks of Material Misstatement, Materiality Level, and Client Firm Characteristics: Evidence from the U.K.”, *Accounting and finance association of Australia and New Zealand, Auckland, New Zealand (30-03th July, 2018).*

LIST OF ABBREVIATIONS

ACRONYM	DEFINITION
AS	Auditing Standards
ABA	American Bar Association
AC	Audit committee
ASB	Auditing Standards Board
ASIC	Australian Securities and Investments Commission
ASX	Australian Stock Exchange
CAQ	Center of Audit Quality
CPA	Certified Public Accountant
CEO	Chief Executive Officer
CR	Control risk
CAMs	Critical Audit Matters
EC	European Commission
FGLS	Feasible Generalized Least Squares
FRC	Financial Reporting Council
FSF	Financial statement fraud
GCARs	First-time going concern auditor's report
FE	Fixed effect
FCF	Free cash flow
IASB	International Accounting Standards Board
IAASB	International Auditing & Assurance Standards Board
IAPC	International Auditing Practices Committee
IFAC	International Federation of Accountants
ISA	International Standards on Auditing
KAMs	Key Audit Matters
LSE	London Stock Exchange
MBA	Master of Business Administration
LN	Natural logarithm
NYSE	New York Stock Exchange
NAF	Non-audit service fees
OCF	Operating cash flow
OLS	Ordinary least squares
PCAOB	Public Company Accounting Oversight Board
RE	Random-effects
RMM	Risks of material misstatement
ROA	Return on assets
SME	Small and medium enterprises
S&P 500	Standard & Poor's 500
SAS	Statements of Auditing Standards
TSE	Tokyo Stock Exchange
TSX	Toronto Stock Exchange
2SLS	Two-Stage-Least-Squares
SEC	U.S. Securities and Exchange Commission
UK	United Kingdom
US	United States of America
WLS	Weighted least squares

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During my doctoral study, I have presented parts of this thesis at a number of domestic and international conferences and symposiums. In 2017, I presented a paper based on this thesis at the Accounting and Finance Association of Australia and New Zealand (AFAANZ) in Adelaide, Australia. It is my honor to thank the conference participants. Special thanks go to Professor David Smith, a professor of Management Accounting and Director of Research at

The University of Queensland; Professor April Klein, a professor of accounting at New York University Stern School of Business; and Professor Steven Salterio, Smith Chair of Accounting and Auditing, professor of business at Queen's University, for their valuable comments on my research work. I place on record that one of the research questions in this thesis in relation to audit materiality judgment was suggested by Professor Salterio. This suggestion turns out to be very valuable and doable. It is also my honor to thank the symposium participants at the Department of Accounting, Finance and Economics Symposium, Griffith University (September 2017). I particularly thank Associate Professor Majella Percy for her constructive comments and suggestions about my work. In 2018, I presented a paper based on this thesis at a conference that is Accounting and Finance Association of Australia and New Zealand (AFAANZ) in Auckland, New Zealand. I would like to thank the conference participants. A special thanks goes to Professor Neil Fargher, professor of auditing at Australian National University, for his great feedback on the first study. My sincere appreciation is also due to the International Conference on Economics Finance and Accounting (ICEFA) in Hong Kong (2018) for providing comments on my paper.

This thesis is dedicated to my beautiful children: Ariana and Ryan.

CHAPTER 1: INTRODUCTION AND OVERVIEW OF THE THESIS

1.1 Background

Since the 1970s, there have been overwhelming criticisms from stakeholders (Gaetano, 2014), audit practitioners (Ernst & Young, 2014), attorneys (Barnes, 2013; Katz, 2014) and researchers (Bédard, Gonthier-Besacier, & Schatt, 2014) on the need for improving the auditor's reporting model. These criticisms include concerns about the communicative value of the auditor's report since it contained a standardized language that provided a uniform description of the audit process (Smith, 2016).¹ A second criticism surrounding the lack of transparency and relevance of the auditor's old reporting model especially after the financial crisis (Asare & Wright, 2012).

These criticisms are based on the argument that a firm's stakeholders seek more useful information in the auditor's report; such information is likely to be important for their decision-making. International Auditing and Assurance Standards Board states that "information they consider to be relevant and reliable" (IAASB 2011, par. 05). As a result, standard setters, in several countries, responded to these criticisms by promulgating a new auditing standard and audit regulators enforced the implementation of such changes. These standard setters and audit regulators include the Center of Audit Quality (CAQ), the Auditing Standards Board (ASB), and the Public Company Accounting Oversight Board (PCAOB) in the U.S., the European

¹ It is notable that several researchers are not supportive of extending auditor's report. For example, Bailey, Bylinski, and Shields (1983) and Hatherly, Brown, and Innes (1998) are in favor of using standardized language in auditor's report. They argue that the users of financial statements are less likely to misunderstand and misinterpret the report when the auditor uses a standardized language. In addition, others argue that this change does not improve auditor's report because auditors could provide "too much" information and in turn auditor's report loses its relevance and informational value (Chen et al., 2012).

Commission (EC), the Financial Reporting Council (FRC) in the United Kingdom (U.K.) and Ireland, and the International Auditing and Assurance Standards Board (IAASB) (Christopher, 2016). The new standard engendered changes in the auditor's reporting model in a bid to narrow down the information gap between auditors and investors as well as to enhance transparency in the auditor's report (FRC, 2013a).

A number of countries followed public policy organizations in terms of adopting a new auditing standard with regard to the auditor's reporting model. In the U.S., the Public Company Accounting Oversight Board (PCAOB) adopted a new auditing standard on June 1, 2017 that is AS 3101 and the U.S. Securities and Exchange Commission (SEC) unanimously approved the PCAOB's Auditing Standard AS 3101 on October 23, 2017. This new auditing standard requires auditors of public companies in the U.S. to issue an expanded auditor's report (PCAOB, 2017). In this expanded auditor's report, the auditors disclose "Critical Audit Matters" (hereafter, CAMs), defined as "matters that involved the most difficult, subjective, or complex auditor judgments or posed the most difficulty to the auditor in obtaining sufficient appropriate audit evidence or forming an opinion on the financial statements" (PCAOB, 2013, p. 6).² Therefore, for each CAMs, the auditor's report must (i) identify the CAMs (ii) identify the principal considerations that led the auditor to determine that the matter is a CAM, (iii)

² According to paragraph 11 of Auditing Standard No 3101 (AS 3101.11) a critical audit matter is "any matter arising from the audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved especially challenging, subjective, or complex auditor judgment" (PCAOB, 2017).

describe how the CAM was addressed in the audit, and (iv) refer to the relevant financial statement accounts or disclosures that relate to the critical audit matter (PCAOB, 2017).

Similarly in the United Kingdom,³ the Financial Reporting Council (FRC) issued *International Standard on Auditing (UK and Ireland) 700, The Independent Auditor's Report on Financial Statements ("ISA700")* in June 2013 that requires auditors to provide additional information in their report on (1) the risks of material misstatement (RMM) with the greatest impact on engagement team effort; (2) the application of materiality in the audit; and (3) the scoping decisions made in the execution of the audit (FRC, 2013a). According to ISA⁴ 700, the auditors should disclose client-specific rather than general or standardized information in attempts to increase the communicative value of the auditor's report (FRC, 2013a).

The RMM may emanate from a host of firm and industry characteristics including business strategy, business risk, firm growth, performance, leverage, ownership, and the quality of

³ Enhanced reporting has been in place in other European countries including Germany and France. Now countries across Asia-Pacific, including China, Hong Kong, Japan, Malaysia, New Zealand, South Korea, Sri Lanka, Thailand and Vietnam, are set to follow suit by 15 December 2016 (Ernst & Young, 2017).

⁴ ISA stands for International Standard on Auditing which was issued in 1991 by International Auditing and Assurance Standards Board (IAASB). IAASB was founded in 1978 as the International Auditing Practices Committee (IAPC). IAASB is an independent standard-setting body that serves the public interest by setting high-quality international standards for auditing, and assurance (IAASB, 2019). This Board is a part of a global organization for the accountancy profession that is the International Federation of Accountants (IFAC). International Standard on Auditing (ISA) provides the auditor with his responsibilities when conducting an audit. ISAs also provide information about objectives of the independent auditor, and explain the nature and scope of an audit, and obligations to comply with the ISAs (ISA 200, para. 1). In May 2004, the UK Auditing Practices Board (APB) (replaced by the Audit and Assurance Council) adopted the International Standards of Auditing (ISAs) stating that "*apply to all audits of financial statements for periods commencing on or after 15 December 2004. The APB's previous standards, Statements of Auditing Standards (SASs), are applied for audits of financial statements for periods commencing before that date*" (APB, 2004).

internal control. For example, the independent auditor's report of British Petroleum (BP) in 2016 identified the determination of the liabilities, contingent liabilities and disclosures arising from the significant uncertainties related to the Gulf of Mexico oil spill as one source of RMM disclosures. In response to these potential risks, the audit engagement team performed audit procedures that included (1) walking through and testing the controls designed and operated by the group relating to the liability accounts for the oil spill, (2) meeting with the group's legal team to understand developments across all of the oil spill matters and their status, and (3) discussing the group's external lawyers and read determinations and judgments made by the courts. After all these procedures, the auditors of BP were satisfied that the amounts provided by management were appropriate. They were satisfied that management was unable to determine a reliable estimate for certain obligations. Finally, the auditor's judgment in this regard was that an emphasis of matter was no longer required in their opinion. Details of the auditor's report are in Appendix A of this thesis.

Another example of RMM comes from Diploma PLC 2014's annual report. Here, the independent auditor reported the following as one source of RMM: carrying value of goodwill, and tangible and intangible assets. In response to this risk, the auditor assessed the assumptions underlying the asset impairment model. The auditor also reviewed the forecast cash flows with reference to historical trading performance. More details about the RMM identified by the Diploma PLC's auditor are in Appendix B. Similarly, the auditor's report of DIAGEO PLC in 2016 report identified, *inter alia*, taxation-related risk, presentation of exceptional items, business disposals risk, and provisions and contingent liabilities risk as the sources of RMM. The auditor then responded to these risks in their audit efforts (see Appendix C for details of the report).

The above RMM disclosures are more likely to alleviate information asymmetry between investors and management (Christensen, Glover, & Wolfe, 2014). Furthermore, according to

the Release No. 2013-005, “[t]he communication of critical audit matters could help to alleviate the information asymmetry that exists between company management and investors. More specifically, company management is typically aware of the auditor’s most challenging areas in the audit because of regular interactions with the auditor ... Reducing the level of asymmetry between the company and investors could result in more efficient capital allocation” (PCAOB, 2013).

These disclosures also indicate that the new auditor’s report provides additional and specific information about the audit process and the auditor’s judgement regarding RMM compared to the conventional report. Moreover, these disclosures potentially have significant implications for firm value and investors as well as for management and corporate governance. However, given the recency of the new expanded auditor’s report, it is not clear what drives auditor’s judgements in identifying RMM. Therefore, the first study (Study One) in this thesis examines the determinants of auditor’s disclosures of the client’s RMM in the new auditor’s report. Specifically, it identifies a set of key drivers that influence the levels of auditor’s disclosures in relation to client’s risks of material misstatement and audit materiality.

The auditor’s judgment about the client’s RMM is likely to have other consequences for the client, such as the client ends up paying higher audit and non-audit fees. Hence, the second study (Study Two) investigates whether the RMM identified by the auditor have any impact on audit and non-audit service fees. In addition, such disclosures may have consequences on information asymmetry component in the market. Consequently, the third study (Study Three) examines if the disclosures of RMM in the extended auditor’s report affect the information asymmetry in the market for the firm’s stock.

1.2 Motivation and significance

The current thesis is motivated by several factors. First, it responds to the call from the U.S. Public Company Accounting Oversight Board (PCAOB) and the International Auditing and Assurance Standards Board (IAASB) about the need to improve the auditor's report in order to decrease the information gap between auditors and investors. Consistent with the standard setters' objective, the current study aims at increasing our understanding about the auditor's disclosures in relation to RMM in the auditor's report by studying and providing additional information about key factors that influence the levels of auditor's risks assessment disclosures and audit materiality in the extended auditor's report.

Second, extant literature in the area of critical audit matters mainly focuses on the consequences of critical audit matters on, for example, auditor liability, and audit quality. However, these studies do not examine the key factors that affect the levels of auditor's disclosures in the auditor's report. Hence, the present thesis attempts to fill in this gap by considering both the determinants of auditor's disclosures and consequences of auditor's disclosures in relation to the RMM disclosures on audit and auditee firms and on information asymmetry in the market for the firm's stock in one study.

Third, according to Paragraph 154 of Statement on Auditing Standards No. 130 (SAS 130 AU-C §940.A154), auditors are required to examine and report directly on the effectiveness of internal control including a firm corporate governance when formulating audit strategy that is "obtaining an understanding of internal control over financial reporting and testing and evaluating the design and operating effectiveness of internal control" (AICPA, 2016).

However, there is little professional guidance by audit regulators⁵ on how auditors should consider such factors when formulating an appropriate audit strategy, and there is only one prior study on this issue (Cohen & Hanno, 2000). Therefore, this thesis provides an updated professional guidance to help auditors planning the audit strategy in relation to a firm's internal control by identifying firm characteristics associated with the auditor's disclosures of RMM. Fourth, the current thesis is motivated by the fact that most of the current key/critical audit matters studies are experiment-based studies, involving different participant tools: undergraduate students, M.B.A. students, law students, and participants drawn from Amazon Mechanical Turk (e.g., Brasel, Doxey, Grenier & Reffett, 2016; Brown, Majors, & Peecher, 2014; Gimbar, Hansen, & Ozlanski, 2015; Kachelmeier, Schmidt & Valentine, 2015). Thus, the results of these studies could be affected by weak economic incentives of these participants (Buhrmester, Kwang, & Gosling, 2011). In addition, these studies employ only a single hypothetical CAM paragraph and do not expose participants to actual CAMs paragraphs as contained in the auditor's report. In contrast, this thesis analyses a large number of actual RMM disclosures and several firm characteristics, which means that this thesis is based on a real-world setting.

Fifth, the extant critical audit matters literature examines the potential effect of this new auditing standard on audit firms by comparing the audit fees before and after the adoption of the new audit requirements (e.g., Gutierrez, Minutti-Meza, Tatum, & Vulcheva, 2016; Li, Hay,

⁵ Audit firms, however, have procedures in place to assess, for example, internal control and they are required to comment about internal control in the auditor's report. Paragraph 31 of International Standard on Auditing No. 700 (ISA 700.31) states that "*In making those risk assessments, the auditor considers internal control relevant to the entity's preparation of the financial statements in order to design audit procedures that are appropriate in the circumstances*" (IAASB, 2009d, p. 659).

& Lau, 2018); the present thesis extends the literature by considering both audit fees and non-audit service fees in one study. Sixth, while Backof, Bowlin and Goodson (2014), Bédard, Coram, Espahbodi and Mock (2016), Bédard et al. (2014), Cade and Hodge (2014), Elliott, Fanning and Peecher (2016), and Sirois, Bédard, and Bera (2017) provide results that new auditor's report provides more useful information to investors, their studies suffer from some sample selection and explanatory variables issues. The present thesis employs a larger sample size that includes both financial and non-financial companies. Moreover, the present thesis seeks to improve upon previous studies by adopting more variables including trading cost, price impact of trade, and immediate of shares to examine the usefulness of information in the new auditor's report.

1.3 Objectives of the thesis

The extended auditor's report contains information about the risks of material misstatement as well as audit materiality (FRC, 2013a). However, it is yet unclear to company stakeholders what are the key factors that influence the levels of such information in the extended auditor's report. Therefore, consistent with the standard setters' objective of RMM, this thesis attempts to provide more insight for investors.

In addition, the aim of the new auditor's report is to provide more valuable information, and to increase the transparency to the users of financial statements (FRC, 2013a), hence reducing information asymmetry component in the market. However, studying how audit and auditee respond to the risks of material misstatement, and examining the impact of increasing auditor's disclosures on information asymmetry in the market for the firm's stock are not well documented. Therefore, the current thesis also examines the consequences of auditor's disclosures in the extended auditor's report. In light of the above discussion, in the background,

and in the motivation sections of this chapter, this thesis addressed the following research question:

What are the factors that influence the levels of auditor's disclosures in relation to the risks of material misstatement and materiality and the consequences of such disclosures on audit and auditee firms, and on the information asymmetry in the market for the firm's stock?

Addressing the above research question involves undertaking three separate but related studies designed to achieve the following three research objectives. These objectives are:

- 1) To determine the association between the disclosures of risks of material misstatement, materiality level, and firm characteristics;
- 2) To investigate the linkage between audit fees, non-audit fees, and risks of material misstatement; and
- 3) To examine the influence of the disclosures of risks of material misstatement on information asymmetry in the market for the firm's stock.

In order to achieve these objectives, this thesis therefore conducts the following three interconnected studies:

Study One: An examination of the association between the disclosures of risks of material misstatement, materiality level, and firm characteristics: Evidence from the U.K. listed companies

Study Two: An analysis of audit fees, non-audit fees, and the extended auditor's report on U.K. listed companies: Evidence from risks of material misstatement

Study Three: An investigation into auditing standards, increased accounting disclosure, and information asymmetry in the market for the firm's stock: Evidence from the U.K. listed companies

The following sections summarize these three studies.

Study One: The association between the risks of material misstatement, materiality level, and firm characteristics

As the new, expanded auditor's report is fundamentally different from the old one, recent studies investigate the potential effect of CAMs⁶ on the communicative value of the auditor's report for investors (e.g., Backof, et al., 2014; Bédard, et al., 2016; Bédard et al., 2014; Cade & Hodge, 2014; Elliott, et al., 2016; Sirois, et al., 2017). Overall, the findings of these studies suggest that the disclosures of CAMs increase the information content of the auditor's report for investors. While some of the RMM is likely to be future-oriented and likely to provide warnings about potential risks in the future (e.g., recoverability of accounts receivable), others are likely to refer to problems or risks that already exist (e.g., impairment of goodwill and other intangible assets). Thus, despite the best intentions of the expanded auditor's report, its utility as a forward-looking report are ex post. No study has been conducted to establish the determinants of such disclosures. Moreover, the RMM identified by auditor are likely to be non-random and systematically related to the industry characteristics, product market competition, business strategy, management style, internal control, and operating and

⁶ Some authors use the term CAMs when they conduct their studies in the U.S., while studies based on the U.K. use RMM in the extended auditor's report. Both terms mean the same and they refer to this new auditing standard. For the sake of consistency and ease of exposition, this thesis uses the term RMM to refer to both.

governance structure of the firm. Identification of these factors are likely to benefit investors in firm valuation and future investment decisions. In addition, these factors may have implications for managers in minimizing the number of and effect of RMM because the RMM may have potential consequences for firm value.

This study investigates the association of corporate governance elements including ownership structure and firm performance with the disclosures of risks of material misstatement⁷ as discussed in RMM paragraphs of the auditor's report, and the amounts of materiality set by auditors.⁸ As of now, there is no empirical evidence of the firm governance and other characteristics that influence auditor's judgment in identifying RMM. As discussed earlier, it is important to know the drivers of RMM disclosures discussed in the auditor's report. A range of factors is likely to influence the auditor's judgment in risks of material misstatement. However, this study focuses on governance-related characteristics and firm performance because of their potential influence on RMM, and on the audit materiality. For example, prior studies find a relationship between the strength of corporate governance, auditor's judgments, and the audit process (Asare, Cohen, & Trompeter, 2001; Beaulieu, 2001; Johnstone & Bedard, 2001; Sharma, Boo, & Sharma, 2008). Furthermore, many studies argue that the strength of corporate governance has an effect on the likelihood of fraud occurrence (Beasley, 1996; Beasley, Carcello, & Hermanson, 1999; Law, 2011). In addition, there is evidence of a strong

⁷ Prior research measures the misstatements using different proxies. For example, Keune and Johnstone (2015) measure the misstatements by counting the number of misstatements. In this research, the author measures the misstatements by counting number of risks of material misstatements' words in the extended auditor's report. This author assumes that auditor's disclosures on RMM perfectly reflects their true belief about RMM by the client.

⁸ Although in subsequent analysis, this author explores the role of auditor characteristics on auditor's judgment in relation to RMM, the main analysis focuses on client characteristics only.

relationship between management control philosophy and (pre-planning and planning) judgments by auditors (Cohen, Krishnamoorthy, & Wright, 2002). This study extends this literature by arguing that the strength of corporate governance increases monitoring activities, and more effective internal control results in auditor's extent tests of controls and disclosures. Moreover, this study investigates the influence of ownership structure on auditor's disclosures in relation to the risks of material misstatement and materiality. This is done because prior research shows a relationship between ownership and control role of the managers and this relationship should lead to a reduction in conflicts of interest, therefore, to a higher firm value (Denis & McConnell, 2003). In addition, many researchers believe that ownership is positively linked to firm performance (De Miguel, Pindado, & De La Torre, 2004; Jensen & Meckling, 1976; Monks & Minow, 1995), while others find going concern decision is concentrated in firms with low institutional ownership (Blay, Bryan, & Reynolds, 2016). Further, Abbott, Park, and Parker (2000) and Beasley (1996) argue about the negative relationship between institutional shareholder effects and the likelihood of fraud in the U.S.

The evidence is that ownership structure influences firm performance, going concern decision, and the likelihood of fraud supports the notion that ownership can also influence the levels of control risk. This study participates in this debate by arguing that in firms with high ownership concentration, audit risk is likely to be low due to monitoring role of ownership. With such low audit risk, auditors are expected to extend tests of controls and disclosures of RMM (IAASB, 2009a).

Study One analyzes U.K. data because the U.K. is one of the first countries which have adopted the expanded auditor's report. In particular, the present research analyzes the expanded auditor's report of the firms listed on the London Stock Exchange with a premium listing over the period 2014 – 2016 because the U.K. adopted the expanded auditor's report in 2013. This

study regress the RMM-and materiality-level-related disclosures on a range of corporate governance-related measures. It employs random-effects method in estimating the research models. The results of this study, based on 966 firm-year observations, demonstrate that board size, audit committee meetings, size of the nomination committee, and institutional ownership have a positive relationship while a female board chair is negatively associated with the RMM. In relation to materiality level, Study One finds that materiality level increases in firms with larger boards and higher institutional ownerships.

Consistent with prior research including Ali, Liu, and Su (2017), Cohen and Hanno (2000), Cohen, Krishnamoorthy, and Wright (2007), Study One findings confirm that corporate governance elements play an important role in controlling opportunistic management behavior, and supports the role of information asymmetry as a channel of influencing this relationship, which in turn affects auditor's judgment. These results are consistent with Paragraph A11 of Section 16 of Statement on Auditing Standards No. 130 (SAS 130 AU-C §940.A16) that management's monitoring activities provide evidence of the design and operating effectiveness of internal control (AICPA, 2016), with Paragraph 9 of International Standard on Auditing No. 330 (ISA 330.9), and with Paragraph 16 of Auditing Standard No. 13 (AS 13.16) that if the firm's internal control is assessed by auditors as effective, the greater will be the extent of the auditor's tests of controls to support the auditor's opinion on the company's internal control over financial reporting (to support audit risks assessment below the maximum level) (IAASB, 2009a; PCAOB, 2010a).

In addition, Study One finds that the RMM disclosures increase in firms with high rate of growth and firm complexity, and decreases in firm leverage and tangible assets. In relation to materiality level, Study One finds firm size has a positive influence and firm growth a negative influence on it. The findings of this study are consistent with prior research that auditee characteristics influence auditor's judgment (e.g., Goodwin-Stewart & Kent, 2006; Pratt &

Stice, 1994). In addition, firm profitability, as measured by return on assets and net income, has a negative effect on the materiality while profitability has a positive effect on the materiality amounts. These results are consistent with prior research that firms with poor financial conditions are riskier to auditors (e.g., Kinney & McDaniel, 1989; Pratt & Stice, 1994; Stice, 1991). Several robustness tests are performed to ensure that the above findings are robust, not sensitive to specific estimation procedures, and the findings do not suffer from endogeneity problems. These tests include incorporating alternative variables in the regression models, split sample strategy, endogeneity bias tests, and the use of Two-Stage-Least-Squares (2SLS), Poisson regressions, and Two-limit Tobit model.

Study One contributes to literatures in corporate governance, auditor's judgment, audit strategy, and investment strategy. First, it provides evidence that corporate governance elements including board of directors and audit and nomination committees are associated with auditor's disclosures of RMM and audit materiality. This study contributes to corporate governance literature by finding the role of governance in auditor's judgment. Moreover, regulators and standard setters may benefit from the results of this study because it improves the understanding of the key factors that drive auditor's judgment in relation to the risks of material misstatement and the materiality level. This is important because Christensen, Eilifsen, Glover, and Messier (2018) examine the effect of audit materiality disclosures on professional investors' decision making and find that audit materiality judgment is not well understood by the U.S. and the U.K. investors.

Second, this study's findings may benefit investors and analysts in identifying firms that are likely to have higher risks of material misstatement,⁹ and investors may use the factors identified in this study for their future investment decisions. Third, Auditing Standard Board (ASB) issued SAS No. 78¹⁰ which encouraged auditors to assess the strength of a firm corporate governance when formulating an audit strategy (AICPA, 1995).¹¹ However, there is little professional guidance on how auditors should consider such factors when formulating an appropriate audit strategy, and there is only one prior study on this issue (Cohen & Hanno, 2000). Therefore, this study provides a more detailed professional guidance to help auditors plan an audit strategy by identifying firm characteristics associated with RMM and materiality level.

Study Two: The association between audit fees, non-audit fees, and the extended auditor's report on U.K. listed companies

⁹ Arguably, it is not necessary that a firm having more RMM disclosures in one year will have further RMM disclosures in the subsequent year. Therefore, this thesis runs subsequent analysis (but not reported) to examine one-year influence of corporate governance, firm characteristics, and ownership on auditor's judgment in relation to RMM disclosures. The results stay the same as the main results. This is because corporate governance mechanisms, including ownership structure, and firm characteristics including performance need a longer time to change (Zhou, 2001).

¹⁰ Auditing Standard No. 78 (ASB 1995) is an original version which is replaced by No SAS No. 130. Auditing Standard No. 15 (SSAE No 15 AT §501.07) and Auditing Standard No. 130 (SAS 130 AU-C §940.A16) state that the auditor will be engaged to examine and report directly on the effectiveness of entity's internal control over financial reporting including entity's board of directors, management, and other personnel – designed to provide reasonable assurance (AICPA, 2008; AICPA, 2016). This standard SAS No. 130 is effective for integrated audits for periods ending on or after December 15, 2016. Before SAS No 130, it was an option for an auditor to examine and report on management's assertion about the effectiveness of internal control over financial reporting.

¹¹ Although there is no auditing standard to guide auditors in assessing the strength of a firm corporate governance when conducting an audit, it is acceptable to assume that audit firms may have an audit procedure to assess the strength of a firm corporate governance.

The users of audited financial statements have expressed a number of criticisms on the “pass” or “fail” audit opinion (Geiger, 1993; Gray, Turner, Coram, & Mock, 2011; Mock et al., 2012). As a consequence, the U.K. Financial Reporting Council (FRC), for example, issued a new auditing standard that is, ISA 700. One of the requirements of this new auditing standard is to require auditors of large companies listed on the London Stock Exchange (LSE) to provide additional information in their report on the risks of material misstatement (FRC, 2013a).

While this new auditing standard is expected to alleviate the information asymmetry for investors (Christensen et al., 2014), one of the most controversial aspects of this new standard is its potential effect on audit. Hence, recent studies investigate the potential effect of this new auditing standard on the communicative value of the auditor’s report between auditors and investors (e.g., Backof et al., 2014; Bédard et al., 2016; Bédard et al., 2014; Cade & Hodge, 2014; Elliott et al., 2016; Sirois et al., 2017). These studies find that the communicative value of the auditor’s report increased in the adopters firms of extended auditor’s report compared to non-adopters. In addition, other recent studies investigate the potential effect of this new auditing standard on auditors’ legal liability (e.g., Backof et al., 2014; Beekes, Brown, & Zhang, 2015; Brasel, et al., 2016; Brown, Majors, & Peecher, 2015; Gimbar, Hansen, & Ozlanski, 2016; Kachelmeier, et al., 2015). The findings of these studies provide mixed results (either reduce or do not influence auditor’s liability).

Furthermore, several other studies investigate the potential effect of this new auditing standard on audit fees. The argument for increased audit fees is underpinned by greater demands on auditors to provide more information about the audit, hence increased audit time and efforts. Naturally, auditors will charge more fees under the new auditor’s reporting model compared to the previous one. This argument is supported by Gutierrez et al. (2016) and Li, et al., (2018) who find that the requirements of the new auditing standard increase audit fees. However, this

study adds that audit fees can increase not only because of the new audit requirements, but also because of higher levels of risks of material misstatement.

Study Two investigates whether audit fees are associated with the risks of material misstatement. It is possible that auditors will charge higher fees in firms with higher levels of RMM. This is because, as indicated by Auditing Standard No. 2110 (AS 2110) and Auditing Standard No. 12 (AS 12 Page A1 –2),¹² risks of material misstatement could be related to fraud risk, risk related to weaknesses in internal controls, and risk related to business risk (Blay, Sneathen, & Kizirian, 2007; PCAOB, 2010c; PCAOB, 2010d). These risks are found to increase audit fees (Hogan & Wilkins, 2008; Mavin, 2005; Sharma, 2004). Therefore, Study Two argues that auditors charge higher fees in firms with higher levels of RMM. In examining how audit clients respond to RMM, it is expected that firms are more likely to increase non-audit services due to the implementation of such regulation. However, increasing non-audit services place auditor independence at risk (Harris, 2014).

Reducing auditor independence can impact not only audit quality (Tepalagul & Lin, 2015), but also audit failure (Read, 2015), and auditor's judgment (Carmichael & Swieringa, 1968). This expectation is consistent with Wright and Wright (1997) who observe that auditors waive their adjustments based on the size of the client. In this respect, a number of studies provide empirical evidence about the relationship between the outputs of financial statements and

¹² Although, American Auditing Standards AS 2110: paragraphs .70-.71 recommends auditors to assess whether the risk in RMM is a significant risk as a fraud risk, or insignificant risk or whether it is due to error or fraud, this study includes all type of risks found in auditor's report regardless of its significance to auditors and its cause. This is because RMM could occur from a number of reasons, including external factors, such as conditions in the company's industry and environment, and company-specific factors, such as the nature of the company, its activities, and internal control over financial reporting.

auditor independence. For example, prior studies investigate the relationship between going concern audit opinion and non-audit services fees (e.g., Basioudis, Papakonstantinou, & Geiger, 2008; Firth, 2002). Furthermore, the relationship between financial statements restatement and non-audit services fees are investigated (e.g., Bloomfield & Shackman, 2008; Kinney, Palmrose, & Scholz, 2004). Additionally, the relationship between accruals quality and non-audit services fees are investigated (e.g., Srinidhi & Gul, 2007). Collectively, these studies provide empirical evidence of the negative relationship of non-audit services fees with going concern opinion, financial statements restatement, and accruals quality. This study adds to the debate by arguing that there is a negative relationship between the level of non-audit services fees and the levels of the risks of material misstatement.

Study Two uses a sample of 336 financial and non-financial U.K. firms listed on the London Stock Exchange over the period from 2014 to 2016, resulting in 1008 firm-year observations. The present research uses audit fees and non-audit service fees as a proxy for measuring how audit and auditee firms respond to RMM. In addition, Study Two measures RMM by (1) the number of risks reported for each firm (N_RISK); and (2) the number of words used in per risk (P_RISK)¹³ in the auditor's report.

Using a balanced panel dataset, and after controlling for several other audit fees variables, random-effects (RE) regression analysis shows that the risks of material misstatement have a positive and significant association with audit and non-audit service fees. Specially, and as predicted in H1 (a), number of risks in each firm (N_RISK) and the number of words used in

¹³ Counting number of words, pages, disclosure, etc., are a part of content analysis approach which is widely used (Hackston & Milne, 1996; Krippendorff, 2012; Marston & Shrives, 1996).

per risk factor (*P_RISK*) have a positive and significant relationship with audit fees (*LN_AUDFEE*).

The findings in Study Two are consistent with the argument that audit fees are a function of client size, complexity, business risk, weakness in internal controls, and problems related to the financial statements including restatements (e.g., Hogan & Wilkins, 2008; Hoitash, Hoitash, & Bedard, 2008; Kinney et al., 2004; Li & Lin, 2005; Raghunandan & Rama, 2006; Stanley & DeZoort, 2007). Overall, the findings provide evidence that auditors tend to charge more in firms with higher levels of the risks of material misstatement. With regards to non-audit service fees, this study finds that number of risks in each firm (*N_RISK*) has a positive and significant relationship with non-audit service fees (*LN_NASFEE*). This supports the notion that firms with higher risk pay more for non-audit service fees, and these fees do not put auditor independence at risk as argued by Harris (2014) and Wines (1994). These findings hold even after performing a series of robustness tests and additional analysis, including alternative incorporating variables, split sample strategy, the use of Feasible Generalized Least Squares (FGLS), endogeneity bias tests, and Two-Stage-Least-Squares (2SLS) regressions.

The findings of Study Two will be useful to several different groups. For researchers, this study is the first to document that it is the number of risks and number of words used in per risk in the auditor's report that is associated with higher audit fees. Second, the factors identified in this study to have a positive influence on audit fees are likely to benefit auditors in their future fees decisions. Study Two findings may also be useful to regulators and other interested parties such as standard setters because it improves the understanding of the drivers of audit fees in relation to the risks of material misstatement.

Study Three: The association between auditor’s disclosures of risks of material misstatement and information asymmetry in the market for the firm’s stock

Over the past two decades, there has been a significant body of literature arguing that stakeholders are frustrated with the previous auditor’s reporting model (Mock et al., 2012). Stakeholders were looking for improving auditor’s report due to concerns surrounding its form, content, and overall communicative value (Church, Davis, & McCracken, 2008; Smieliauskas, Craig, & Amernic, 2008). Importantly, it was argued that while auditors spend thousands of hours on an audit and receive millions of fees, they provide limited information about financial statements and financial reporting risk to the users of financial statements. This suggests that an information and communication gap existed between the users of financial statements and the auditors. The information gap reflects “differences between what users desire and what is available to them through the entity’s audited financial statements and the auditor’s report thereon or other publicly available information” (IAASB 2011). The communication gap, however, reflects to difference’s levels of knowledge between what users desire and understand and what is communicated by the assurance provider (Mock et al., 2012).

In response to the concerns of auditor’s reporting model, standard setters made changes in auditor’s report. The U.K. Financial Reporting Council (FRC)¹⁴ amended the auditor reporting standard to require auditors to (amongst others) describe those assessed risks of material misstatement that were identified by the auditor and which had the greatest effect on the overall

¹⁴ The FRC is the UK’s independent regulator. One of UK FRC responsibilities is to set UK accounting and auditing standards as well as to promote high-quality corporate governance and reports (FRC, 2013a).

audit strategy (FRC, 2013a). This standard aims to increase the transparency, information value of auditor's report, and alleviate the information asymmetry. As mentioned earlier, Nick Land, Chairman of the FRC's Audit and Assurance Council, claims that investors are now receiving a broader view of firm's financial reports position because of disclosures undertaken by the auditors (FRC, 2013b). This new auditing standard is also expected to reduce the information asymmetry between investors and management as stated by R. Waxman (personal PCAOB's submission to SEC, August 19, 2017) that "*The Board believes that reducing the information asymmetry between investors and auditors should, in turn, reduce the information asymmetry between investors and management.*"

Previous studies examine whether the disclosures of RMM in the extended auditor's report increase the information value for investors. For example, Reid, Carcello, Li, and Neal (2015) argue that the disclosures of risks of material misstatement will affect investors' decision and the market would react positively. In addition, earlier studies find that the new auditor's report provides more and useful information to investors and the market would react positively (e.g., Backof et al., 2014; Bédard et al., 2016; Bédard et al., 2014; Cade & Hodge, 2014; Elliott et al., 2016; Sirois et al., 2017). However, these studies examine the short-term impact of accounting disclosures on information asymmetry as they employ the method of event

studies.¹⁵ The current study (Study Three) argues that – through a long-term impact – an increase of the levels of disclosures should lower the information asymmetry component in the market in turn enhancing stock liquidity. Consider a situation where a firm provides lower levels of disclosures: shareholders including buyers and sellers in this situation would become less interested in purchasing/holding the firm shares. To overcome the reluctance of potential investors to hold firm shares in illiquid markets, managers are likely to provide a discount on firm shares to attract investors. As a result of such an act, firm's cost of equity and stock illiquidity increase (Leuz & Verrecchia, 2000). In a situation where firms increase the levels of disclosure, buyers and sellers of the firm are provided with the same levels of information. This, in turn, reduces the information asymmetry and gives traders the ability to trade in immediate time which makes the shares more liquid. Such situation also reduces the discount at which firm shares are sold, and hence lowers the costs of issuing capital (Leuz & Verrecchia, 2000).

This argument is supported by a number of studies that provide evidence about the relationship between levels of disclosures and information asymmetries across market participants (greater stock liquidity). For example, bid-ask spread (a measure of stock illiquidity) is high in firms with an increased degree of information asymmetry (e.g., Copeland & Galai, 1983; Glosten &

¹⁵ The method of event studies was first developed by Fama, Fisher, Jensen, and Roll (1969). This method investigates the impact of an event on the value of a firm prior, during, and after the event. It could be used to examine how the stock market responds to, for example, corporate events, and to economy-wide events. Although this method is widely used in the areas of, for example, accounting, information technology, and law, it has some possible limitations. First, while it provides evidence that abnormal price movements would occur around the event due to the new information, this method does not consider the content of information (Wetterlind Dörner, 2005). Second, it may induce an upward bias when calculating the aggregate cumulative abnormal return (Chen, 2017; MacKinlay, 1997).

Milgrom, 1985; Jaffe & Winkler, 1976; Leuz & Verrecchia, 2000; Venkatesh & Chiang, 1986). Moreover, voluntary disclosures reduce bid-ask spread (e.g., Balakrishnan, Billings, Kelly, & Ljungqvist, 2014; Bushman & Indjejikian, 1995; Schoenfeld, 2017; Shroff, Sun, White, & Zhang, 2013).

In addition, the disclosures of SEC's segment and the disclosures of the valuation of oil and gas reserves are found to reduce bid-ask spread (Boone, 1998; Greenstein & Sami, 1994). Furthermore, Frino and Jones (2005) find mandated disclosures of cash flow result in a decline in bid-ask spread. Finally, firms with stronger investor protection have more liquid shares (Ali, Liu, & Su, 2017; Bacidore & Sofianos, 2002; Brockman & Chung, 2003; Chung, 2006; Prommin, Jumreornvong, & Jiraporn, 2014). The findings of these studies provide empirical evidence on the linkage between accounting disclosures and stock market with deeper and lower transaction costs. As of now, there is no empirical evidence that show the influence of auditor's disclosures in relation to the risks of material misstatement in the extended auditor's report on the information asymmetry in the market for the firm's stock.

The current study uses a balanced panel data of 1047 firm-year observations from the London Stock Exchange over the period from 2014 to 2016. Secondary sources of data from Bloomberg and Datastream are used to collect daily market and financial data, while data related to RMM disclosures are hand-collected. The current study uses a number of proxies to measure liquidity of firm's shares including bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*). In addition, RMM is measured by the number of words in the disclosures of RMM (*WORDS*).

This study extends the literature in this area by providing evidence that increased accounting disclosures have a negative and statistically significant influence on the information asymmetry in the market for the firm's stock. Specifically and consistent with studies such as those by

Schoenfeld (2017) and Shroff et al. (2013), results of Study Three show that as the number of words in the disclosures of risks of material misstatement (*WORDS*) increase, bid-ask spread (*SPR*) declines, and stock liquidity ratio (*LR*) increases. This finding suggests that RMM disclosures reduce the information asymmetry component in the market, which in turn enhances the stock liquidity of firms.

Furthermore, Study Three's results find that as the number of words in the disclosures of risks of material misstatement (*WORDS*) increases, number of trades (*TR*), and trading volume (*VOL*) increase. This finding indicates that uninformed investors trade large blocks of stock in short periods of time (immediate) as they now can obtain more valuable information from the extended auditor's report about the audit. This finding is similar to results of previous studies which find trading volume is low in stocks with greater information asymmetry (e.g., Bartov & Bodnar, 1996; Chae, 2005; Glosten & Milgrom, 1985; Karpoff, 1986).

Study Three makes several contributions to the literature. First, unlike other studies relating the disclosures of risks of material misstatement in the extended auditor's reports to market reaction which find no association between the disclosures of RMM and market reaction (e.g., Gutierrez, Minutti-Meza, Tatum, & Vulcheva, 2017; Lennox, Schmidt, & Thompson, 2017), or find the disclosures of RMM influence information asymmetry component in the market in a short-term impact (Gutierrez et al., 2016; Reid et al., 2015), this study provides the first piece of evidence that – through a long-term impact – the disclosures of risks of material misstatement in the extended auditor's report reduce the information asymmetry component in the market for the firm's stock. This finding is important given the fact that it supports the note by the U.S. Securities and Exchange Commission's conjecture (Clayton, 2017), and supports the view of PCAOB that the communication of critical audit matters could help to alleviate the

information asymmetry that exists between company's management and investors about the company's financial performance (PCAOB, 2013).¹⁶

In addition, unlike other studies on the disclosures of risks of material misstatement in the extended auditor's report and information asymmetry component in the market (e.g., Gutierrez et al., 2017; Gutierrez et al., 2016; Lennox et al., 2017; Reid et al., 2015), this study incorporates a number of liquidity proxies including trading cost, price impact of trade, and immediacy in one study (Study Three). These proxies may reduce concerns surrounding the use of bid-ask spread and increase the understanding of how proxies capture stock liquidity.

Second, unlike prior studies on the disclosures of risks of material misstatement in the extended auditor's report and information asymmetry component in the market which suffer from both a small cross-section and a short time-series (e.g., Kelton & Montague, 2018), the present study covers a large balanced panel data dataset (1047 firm-year observations) and a relatively long time series (2014 to 2016). Examining the effect of such disclosures on information asymmetry component in the market in this time period is important because the new auditing standard came into effect in the U.K. in 2013. Hence, investigating how the regulatory change affects information asymmetry in the market for the firm's stock is relevant for investors as well as audit regulators. The sample firms came from all financial and non-financial listed firms in the U.K., which may give the results the ability to be generalized in the U.K. This study also contributes to the literature by documenting that it is not only voluntary disclosure, disclosures of the valuation of oil and gas reserves, disclosures of management

¹⁶ See letter from J. Robert Brown Jr., et al., August 21, 2017 ("J. Robert Brown Jr. Letter").

earnings forecasts, mandated cash flow disclosure, and the disclosures earnings announcements that can affect capital market but also the auditor's disclosures of RMM.

1.4 Structure of the thesis

This thesis is presented in eight chapters. A brief description of each of the eight chapters is provided below.

CHAPTER 1: *INTRODUCTION AND OVERVIEW OF THE THESIS* - This chapter provided a background on audit reporting change. The chapter also identified the research motivation and objectives. This was followed by an introduction for Studies One, Two and Three.

CHAPTER 2: *LITERATURE REVIEW* - This chapter reviews and evaluates the literature and theoretical framework that are relevant to the research questions and hypotheses of the study. The chapter also highlights the main variables, methods, and samples of the most relevant studies. In addition, this chapter discusses the results and findings of related previous studies that have been done in the area of this study. This is followed by identifying and discussing research gaps.

CHAPTER 3: *THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT* - This chapter discusses the theoretical framework adopted in this research, together with the formation of research questions and hypotheses that are to be addressed and tested in this study.

CHAPTER 4: *RESEARCH METHODOLOGY AND DATA SOURCES* - This provides the methodology used in this study with a discussion of the sample selection including its procedure, sample period, and a description of the data gathering procedure, as well as definition and measurement of the variables. This chapter also develops a number of models that will be used to test the hypotheses presented in Chapter 3.

CHAPTER 5: *STUDY ONE RESULTS* – This chapter presents and discusses the research findings regarding the influence of corporate governance, firm characteristics, and ownership on the disclosures of risks of material misstatement, and on audit materiality. This is followed by several sensitivity tests to determine robustness of the results.

CHAPTER 6: *STUDY TWO RESULTS* – This chapter presents and discusses the research findings regarding the consequences of adopting the new auditor’s report on audit and auditee firms by investigating the relationship between the risks of material misstatement disclosures and audit fees and non-audit service fees. In order to counter check the strength of the main results, this chapter also presents findings from a number of sensitivity tests analyses.

CHAPTER 7: *STUDY THREE RESULTS* – This chapter presents and discusses the research findings regarding the influence of auditor’s disclosures of the risks of material misstatement in the extended auditor’s report on the information asymmetry component in the market using a comprehensive sample of U.K. listed companies over the period of 2014-2016. To ensure that the main results are reliable, this chapter also performs a variety of robustness checks.

Chapter 8: *SUMMARY AND CONCLUSION* - This chapter is to conclude the research where a summary and conclusion for each study is provided. This is followed by highlighting the research contributions. This chapter also outlines the limitations of this research and some potential directions for future research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to identify and explain the research gap(s) by reviewing the existing literature on critical audit matters and by presenting the groups of related variables of interest that this thesis aims to examine on (1) corporate governance mechanism including internal and external governance (ownership structure, board structure, and audit and nomination committees), (2) firm characteristics, (3) auditor's judgment including audit risk, audit planning judgment, audit materiality, and audit and non-audit service fees, and (4) accounting disclosures and its association with stock market behavior.

Section 2 presents the literature on the determinants of auditor's disclosures in the following three subsections. Subsection 2.2.1 presents a review of the literature on the linkage between the structure of firm corporate governance and corporate performance. This includes reviewing the literature on the linkage between firm ownership, board, financial statements, disclosures, and agency cost. Subsection 2.2.2 discusses literature related to the mechanisms of corporate governance and their effects on agency cost, firm's value, and audit process including audit risk and audit planning; and Subsection 2.2.3 points on recent literature related to influence of firm corporate governance and characteristics on audit materiality, and the influence of internal and external ownership on audit materiality. This is done to link the influence of corporate governance including internal and external ownership and firm characteristics on the disclosures of risks of material misstatement and audit materiality.

Section 3 of this chapter discusses the literature on the consequences¹⁷ of auditor's disclosures on audit and auditee firms in the following two subsections. Subsection 2.3.1 is a review on how audit firms respond to the risks of material misstatement by discussing the agency theory and existing literature in the area of going concern audit opinion and audit fees, financial restatements and fraud and audit fees, clients' business risk and audit fees, and the risks of material misstatement and audit fees. Subsection 2.3.2 provides a review on how auditee responds to the risks of material misstatement by showing a review of the relevant literature on the linkage between non-audit service fees, auditor independence, and auditor's disclosures.

Section 4 of Chapter 2 (2.4) discusses the literature on the consequences of auditor's disclosures on market microstructure (i.e., information asymmetry or stock liquidity). Specifically, whether traders provide more liquidity to stocks through the channel of information disclosure (the disclosures of risks of material misstatement). This is provided by reviewing empirical studies on the short- and long-term impact of accounting disclosures in capital market behavior. Based on the review of literature, research gaps are identified and discussed in the final section of this chapter.

2.2 Literature review for Study One

2.2.1 Corporate governance structure and corporate performance

2.2.1.1 Ownership and agency problem

¹⁷ A consequence is something that happens after particular action or behavior. This action or behavior can be positive or negative. Therefore, a consequence can be positive or negative. The term "positive and negative consequences" is used in the area of accounting disclosures (Burke & Logsdon, 1996).

Following Jensen and Meckling (1976), a large number of studies argue about the role of managerial ownership on managerial behavior especially after the separation of ownership from control (e.g., McConnell & Servaes, 1990; Coase, 1937). This relation is known as an agency relationship. Jensen and Meckling (1976) define an agency relationship as “a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf, which involves delegating some decision-making authority to the agent”. Therefore, managers are expected to perform service on behalf of principals (owners), and to set goals and objectives that serve the interest of owners.

However, managers may not always aim to serve the interest of owners because managers may take personal advantages of the business opportunities i.e., (i) managers may set different goals and objectives than those set by principals (Jensen & Meckling, 1976; Ross, 1973), and (ii) managers may override the control of a company for their own interest (managers prefer to maximize their own personal interests, if possible, (Jerzemowska, 2006; Masulis, 1988)).

There are a number of risks associated with maximizing the conflict of interest between managers and shareholders. First, risk of management integrity, where managers are likely to produce materially misleading financial reports. For example, in a case where a firm faces problems in cash flow, poor liquidity or poor operating results, managers would avoid reporting such results by making the firm’s financial reports position look better than it truly is (Gay & Simnett, 2015). This act is material misstatement. International Standard on Auditing No. 450. A1 (ISA 450. A1) indicates that a misstatement may result from: (a) an inaccuracy in gathering or processing data from which the financial statements are prepared; (b) an omission of an amount or disclosure; (c) an incorrect accounting estimate arising from overlooking, or clear misinterpretation of, facts; and (d) judgments of management concerning accounting estimates that the auditor considers unreasonable or the selection and application of accounting policies that the auditor considers inappropriate (IAASB, 2009f). Gay and Simnett (2015) claim that

misstatements could also occur potentially by managers including clerical mistakes (e.g., losing transaction, duplicating transaction to be added), employee fraud (e.g., manager misappropriation of assets), and misapplication of accounting policies (sales and accounting receivable for extended period) involving accounting estimating are often misapplied (pp. 257-258).

Second, managers may run the firms ineffectively by investing less effort in managing its resources (Harris & Raviv, 1991). Such action would affect and harm shareholders rather than managers. Managers may also adopt short-term investment horizon (Masulis, 1988) for their perquisites and bonuses, rather than investing in a long-term investment such as non-current assets (Stulz, 1990) or managers may choose to invest in risky projects for higher profits which increases the default risk (Masulis, 1988). According to Stulz (1990) shareholders want to increase firms resources to increase profits, hence, larger stock yield. However, managers may choose to zero dividends for shareholders and reinvest all the net profits (Harris & Raviv, 1991).

In addition, Harris and Raviv (1990) state that managers will continue to function in their roles with the same performance even if a firm has going concern problem (e.g., company is not trading and does not have any cash or revenue-generating assets, insufficient evidence to support the ability of the company to raise sufficient capital to commence exploration activities) which may subsequently have to liquidate. The conflict of interest between managers and shareholders may also arise from information differences between managers and shareholders known as informational asymmetry, a situation where – for example – managers disclose only favorable events/news that increases their welfare, while investors, on the other hand, cannot have access to unfavorable events/news (do not have access to all information), which in turn increase informational asymmetry, increase firm's cost of equity, and make the stock of firms less liquid. The above risks (risks associated with maximizing the conflict of

interest between managers and shareholders) are part of the risks of material misstatement paragraph in the extended auditor's report. With such risk, auditor is expected to assess audit risk as “high audit risk” and applies a different audit procedure.

Several mechanisms may serve to limit the conflicts of interest between managers and shareholders by aligning the interests of both groups. Agency theory provides a number of external and internal factors known as “mechanisms” to resolve problems that occur due to the conflict of interest between managers and shareholders as these issues cannot be resolved by the market (Jensen, 1993), or legal rules (Shleifer & Vishny, 1997). External mechanisms include the use of audit, institutional ownership, and the level of debt, where internal mechanisms include the board of directors, ownership by managers, and executive compensation (Barnhart & Rosenstein, 1998).

A solution to agency problem may be found in the use of the firm ownership of managers (internal mechanisms). It is based on the view that managers are more likely to manage the firm more effectively and to behave in the interests of the principal when managers are given the ability to increase their ownership of the firm. According to Jerzemowska (2006), this would tie the wealth of the executives to the wealth of shareholders, hence, the interests of managers and shareholders are aligned.

Jensen and Meckling (1976) argue about the negative link between managers’ ownership and managerial opportunism and show how increasing the firm ownership of the managers decreases managerial opportunism. This is in line with Mudambi and Nicosia (1998) who suggest that the conflict of interest between managers and shareholders could decrease if managers own shares in the firm. In doing so, agency problem is reduced and firm performance is enhanced (Jensen & Meckling, 1976). Similarly, Brailsford, Oliver, and Pua (2002) provide support for the argument that the ownership influences the firm’s capital. They find that the

level of managerial share ownership effects leverage suggesting that managerial ownership is an active monitoring mechanism. In more recent research using a sample of French manufacturing firms, Margaritis and Psillaki (2010) find that more concentrated ownership is associated with more debt in the capital structure, hence greater monitoring role. This finding is supported by a number of other studies in different settings (Ahmed & Wang, 2012; Ruan, Tian, & Ma, 2011; Shyu, 2013; Sun, Ding, Guo, & Li, 2016).

Based on the above theory and given the two conflicting perspectives on the impact of managerial share ownership on firm performance, various studies establish the relationship between ownership and firm performance. For example, Mehran (1995) and Wruck (1989) find evidence of a positive relationship between management equity ownership and firm performance. In the U.S., Jain and Kini (1994) compare operating performance of firms that transferred from private to public ownership. They find a positive relationship between managerial ownership and corporate performance in firms going public. In addition, Loderer and Martin (1997) argue about the positive relationship between the managers ownership and better firm management. Using cross-sectional analyses, they show that a large managerial shareholding improves performance. Loderer and Martin's work is similar to work of Lambert and Larcker (1987) and Lewellen, Loderer, and Rosenfeld (1985) who find that larger managerial stockholdings are associated with more positive acquisition (better firm management).

More recently, Chen and Yu (2012) use a sample of 98 firms listed on the Taiwan Stock Exchange and argue about the impact of corporate diversification on firm performance. Their multiple regression analyses show that firm performance (ROA) increased in firms with higher levels of managerial ownership. In New Zealand context, Fauzi and Locke (2012) find managerial ownership has a positive and significant impact on firm performance. Similar

findings are echoed in other prior studies (e.g., Bhabra, 2007; Reddy, Locke, & Scrimgeour, 2010).

Tobin's Q is also found to increase when managers increase their ownership. For example, Morck, Shleifer, and Vishny (1988) find that when ownership increases to 5%, Tobin's Q increases. This is also supported by McConnell and Servaes (1990) who find a significant increase of Tobin's Q after increasing managerial ownership. These studies use first-stage least squares (SLS). In papers that use three-stage least squares (3SLS), the results are the same, that ownership by officers, directors, and CEO has a significant positive influence on corporate performance measured as Tobin's Q (Agrawal & Knoeber, 1996; Chung & Pruitt, 1996). This finding is further supported by Fahlenbrach and Stulz (2009) who examine the influence of managerial ownership dynamics on firm value for American firms from 1988 to 2003 and find that large increases in managerial ownership increase Tobin's Q. This is consistent with the findings of McConnell, Servaes, and Lins (2008) who study the linkage between Tobin's Q and shares controlled by officers and director (level of insider share ownership). Using data from Compact Disclosure for a sample of 172 U.S. firms over the period 1994 through 1999, McConnell et al. (2008) find that changes in insider ownership is linked with changes in the value of the firm.

Collecting data from 321 firms and using ordinary least squares (OLS) estimation to examine the link between managerial ownership measured as percentage of shares owned by officers and directors, Barnhart and Rosenstein (1998) find that as the percentage of shares owned by officers and directors increases, firm performance increases. In more recent empirical papers, the study of Ke and Isaac (2007) investigates the relationship between ownership structure and financial performance in Chinese property industry. Ke and Isaac's study uses a sample of 137 listed property companies in China between 2000 and 2002 and provides evidence on the positive relationship between state ownership and corporate performance. Based on

multivariate tests to examine the nonlinear relation between managerial equity ownership and return on assets, Jelinek and Stuerke (2009) find that managerial ownership has a positive and non-linear influence on return on asset and asset utilization. In China, Lin, Ma, and Su (2009) find that firm efficiency is positively related to employee share ownership and this result supports that internal ownership can be an effective internal governance mechanism.

The above studies suggest that the agency problem is reduced as a result of increasing managers' ownerships, and this resulted in an increase of firm's value. Surprisingly, in spite of the pervasive claims, a number of studies are not consistent with the empirical traces of a relation between managerial ownership and firm performance. For instance, Demsetz and Lehn (1985) find no significant variations in firm performance when examining managerial ownership. Similarly, Loderer and Sheehan (1989) compare between bankrupt firms and non-bankrupt firms. They find the level of the ownership of officers and director's ownership are the same in both bankrupt firms and non-bankrupt firms suggesting that ownership does not prevent firms going bankrupt. This is also consistent with the findings of Denis and Denis (1994) and Holderness and Sheehan (1988) who find firm performance is the same amongst controlled and non-controlled firms.

Mudambi and Nicosia (1998) investigate the association between ownership structure and firm performance with a focus on the proportion of director ownership in firms. Using a sample of 111 listed financial services firms in the U.K. for the period of 1992 to 1994, they find that managerial share ownership alone is unlikely to affect firm performance if the ownership is not accompanied by control. Their study does not find a specific range in which entrenchment is dominant. In another study, Tsetsekos and DeFusco (1990) construct portfolios arranged in accordance with managerial ownership, and they find no significant variations in the returns of the portfolios.

In line with Mudambi and Nicosia (1998), McMahon (2007) examines the association between ownership structure, financial performance and business growth of small and medium enterprises (SMEs) in Australia. Based on data from a sample of 6,400 business units, the findings of his study suggest that management ownership has no impact on firm performance. Similarly, Shin-Ping and Tsung-Hsien (2009) investigate the relationship between the level of various forms of corporate ownership and firm performance. They report a negative relationship between insider ownership, government ownership and financial performance.

Interestingly, some studies show insignificant relationship between firm performance and managerial ownership, others find a negative link between these two variables. For example, Johnson, Magee, Nagarajan, and Newman (1985) document a market reaction when the manager who owns the firm is not active anymore. Correspondingly, Morck et al. (1988) find a negative relationship between ownership and performance claiming that when managers increase their shares, they become entrenched. They indicate that management share ownership can generate the entrenchment effect whereby managers make specific investments that make it difficult for shareholders to replace them. In more recent study, Oh, Chang, and Martynov (2011) examine the linkage between firm ownership and the firm corporate social responsibility. They find that shareholding by top managers is negatively associated with the firm's corporate social responsibility. Their results, however, are based on short-term versus long-term orientation. In general, the above studies argue about the role of ownership on agency problems, hence firm performance.

In general, the above studies argue about the influence of management ownership on (1) managerial opportunism, (2) firm's capital, firm performance (e.g., more positive acquisition, return on assets, Tobin's Q), and (3) business growth. Unlike this thesis, there is no study that

provides evidence showing the linkage between management ownership and the disclosures of risks of material misstatement.

2.2.1.2 Board and agency problem

As discussed previously, board of directors, and ownership are variables of corporate governance that are widely used to describe how to reduce agency problems between managers and shareholders. Reducing such problems throughout ownership concentration and/or the effectiveness of the board of directors can control manager behavior and reduce information asymmetry between firm management and investors (Akhtaruddin & Haron, 2010). Reducing information asymmetry would affect auditor's judgment in terms of pre-planning and planning the audit (Cohen & Hanno, 2000). Therefore, characteristics of board of directors including its expertise, independence, ownership, composition, and size are used by authors. For instance, McKnight and Weir (2009) examine the impact of corporate governance and ownership variables on agency costs. They hypothesize that the adoption of new corporate governance structures as required under the U.K. Combined Code law would lead to suboptimal governance structures because corporate governance systems are designed to maximize shareholders wealth. The authors argue that firms with low agency costs are characterized by high sales to total assets and low free cash flows to growth rates. Also, firms with low agency costs have fewer acquisition rates because managements tend to use acquisitions as a means for increasing their pay and gaining power at the expense of maximizing shareholders wealth.

In their study, agency costs (the dependent variable) are represented by: the ratio of sales to total assets, free cash flows to firm growth, and the number of acquisitions undertaken by a firm within a given period. Similar to this thesis, their independent variables, on the other hand, are the various requirements of the Combined Code in terms of how the board of directors of companies in the U.K. should be constituted. The variables include: the number of executive

directors, tenure of the CEO, level of institutional ownership, and the level of debt among others.

The variables in this research are similar to McKnight and Weir's research variables as it also investigates the relation between these corporate governance variables on the value of auditor's disclosures. These variables affect agency costs based on extant literature. For instance, inclusion of non-executive directors in the board is believed to reduce agency costs since the directors are less entrenched in the company and therefore more independent than executive directors (Brickley, Coles, & Terry, 1994). Using a sample of 128 non-financial firms listed in the FTSE 350 Share Index, McKnight and Weir (2009) find that inclusion of non-executive directors and audit committees in boards of governors and institutional ownership increase agency costs while the tenure of the CEO reduces agency costs. In addition, they find that director ownership of a company's shares and presence of debt also reduce agency costs. Their results imply that the board of director characteristics and ownership characteristics can affect the auditor's judgment in relation to the risks of material misstatement disclosures. If a firm has non-executive directors who have no incentive or who lack the necessary firm-specific knowledge to monitor management effectively, the financial reporting process of the firm will be less reliable, hence influence audit process (Cohen et al., 2002).

These findings are supported by Dunn and Sainty (2009) who examine the relationship between board of directors' characteristics and financial performance of firms. Using a sample of 50 top companies in Canada between 2002 and 2006, Dunn and Sainty (2009) document a positive linkage between board of directors characteristics and financial performance of firms. The results of McKnight and Weir (2009) and Dunn and Sainty (2009) suggest that a firm board of directors and their ownership are more likely to influence the firm financial performance.

Prior studies argue about the role of board of directors including its size, composition, and expertise in the area of corporate governance. This is because the board is one of the elements of corporate governance to monitor the firm's operations and make strategic decisions to sustain the firm's business. According to Raheja (2005), there are two main functions of the board, namely: advisory and monitoring. The advisory role involves providing expert advice to management and helping the company to access critical information and resources. This role of the board is consistent with the resource dependency theory which states that the board should establish strategies and policies that help the management to implement the company's strategic plan (Cohen et al., 2007).

In this respect, board size is one of the key factors that could affect the board's effectiveness. The advantage of a large board is that it has greater collective information than a smaller one (Dalton & Dalton, 2005). As a result, large boards tend to perform the advisory function more effectively than small boards. Second, a larger board has more of a monitoring role to ensure that the actions of management are consistent with shareholders' interests (Guest, 2009). This role is based on the agency theory which states that management has incentives of acting against the interests of shareholders (Jensen & Meckling, 1976).

However, it is argued that there are disadvantages of having larger boards. First, communication and coordination problems arise in large boards because it is more difficult to arrange for board meetings and reach agreements (Guest, 2009; Jensen, 1993). Thus, large boards are characterized by slow and less efficient decision-making. Second, board cohesiveness is impaired in large boards since in such a situation board members are less likely to share a common goal, communicate with each other clearly, and reach consensus because of increased differences in points of view (Guest, 2009; Lipton & Lorsch, 1992). In addition, free riding tends to increase in large boards as the cost to each individual director of not performing

their role effectively decreases with increase in board size (Guest, 2009; Lipton & Lorsch, 1992).

Belkhir (2009) investigates the association between board size and financial performance in the banking industry. The sample of his study comprises of 174 bank holding companies and savings and loans holding companies operating in the U.S. between 1995 and 2002. Belkhir (2009) indicates that board size is positively related to financial performance in the banking sector. In contrast, Guest (2009) investigates the effect of board size on firm performance. Using a sample of 2746 U.K. firms, Guest (2009) finds that there is a negative relationship between board size and performance in large firms.

On the other hand, Klein (1998) looks at the relationship between board composition and firm performance. She argues that there would be no significant relationship between firm performance and board composition as a whole, but there would be a significant relationship between firm performance and the percentage of inside directors. Klein (1998) hypothesizes that a higher proportion of inside directors in the financing and long-term investment committees will be linked with higher firm performance. Her hypotheses are based on the view that boards require specialized knowledge and expertise regarding the firm's activities in order to recommend the appropriate long-term strategies. Using a sample made up of 485 S&P 500 firms in the period between 1992 and 1993, and consistent with Fama and Jensen's (1983) assertion that inside directors provide valuable information, the results of her study show that there is no relation between firm performance and the composition of the board as a whole. By looking at the roles of the three groups of directors separately against different performance measures, however, her study is able to obtain a significant positive relationship between board composition and firm performance.

While it is widely believed that a higher number of outsiders increase the monitoring role over the managers which lead to increase the performance of the firms, Klein (1998), on the other hand, finds that a higher number of inside directors does increase firm performance. Therefore, there are mixed results on the role of board, and this current research seeks to further examine the role of board structure on the risks of material misstatement disclosures.

2.2.1.3 Financial statements and agency problem

The above studies provide evidence on the role of board of directors, ownership by managers, and executive compensation in reducing managerial opportunism, hence, enhance firm's value. However, one can argue that since mechanisms of corporate governance are found to reduce managerial opportunism and in turn increase firm performance, corporate governance mechanisms can also influence financial statements including its quality, disclosures, freeness from material misstatements, compliance with accounting standards, and true and fair view.

For example, prior studies examine the relationship between the mechanisms of corporate governance and the problems in financial statements applying, for instance, in the context of fraud. Risk of fraud is an inherent risk that affects all areas of the audit including its procedures (IAASB, 2009g) and the risks of material misstatement could occur due to fraud, or error, and/or both (IAASB, 2009c). Hence, summarizing the influence of corporate governance mechanisms on the financial statements including its freeness from fraud cases is relevant in this thesis as this study explores the key corporate governance factors that influence auditor's judgement in relation to the risks of material misstatement and audit materiality. Sharma (2004)

looks into the effect of board independence, institutional ownership, and no duality¹⁸ on the risk of fraud in Australian firms. Her research examines the effect of having a more independent board on the reduction of fraud risk because greater independence and no duality were some of the recommendations put forward to strengthen the monitoring ability of boards. She also examines the role that institutional ownership plays in reduction of fraud risk.

Sharma (2004) is not the first to examine the relationship between board independence, institutional ownership, and no duality on the risk of fraud. Various studies indicate that board independence – using the context of audit committees – can reduce the risk of fraud. For instance, Beasley (1996), after conducting a descriptive study of fraud and corporate governance structures, finds that fraud is more prevalent in boards without audit committees. Moreover, he finds companies that had high levels of fraud and had audit committees are those where most of the audit committee members were insiders. Further, McMullen (1996) investigates the role played by audit committees and their effectiveness through a survey of companies that suffered financial reporting problems and those that did not. The findings of his research indicate that firms that suffered financial reporting problems (i.e., the occurrence of errors, irregularities and illegal acts) had audit committees that were not fully composed of external members. His finding is compatible with other studies. For example, the study of Goh (2009) suggests that an effective audit committee has an important role in improving the quality of financial reporting. Ashbaugh-Skaife, Collins, and Kinney Jr

¹⁸ In Sharma's study, no duality means that chairperson of the board of directors should not be the CEO.

(2007) and Doyle, Ge, and McVay (2007) argue that firms with weak financial reporting are more likely to have weaker internal controls.

In addition, Seamer and Psaros (2000) examine the relationship between the percentage of internal directors, gray directors, and independent directors on the board of 27 firms affected by fraud and 27 firms not affected by fraud in the Australian Stock Exchange between 1985 and 1988. They find that companies with a high proportion of internal directors are more likely to experience fraud than companies with a low proportion of internal directors. More recently, Fich and Shivdasani (2007) study the relationship between corporate governance elements and the likelihood that a company is sued for financial fraud. They find that a firm board with (1) non-independent directors, (2) less financial expertise, and (3) CEO duality is more likely to be sued for financial fraud. This finding is supported by a more recent study of Beasley, Carcello, Hermanson and Neal (2010) who find that fraud firms have non-independent directors on the audit committee. However, these studies do not examine the relationship between independence of board and institutional ownership on the disclosures of risks of material misstatement. Furthermore, these studies focus mainly on risk of fraud.

A number of studies extend the literature by not only examining the linkage between internal corporate governance (e.g., board and the audit committee) and fraud, but also the external corporate governance (ownership) and fraud. This is because ownership including institutional ownership has incentives to protect their investment and thereby reduce agency problems through close monitoring of management actions (Jensen, 1993). Due to the dominance of institutional investors in the shares of listed companies in most western economies, institutional investors' involvement in corporate governance has been increasing. Some studies, however, find no significant effect of increasing institution involvement in corporate governance (Abbott et al., 2000; Beasley, 1996). This suggests that

further investigation is needed on the roles played by institutional shareholders on firm corporate governance.

In external corporate governance, and fraud-related study, Chen, Firth, Gao, and Rui (2006) examine the link between ownership structure, corporate governance and fraud in China. Consistent with Chen et al. (2006), this thesis extends their study by establishing whether firm governance and ownership structure have any influence on the disclosures of risks of material misstatement.

Using a sample of 338 fraud and none fraud firms over the period of 1999 to 2003, Chen et al. (2006) provide evidence that a higher percentage of outside directors is associated with lower incidences of fraud. They also find that a low frequency of board meetings has a negative relationship with fraud. Similarly, their study finds that short tenure board chairs are positively related to incidences of fraud. Moreover, they find that ownership characteristics are not very significant in explaining incidences of fraud. However, they find that legal entity stockholders such as state-owned enterprises are positively associated with fraud incidences under univariate analysis. The findings of Chen et al. (2006) imply that a higher frequency of board meetings, higher percentage of outside directors, short tenure board chairs, and higher state ownership can affect the risk of fraud and thereby the disclosures of risks of material misstatement. This study extends the literature by arguing that while mechanisms of corporate governance can affect fraud occurrence which is a part of RMM disclosures in the extended auditor's report, it is expected that such mechanisms can also influence the levels of auditor's disclosures in relation to the risks of material misstatement and audit materiality.

2.2.1.4 Disclosures and agency problem

Over decades, several authors use the term *monitoring of manager's behavior* when they examine the impact of corporate governance on firm disclosures. This term mainly came from

Jensen and Meckling's (1976) theory. It is based on the view that when a manager's behavior is less controlled, agency problem is greater. That is, the manager has potential to maximize their wealth and perform less effectively, hence, shareholders' wealth is at risk.

As the manager's behavior is less controlled, information environments are expected to be affected. That is, the manager may choose not to provide enough information to shareholders especially when there is, for example, a case of good/bad news. This is found by Aboody and Kasznik (2000) who show that managers try delaying good news. This resulted in an information symmetry between shareholders and managers. As a result, shareholders increase their monitoring over managers via board of directors (Fama, 1980), and managerial ownership (Jensen & Meckling, 1976). Greater monitoring over managers would in turn improve information environments as monitoring provides shareholders the ability to monitor management's activities (Hermalin & Weisbach, 2012).

Several empirical studies provide evidence on the relation between firm corporate governance and its information environment. For example, Warfield, Wild, and Wild (1995) use the theory of the firm to build the argument that corporate governance affects the level of information. Using pooled cross-sectional regression model for 4,778 firm-year observations, they indicate that the elements of a firm corporate governance are positively associated with the informativeness of accounting disclosures. This is consistent with the findings of Forker (1992) that corporate governance (audit committee) is an effective monitoring tool to improve disclosures and reduce agency costs, and with Leftwich (1981) who finds a positive relationship between firm disclosures and firm corporate governance (measured as the number of independent directors on the board).

In addition, Barako, Hancock, and Izan (2006) argue that audit committee increases monitoring role over the management and improving corporate disclosure processes. This is consistent

with the similar work of Akhtaruddin and Haron (2010) who provide evidence supporting that more independent directors on the audit committee increase disclosure levels and reduce information asymmetry between firm management and investors. In more recent study, Madi, Ishak, and Manaf (2014) investigate the impact of audit committee characteristics on corporate disclosure. Using a sample of 146 Malaysian listed firms, they find audit committee independence, size and multiple directorships of audit committee members are positively associated with corporate voluntary disclosure.

It is important to know that different mechanisms are applied by different research to measure the influence of firm corporate governance on the firm disclosure. For example, the use of the proportion of managerial ownership to show its potential effects on increasing the disclosures (Anh Vu, Tower, & Scully, 2011; Huafang & Jianguo, 2007); Kaplan and Minton (1994) use blockholder ownership; Eng and Mak (2003) use board composition; and finally Chen and Jaggi (2000) use independent non-executive directors and its role on providing more comprehensiveness of information in mandatory financial disclosures. This thesis, however, embraces a large number of mechanisms to measure the influence of firm corporate governance

on the auditor's disclosures in relation to the risks of material misstatement and audit materiality.¹⁹

In addition, Bushman, Chen, Engel, and Smith (2004) examine the relation between firm corporate governance and its information environment. They use cross-sectional regression and find strong corporate governance provides less timely accounting information. This is also consistent with Armstrong, Balakrishnan, and Cohen (2012) who study the link between information asymmetry, private information, and corporate governance. Their cross-sectional analyses indicate that information asymmetry and private information gathering decreased and that financial statement informativeness increased following adoption of the new set of mechanisms. Further, Aman, Beekes, and Brown (2017) argue about the influence of better-governed firms on the disclosures. They adopt both mandatory and voluntary disclosures to Tokyo Stock Exchange (TSE). Using a sample size of 1,754 Japanese companies, and pooled ordinary least squares (OLS) method, they find that better-governed firms make earlier and more public disclosures than those with weaker governance.

¹⁹ A number of studies use the term of “audit judgment” rather “auditor’s judgment”. This study, however, uses term of “auditor’s judgment”. This is to be consistent with Auditing Standard of PCAOB and International Standard on Auditing. For example, Paragraph 11 of International Standards on Auditing No. 540 (ISA 540, 11) uses the term of auditor’s judgment when the auditor determines whether accounting estimates that have been identified as having high estimation uncertainty give rise to significant risks (IAASB, 2009b). Also, Auditing Standard No. 13 uses the term of auditor’s assessment, auditor’s opinion on internal control over financial reporting, auditor’s control risk assessment, auditor’s tests of the effectiveness of controls, auditor’s responses, and auditor’s disclosures in an audit of financial statements when providing requirements regarding designing and implementing appropriate responses to the risks of material misstatement (PCAOB, 2010a).

Using Australian companies in 2000 and 2002, O’Sullivan, Percy, and Stewart (2008) use a number of corporate governance elements²⁰ including (1) audit quality (measured as presence and independence of the audit committee, its meeting frequency, the use of a Big 6 auditor and the auditor’s independence), (2) board committees (measured as the appointment and independence of a compensation committee and the creation of a nomination committee), and (3) the overall efficacy of the corporate governance to investigate the role played by the corporate governance framework in the disclosures of all types of forward-looking information. They find that all these elements are positively associated with the disclosures of forward-looking information.

Using Canadian firms, Beekes, Brown, Chin, and Zhang (2016) examine whether corporate governance has an influence on Canadian firms’ disclosure practices. They use six measures of corporate governance: (i) board independence; (ii) directors’ ownership; (iii) board and committee structure; (iv) board evaluation process and directors’ compensation; (v) board decision output; and (vi) total corporate governance. Their results are in line with the evidence that better-governed firms make more disclosures (quantity of information which is released to the market). Their results are built on prior research (Beekes & Brown, 2006; Beekes et al., 2015; Lim, How, & Verhoeven, 2014; Liu, 2012). In China, Haß, Vergauwe, and Zhang (2014) study the link between a firm corporate governance level and its information environment. Using a sample consisting of 2324 firms over the 2003–2011 period, they find that firms with better governance tend to be associated with larger analyst, more informative, and more

²⁰ Different authors call corporate governance variables differently including elements, category, and factors. For example, O’Sullivan et al. (2008) use the term “category” of corporate governance when studying the linkage between corporate governance and disclosures. In this study, the author names corporate governance variables as the elements.

frequent disclosures. The above discussions of prior literature suggest that improved monitoring tools over the management, an effective corporate government increases firm-level disclosures. Therefore, this study extends the literature by examining how corporate governance elements influence the levels of auditor's disclosures in relation to the risks of material misstatement and audit materiality.

2.2.2 Corporate structure and audit process

2.2.2.1 Audit risk

Paragraph 12 of International Standards on Auditing No. 315 (ISA 315.12)²¹ states that the auditor shall obtain an understanding of internal control relevant to the audit (IAASB, 2009c). Paragraph 14 of International Standards on Auditing No. 315 (ISA 315.14) points out that control environment is a component of internal control, therefore auditors will also need to gain a deep understanding of the control environment (IAASB, 2009c). According to International Standards on Auditing No. 315 (ISA 315.14), as part of obtaining this understanding, the auditor shall evaluate whether: (a) management, with the oversight of those charged with governance, has created and maintained a culture of honesty and ethical behavior; and (b) the strengths in the control environment elements collectively provide an appropriate foundation

²¹ International Standards on Auditing No. 315 deals with the auditor's responsibility to identify and assess the risks of material misstatement in the financial statements. This is done by understanding the entity and its environment, including the entity's internal control (IAASB, 2009c). The auditor, after identifying and assessing the risks of material misstatement in the financial statements, is expected to disclose in his/her report the procedures undertaken during the audit (FRC, 2013a).

for the other components of internal control, and whether those other components are not undermined by deficiencies in the control environment (IAASB, 2009c).

This audit procedure is called by International Standards on Auditing No. 330 (ISA 330.06) “tests of controls” that is, the auditor shall design and perform tests of controls to obtain sufficient appropriate audit evidence as to the operating effectiveness of relevant controls (IAASB, 2009a). According to Paragraph 8 of International Standards on Auditing No. 330 (ISA 330.8a), this audit procedure is only conducted if the auditor’s assessment of the risks of material misstatement is “less than high” that is, controls are operating effectively (IAASB, 2009a). According to Paragraph 9 of International Standards on Auditing No. 330 (ISA 330.9), in this less than high assessment, the auditor shall obtain *more* persuasive audit evidence to support his assessment on the effectiveness of a control (IAASB, 2009a). However, if the auditor’s assessment of the risks of material misstatement is high (that is, controls are operating ineffectively e.g., (1) controls do not exist and (2) controls exist but are not capable of effectively preventing, or detecting and correcting, material misstatements, the auditor will perform no tests of controls and will adopt different audit procedures (that is, substantive tests) (ISA 315. A66).

As a result of the strong link between the auditor’s judgment and internal control mentioned by International Standards on Auditing No. 315, various studies indicate that the strength of corporate governance influences audit planning judgments, and audit effort (Cohen et al., 2007; Sharma et al., 2008). In other words, the strength of corporate governance has an important role on auditor’s determination of factors like client business risk and the timing and extent of audit tests. However, this role is characterized by factors that (1) strengthen the ability of the board to monitor management such as a board of directors with the audit committee to strengthen financial audits, (2) non-executive directors to increase board independence, and (3) requiring a significant number of board members to have financial and accounting knowledge

and expertise (Biswas, Bhuiyan, & Ullah, 2008). On the other hand, the resource dependence role of the board helps the company cope with environmental uncertainty, establish effective business strategies, and gain access to external resources. This role is characterized by board members that have expertise and knowledge that can help the company to access certain resources in the external environment (Biswas et al., 2008).

If this is the case, the value of auditor's disclosures in relation to the risks of material misstatement and audit materiality is likely to vary depending on the strength of a company governance. If a company is better governed, this can reduce agency problems leading to reduce audit risk. If the audit risk is assessed as less than high, auditors should extend the effort to support this assessment. This is consistent with International Standards on Auditing No. 315 (ISA 315.14) that the auditor shall evaluate the design of those controls and determine whether they have been implemented, by performing procedures in addition to inquiry of the entity's personnel (IAASB, 2009c), and International Standards on Auditing No. 330 (ISA 330.09) that the auditor shall obtain more persuasive audit evidence the greater the reliance the auditor places on the effectiveness of a control (IAASB, 2009a). On the other hand, for companies with weak governance, auditors are less likely to provide more disclosures in their reports due to the limitation of information²² obtained by auditors and provided by managers.

A number of studies that relate to this thesis investigate the linkage between strength of corporate governance, planning judgments, and audit effort. For instance, Sharma et al. (2008)

²² As reported by Paragraph 7 of International Standards in Auditing No. 7025 (ISA 705.07), it is vital to highlight that if managers have limited information and that such information would be necessary for the audit, the auditor would raise such matter in his report and would issue a qualified audit opinion (IAASB, 2009e).

investigate the impact of non-mandatory corporate governance on auditors' client acceptance, risk and planning judgments. Sharma et al. (2008) use a sample of 60 audit managers in Singapore working for the Big 4 audit firms. The managers participate in an experiment where they make acceptance, risk and audit planning judgments based on a description of the board and audit committee characteristics of a hypothetical company. They find that the rate of client acceptance is high when the corporate governance structures are strong and that the strength of corporate governance influences auditors' judgment of control and inherent risk.

The findings of Sharma et al. (2008) suggest that corporate governance can affect the audit process and thereby the value of auditor's disclosures. If auditors assess the corporate governance of a firm as strong, they are likely to make favorable assessment of control and inherent risk of the company and set higher levels of extent (audit test of control) to base this favorable assessment as more persuasive audit evidence, the greater the reliance the auditor places on the effectiveness of a control (ISA 330.9). It is important to note that auditors are expected to assess control risk at the maximum level for relevant assertions (1) for which controls necessary to sufficiently address the assessed risks of material misstatement in those assertions are *missing* or *ineffective* or (2) when the auditor has not obtained sufficient appropriate evidence to support a control risk assessment below the maximum level (PCAOB, 2010a).

In a similar manner, Cohen et al. (2007) look into how the roles of the board of directors affect auditor's risk assessment and audit planning decisions. Like this thesis, Cohen et al. (2007) focus on the agency and resource dependency roles of directors because the agency role of the board of directors stresses on monitoring management. The sample of their study is 68 audit partners and managers who evaluated a case in which the roles of the board were manipulated on the basis of agency role (strong or weak) and resource dependence role (strong or weak). The results of their study show that auditors' inherent risk assessments are not significantly

affected by the resource dependence role of the board of governance. However, they find that control risk assessment increases when the board plays a weak agency role and a weak resource dependence role (Cohen et al., 2007). Their findings indicate that auditors assess control risk as less than high in firms with more effective control (strong agency and strong resource dependence role). Consistent with the findings of Cohen et al. (2007), this study adopts both the disclosures of inherent risk assessment and disclosures of control risk assessment in the extended auditor's report.

It is worth reminding that it is expected that inherent risk assessment and control risk assessment are associated. This is argued by Messier Jr and Austen (2000) who investigate the effect of pervasive and specific risk factors in the assessment of control risk and inherent risk by auditors. Messier Jr and Austen (2000) conduct an experiment involving 124 senior auditors and managers practicing in the U.S. The results of the experiment show significantly positive association between control risk and inherent risk assessment by auditors. They also find that pervasive and specific inherent and control risk factors are significant in both auditors' IR and CR assessments.

2.2.2.2 Audit planning

Prior research underlines the significance of governance and management philosophy in ensuring integrity in the financial reporting process (Beasley et al., 1999; DeZoort & Salterio, 2001). This is because corporate governance sets the tone for the entire control environment in the organization by monitoring management actions. Another perspective holds that corporate governance is largely for meeting regulatory requirements like having non-executive directors on the board (Cohen et al., 2002).

Based on this view, corporate governance can affect the audit plan and the effort by auditors. This is supported by Cohen and Hanno (2000) who address the effect of the quality of corporate

governance and management philosophy (component of internal control) on the pre-planning (client acceptance and business risk judgment) and planning judgments (timing and extent of testing) of auditors. Cohen and Hanno (2000) argue that auditors will make client-acceptance judgments more (or less) favorable based on the quality of corporate governance as well as management control philosophy. They also argue that auditors will increase (or decrease) timing and extent of testing after considering both the quality of corporate governance and management control philosophy.

In their paper, 96 auditors based in the U.S. evaluate a fictitious client with corporate governance or management philosophy that is either weak or strong (Cohen & Hanno, 2000). They find that management control philosophy and the governance structure affect the pre-planning and planning judgments. They also observe that management control philosophy has the stronger effect on the pre-planning and planning judgments. Finally, their study shows that auditors perform less substantive tests when clients have strong corporate governance. The timing of tests is, however, not affected by the strength of corporate governance.

However, the study of Cohen and Hanno (2000) is based on old audit procedures. International Standard on Auditing No. 330 (ISA 330.2) provides new audit procedures and this ISA 330 is effective for audits of financial statements for periods beginning on or after December 15, 2009. As discussed earlier, one of the new audit procedures is that auditors are expected to perform more tests of controls in firms with effective controls because the more persuasive the audit evidence is, the greater the reliance the auditor places on the effectiveness of a control (IAASB, 2009a). In addition, according to Paragraph 16 of Auditing Standard No. 13 (AS 13.16) that when applying a lower risks assessment, the auditor must obtain evidence that the controls selected for testing are designed effectively and operated effectively during the entire period of reliance (PCAOB, 2010a).

It is necessary to mention that tests of controls are not like the substantive procedures (substantive approach). According to Paragraph 18 of International Standard on Auditing No. 330 (ISA 330.18) that irrespective of the assessed risks of material misstatement, the auditor shall design and perform substantive procedures for each material class of transactions, account balance, and disclosure (IAASB, 2009a). However, as stated by Paragraph A11 of International Standard on Auditing No. 330 (ISA 330.A11), if auditors assess the risks of material misstatement as high (that is auditors cannot rely on internal controls), the more likely it is that the auditor may decide it is more effective to perform substantive procedures than tests of controls (IAASB, 2009a).

In another study, Cohen et al. (2002) examine how corporate governance influences the audit process by interviewing 36 US-based auditors on non-current audit practices considering corporate governance in the audit process. They find that corporate governance is a key consideration in making audit decisions. The participants in their study believe that the greater the power of the board of directors, the more likelihood that auditors will rely on corporate governance in making pre-planning and planning judgments. The participants also disclose that the majority of auditors consider the audit committee to be of secondary importance relative to the power of the board.

It is worth noticing that professional standards bodies such as International Standards on Auditing do not prohibit auditors to rely on governance and management of a firm if a firm has an effective internal control. This is stated by Paragraph 8 of International Standards on Auditing No. 330 (ISA 330.8a) that the auditor may intend to rely on the operating effectiveness of controls (IAASB, 2009a). However, as indicated by Gay and Simnett (2015) and International Standards on Auditing No. 315 (ISA 315.12) that the auditor cannot rely completely on the firm's internal control because it has some limitations; for example, the

differing quality and integrity of people working within the firm's internal control (IAASB, 2009c).

The findings by Cohen et al. (2002) suggest that corporate governance's influence on the audit process is linked to the credibility of management. If an auditor's assessment of the credibility of the client's management indicates that the management is reliable, the auditor will judge the client's corporate governance as strong which can lead to plan more tests of controls, leading to more disclosures in the extended auditor's report. Therefore, corporate governance can impact the value of auditor's disclosures either negatively or positively. In a study that examines the relationship between the effectiveness of clients' corporate governance and auditor's effort, Bedard and Johnstone (2004) use engagement partners' assessments and find that auditors change their planning decisions in firms with risks in their corporate governance. This indicates that the auditor assesses corporate governance risk. The study of Bedard and Johnstone (2004) does not use actual engagement actions implemented by the auditors in the presence of their risks assessment. This study, however, implies actual risks assessment implemented by the auditors. On a similar issue, Ng and Tan (2003) find that audit adjustment is higher in the absence of an effective audit committee.

The above studies, however, are dated and there is very little research examining the linkage between corporate governance and auditor's process due to the availability of recent data under the extended auditor's report.

2.2.3. Corporate governance structure, and audit materiality judgment

Auditors apply their professional judgment before and during the audit process. According to Paragraph 04 of Statement on Auditing Standards No. 107 (SAS 107 AU §312.03), one of the judgments made by auditors is materiality judgment (AICPA, 2006). The materiality, as expressed by Paragraph 6 of International Standard on Auditing No. 320 (ISA 320.06), is

determined when planning the audit does not necessarily establish an amount below which uncorrected misstatements, individually or in the aggregate, will always be evaluated as immaterial (IAASB, 2004).

International Accounting Standard No. 8 (IAS 8) defines material as “omissions or misstatements of items are material if they could, by their size or nature, individually or collectively, influence the economic decisions of users taken on the basis of the financial statements” (IASB, 2003). International Financial Reporting Standards (IFRS) defines material as “Information is material if omitting it or misstating it could influence decisions that users make on the basis of financial information about a specific reporting entity” (IFRS, 2017).

Paragraph 13 of Statement on Auditing Standards No. 54 (SAS 54. AU §317.13) indicates that the evaluation of the materiality could be assessed throughout (1) risk factors related to qualitative including illegal acts²³ and conflicts of interest in related party transactions (AICPA, 1989). In addition, Paragraph 54 of Auditing Standard No. 4105 (AS 4105.07) states that the evaluation of the materiality could be assessed using quantitative risk factors including percentage of sales, assets by type as a percentage of total assets (PCAOB, 2002). Although it is not necessary for auditors to consider both quantitative and qualitative factors, paragraph 9 of Auditing Standard No. 2105 (AS 2105.09) reminds auditors that in determining tolerable misstatement and planning and performing audit procedures, the auditor should take into

²³ AICPA defines illegal acts as “violations of laws or governmental regulations. Illegal acts by clients are acts attributable to the entity whose financial statements are under audit or acts by management or employees acting on behalf of the entity” (AICPA, 1989).

account the nature, cause (qualitative), and amount of misstatements (quantitative) that are accumulated in audits of the financial statements (PCAOB, 2010b).

However, there is a lack of professional guidelines for setting the level of materiality (Blokdijk, Driehuis, Simunic, & Stein, 2003). In addition, method of determining materiality is subjective (Joldoş, Stanciu, & Grejdan, 2010), as materiality is based on professional judgments – judgments which are likely to vary (Iskandar, 1996). Recently, Christensen et al. (2018) use the disclosure of quantitative materiality thresholds within the new auditor's report to study the influence of such materiality on professional investors' decision making. After using a $2 \times 3 + 1$ between-participant design, their results, based on 246 professional investors from the U.S. and the U.K., indicate that investors do not understand and do not know how auditors set levels of audit materiality as well as investors find disclosures of audit materiality is confusing.

The study of Christensen et al. (2018) is conducted because there has been a call from professional and regulatory bodies for more information related to auditor's judgment to increase levels of understanding of audit materiality (Christensen et al., 2018; Houghton, Jubb, & Kend, 2011). As a result, a number of authors have conducted studies to examine factors affecting auditor's assessments of planning materiality. For example, Elliott (1983) and Warren and Elliot (1986) provide evidence that audit client characteristics including the size of client have a strong association with the levels of planning materiality. This is consistent with the similar work of Blokdijk et al. (2003) who examine how audit client characteristics influence planning materiality, and find that auditors increase materiality when firms have high-quality internal control. They also find that auditors increase quantitative materiality when the rate of ROA is high. In addition, they find that auditors decrease the materiality in complex firms, and when firms report zero earnings.

In line with Blokdijsk et al. (2003), Whittington and Margheim (1993) argue about the negative association between materiality judgments and control risk, and show that when auditors apply low-materiality level, more tests of control are assigned. Further, Mayper (1982) investigates the link between auditors' materiality judgments and internal accounting control weaknesses. His experiment-based results show that the amount of materiality differ across different internal accounting control weaknesses.²⁴

However, Bernardi and Pincus (1996) find no relationship between materiality thresholds and judgments of fraud risk. Keune and Johnstone (2012) also examine the link between materiality judgment and the characteristics of audit committee. They find that qualitative and quantitative materiality judgments are influenced by audit committee characteristics with greater financial expertise than those with less expertise. This is supported by DeZoort, Hermanson, and Houston (2003) who contend that the quality of audit committee (more experienced and have CPAs) affects audit's materiality judgment. On another note, Frost (1997) examines the relationship between the levels of materiality and going concern audit opinion and finds that auditors apply low-materiality in firms that receive first-time modified audit reports.

Furthermore, the influence of non-financial factors on materiality judgments are examined by previous studies. For example, Carpenter and Dirsmith (1992) argue about the relationship between materiality judgment and auditor's experience. It is found that the size of item, earnings trend, and nature of transaction influence materiality judgment. Consistently,

²⁴ It is worth highlighting that there are little archival empirical studies on the determinants of the level of materiality because materiality judgments are complex and yet important to investors (Gleason & Mills, 2002).

Carpenter, Dirsmith, and Gupta (1994) also provide the same results that audit firm's culture influence materiality judgment.

In another related study, Krogstad, Ettenson, and Shanteau (1984) examine the influence of industry trends, management cooperativeness, the state of internal control, expected users of financial reports, and management's accounting policies on materiality judgment. They provide evidence that these non-financial factors are considered by auditors when making materiality judgment. Likewise, prior research provides evidence about the influence of client's industry classification on materiality judgment (Holstrum & Messier, 1982; Iskandar, 1996; Pany & Wheeler, 1989; Steinbart, 1987). Therefore, paragraph 7 of Auditing Standard No. 2110 (AS 2110.07) reminds auditors to obtain an understanding of the company and its environment ("understanding of the company") including (1) relevant industry and regulatory environment; and (2) the nature of the company when performing assessment (PCAOB, 2010c). Lastly, paragraph 10 of International Standards on Auditing No. 320 clearly states the relationship between audit materiality and audit risk that is "There is an inverse relationship between materiality and the level of audit risk, that is, the higher the materiality level, the lower the audit risk and vice versa" (IAASB, 2004).

The next section presents a review of relevant literature on the consequences of adopting the expanded auditor's report. As mentioned earlier, the aim of this new auditing standard is to narrow down information gap between auditors and investors as well as to enhance the transparency of audits to financial statements' users (FRC, 2013a). This is done by requiring the auditors to provide additional information that is more informative to users. However, one of the most controversial aspects of this new auditing standard is its potential effect on the three interest parts of financial statements. In response to this concern, several recent academic studies investigate the potential effect of CAMs on audit fees, the users of the auditor's report, and auditor liability.

2.3 Literature review for Study Two

2.3.1 Audit fees and risks of material misstatement

Over the past two decades, there have been a large number of studies on audit research focusing on the choice of auditors (Francis & Wilson, 1988) and the determinants of audit fees (Craswell, Francis, & Taylor, 1995; Francis & Simon, 1987; Simunic, 1980; Simunic & Stein, 1996). Within this rich body of literature, a substantial amount of research examines the determinants of audit fees since the seminal audit-pricing model (Simunic, 1980). Overall, it is argued that audit fees are determined by two groups of factors that are (1) agency theory and (2) a set of other factors as identified in previous literature (Nikkinen & Sahlström, 2004).

In relation to agency theory group, it provides explanations for the relationship between the owners of economic resources (the principals) and managers (the agents) who are charged with using and controlling those resources. In addition, it postulates that agency conflicts occur when there is a disparity between management and owner incentives. Hence, managers have incentives of acting against the interests of shareholders (Jensen & Meckling, 1976). Agency theory provides a solution that is “monitoring costs” to such situations where the “managers are not more likely to act in shareholders’ best interests” to “monitor the managers’ actions”.

Jensen and Meckling (1976) state that an audit is one type of monitoring activity that increases the value of the firm. Auditors are seen as one of the most important figures on monitoring managers’ actions as the external auditors have ability to disclose if the managers are not acting in shareholders’ best interests in addition to their power to inspect the company’s accounts (Nikkinen & Sahlström, 2004). Hence, a number of studies examine the impact of audit characteristics including audit risk and effort as reflected in audit fees on management behavior.

Many studies provide evidence on the relationship between the quality of corporate governance, the agency cost, and the audit fees. First, Jensen (1986) argues that firms with low levels of management ownership, agency costs are higher. Hence, auditor increases the audit fees and audit effort due to the lower levels of management ownership and higher level of agency costs (Nikkinen & Sahlström, 2004). In addition, Gul and Tsui (2001), and Nikkinen and Sahlström (2004) document a positive relationship between free cash flow (FCF) and audit fees. In relation to corporate governance and audit fees, Sharma et al. (2008), Cohen and Hanno (2000), and Cohen et al. (2002) argue that auditor's judgment vary based on the quality of corporate governance; furthermore, they find auditor's judgment including the fees is influenced by firm corporate governance.

Based on Jensen and Meckling (1976), managers' "behavior" is less controlled in companies with high agency problems, and therefore managers' actions are not aligned with "value-maximizing". Further, Shleifer and Vishny (1989) argue that a firm with higher agency problems is expected to increase their compensation and perquisites consumption with the loss of the shareholders. In addition, managers of these firms are expected to mask non-optimal expenditures by accounting manipulation (Christie & Zimmerman, 1994). Building on this, it can be expected that these firms are more likely to have more problems in financial statements and auditors are more likely to use more efforts and hence charge higher fees relative to regular inspection of accounts, to inspect managers' activities. This is supported by numerous previous studies which provide empirical evidence about the relationship between audit fees and the problems in financial statements.

First, the context of going concern audit opinion and audit fees is investigated by previous studies. For instance, using the context of going concern audit opinion and audit fees, Geiger and Rama (2003) examine the association between audit fees and audit opinions. They provide evidence that audit fees are significantly associated with going concern audit opinions. The

results of Geiger and Rama (2003) are in line with audit fees studies which argue that firms with going concern are risk-associated firms that require auditors additional auditing effort, hence auditors increase fees (Ratzinger-Sakel, 2013) and such associated risk firms have higher audit fees as recommend by the pricing model (Beatty, 1993; Bell et al. 2001; Firth, 2002; Francis, 1984; Francis & Simon, 1987; Kida, 1980; Palmrose, 1986).

Second, studying audit fees in the context of financial restatements and fraud is related. This is because when auditors cannot detect and prevent all material errors during a prior audit, restatement occurs which provides a sign of weakness in the firm's internal control (Feldmann, Read, & Abdolmohammadi, 2009). For example, Li and Lin (2005) and Blankley, Hurtt, and MacGregor (2012) argue that audit fees increase in firms that announce restatements and find a positive link between audit fees and future restatements. In case of fraud, it is documented by Sharma (2004) that audit fees are significantly and positively related to the likelihood of fraud. Third, in the case of weak internal controls, several studies provide evidence of the positive relationship between audit fees and firm weak internal controls (e.g., Hogan & Wilkins, 2008; Hoitash et al., 2008; Raghunandan & Rama, 2006).

In addition, the context of audit fees and clients' business risk is investigated by previous studies. This is because business risk may influence the operation, survival and profitability of a firm (Tahir & Paino, 2013), and this is also a critical matter to auditors (Johnstone, 2000). For instance, Bell et al. (2001), Mavin (2005), and Venkataraman, Weber, and Willenborg (2008) argue that audit fees are higher when the auditor perceives more business risk. They find that auditors charge more in firms with high business risk. In another study, Stanley (2011) states that audit fees can be also used as an indicator sign of clients' business risk including bankruptcy status. He finds that a positive link between audit fees and the one-year-ahead change of clients' operating performance.

In a similar recent note, Leidner and Lenz (2017) argue about the linkage between client's business risk and audit fees in Germany. Using a sample of 573 German credit institution-year observations over the period 2009–2011, they find a positive relationship between a credit institution's business risk and audit fees. Their results accord with a number of previous research which find credit institution's business risk is associated with audit fees (Cameran & Perotti, 2014; Cullen, Gasbarro, Monroe, Shailer, & Zhang, 2017; Fields, Fraser, & Wilkins, 2004). Consistent with the study of Leidner and Lenz (2017), positive associations are found between (1) firms with financially stressed and high audit fees (Basioudis et al., 2008; Geiger & Rama, 2003); and (2) firms that disclosed paying bribes and audit fees (Lyon & Maher, 2005).

Lastly, the context of the risks of material misstatement and audit fees is investigated by a number of current studies. For example, Gutierrez et al. (2016) investigate the consequences of changing the auditor's report on audit cost, audit quality and investor's reaction to the new report filing. The sample used in the study of Gutierrez et al. (2016) consists of companies with a premium listing of equity shares on the London Stock Exchange (LSE) main market with fiscal years ending on 30 September 2013 or starting on 1 October, 2012. In their study, the audit cost and audit quality before and after the adoption of the new audit requirements on 30 September 2013 are compared. Additionally, audit cost is used as proxy for audit fees while audit quality is represented by discretionary accruals. The findings of their study indicate that the new audit requirements regarding the disclosures of important risks of material misstatement and the scope of the audit increase audit fees by up to 7% while they do not increase audit quality. In addition, the length of the auditor's report and the number of significant risks reported by the auditor are positively correlated with the amount of audit fees, while materiality amount is negatively correlated with audit quality (Gutierrez et al., 2016).

While the findings of their study are significant to the U.K. policy makers, it is affected by an important limitation which calls for an additional investigation. The sample of U.S. firms is used as a control group in comparing changes to audit fees. As noted above, the U.K. and the U.S. have different litigation environments with the latter being more litigious. As more audit requirements increase the level of auditor responsibility, audit costs may be expected to increase more in the U.S. compared to the U.K. Hence, a U.S. sample does not provide a good control group for U.K. firms with regard to changes in audit cost. This research, however, argues that audit fees increase not only because of the new auditing standard, but also increase in firms with higher levels of RMM. In another study based on U.K. firms, Carcello and Li (2013) investigate the effect of auditor's reporting model regulatory change on audit fees. Relying on data collected from DataStream, they provide archival evidence that audit fees significantly increase by approximately 13% after partners have to sign their names to the auditor's report. This study considers whether other changes (RMM) occurred in the U.K. would increase audit fees.

In Brazilia context, Ferreira (2018) analyses the association between the number of KAMs and audit fees. Based on one-year data and OLS and Poisson regressions, Ferreira's study finds a positive correlation between the number of KAMs and audit fees. This finding is consistent with the similar work of Jafari et al. (2019) who survey auditors and argue that such requirements of KAM increase audit fees. In New Zealand context, Li et al. (2018) investigate the impact of audit reporting changes on audit quality and audit fees. They use cross-sectional analysis to regress 121 New Zealand listed firms. In analyzing their results, they split their sample size into two groups. One group is for firms that adopted the new auditing standards, while the second group is for firms that did not adopt the new auditing standard. They find that audit fees increased in adopted firms. Unlike their study, this research uses a large data and

expects that audit fees increase not only because of the new auditing standard, but also increase in firms with higher levels of RMM.

In contrast, several studies do not find any influence of this audit reporting changes on audit fees. In France, for example, Bédard et al. (2014) provide similar results when presenting the effects of the justification of assessments (JOA) on audit fees. That is, the disclosure of additional information by French auditors does not increase audit fees. However, their small sample size may raise a concern. This study, therefore, adopts a larger sample size with financial and non-financial firms in examining whether the new auditor's report requirements in relation to RMM increase audit fees.

Further, Bradbury and Almulla (2018) who adopt New Zealand data examine the first-year effects of KAM disclosures on audit fees. Utilizing a sample of 132 New Zealand public interest entities, they find the disclosure of KAMs does not incrementally affect audit fees. Again, their study uses a small sample size which may threaten the analysis. In addition, Lennox et al. (2015) find that the risks that are disclosed by auditors in the expanded auditor's reports in the U.K. have no effect on audit fees.

In Australia, Pries and Scott (2018) study the costs of adopting the key audit matter reporting focusing on smaller public Australian entities over the period 2016 to 2017. Collecting data on listed entities with a market capitalization of less than AUD\$10 million, they find that the new auditing standard in relation to KAMs in Australia does not increase audit fees. While their study contributes to the existing literature on audit reporting changes in many aspects, it has an important limitation. That is, their data may have a left skewed distribution. This is because 47.2 percent of sample firms report only one KAM. In another Australian study, Wei, Fargher, and Carson (2018) investigate the costs of the enhanced auditor's report. They find that implementation of the extended auditor's report is not associated with an increase in audit fees.

Furthermore, Liao et al. (2019) investigate the consequences of adopting the expanded auditor's report in Hong Kong. They argue that there would be indirect consequences of such new report in audit fees. According to them, audit fees would increase because auditors in the expanded auditor's report may provide disclosures on company risks, and how auditors communicate and negotiate with audit committees about audit issues. Based on data from a sample of 1,245 Hong Kong companies over the period 2015–2016 and after using cross sectional analyses, they find no evidence that the new requirements increase audit fees.

In Germany, Boolaky and Quick (2016) on their part examine the effect of the expanded auditor's report requirement by IAASB (specifically disclosures of assurance level, materiality level, and key audit matters) on bank directors' perceptions of the quality of the audit, auditor reports, and financial statements. The authors survey 105 bank directors drawn from universal banks in Germany and find that disclosure of assurance level in auditor's report has a significant positive relationship with perceptions of audit quality. In contrast, their study does not find any significant effect of disclosing materiality level and KAMs on perception of audit quality. However, a significant relationship is observed between assurance and materiality level on one hand, and bank loan decisions on the other hand. In particular, the effect of assurance level disclosure is diminished by materiality level disclosure. The above discussions provide mixed findings. Despite these mixed findings, this research holds the argument that audit fees are likely to increase in firms with higher levels of risks of material misstatement.

2.3.2 Non-audit fees and risks of material misstatement

However, Some corporate accounting scandal linked to the professional misconduct of the auditors (Alabede, 2012), and numerous cases of corporate scandal (some of which are linked to the negligence or involvement of the auditors) have eroded public confidence in financial statements (Percy, 1997; Pflugrath, Martinov-Bennie, & Chen, 2007; Sikka, 2009).

Consequently, the role of auditors in eliminating agency conflict is being doubted. The accounting professionals and accounting setting such as Public Company Accounting Oversight Board (PCAOB) have come under increased scrutiny over recent years about the growing number of activities received and/ or given from audit clients and/ or audit firms and the possible negative impact of such activities on auditor independence (Basioudis et al., 2008), where reducing auditor independence is fundamental because it also can impact negatively on audit quality (Tepalagul & Lin, 2015).

One of the activities that audit firms provide which could place auditor independence at risk is non-audit service (Harris, 2014). Threat(s) to auditor independence is recognized by the U.S. House of Representatives and Securities and Exchange Commission. Securities and Exchange Commission (SEC) prohibits an auditor from providing most non-audit services to an audit client (SEC, 2000). This law is created due to the concern that the auditor independence might decrease when auditors provide most non-audit services to an audit client (Tepalagul & Lin, 2015). This concern is raised earlier by Wines (1994) who questions whether there is the potential for an appearance of auditor independence impairment when auditors receive higher levels of management advisory services from audit clients. He finds a negative and significant association between the higher proportion of non-audit services and companies that are not receiving an audit qualification of any type over the period 1980 to 1989. His findings are driven from positive accounting theory conceptualized by Watts and Zimmerman (1986) that auditors are more likely to report any breach discovered during an audit engagement, depending on auditors' independence from their clients. In this respect, Wines (1994) also argues that when clients offer high levels of non-audit services to auditors, this may be a pressure on auditors not to disclose any such breach discovered during an audit engagement. Moreover, when auditors rely more on their clients in terms of economic dependency and

mutuality of interest, they become biased in forming delicate judgment (Carmichael & Swieringa, 1968).

Based on this, it can be expected that the auditors waive their judgment for their clients who offer higher non-audit service fees. In this respect, various authors examine the relationship between the outputs of financial statements and auditor's independence. First, the context of going concern audit report and non-audit services are investigated by a number of studies. For instance, Sharma (2001) and Sharma and Sidhu (2001) investigate the association between audit qualified report and non-audit fees. Analyzing a number of bankrupt companies, they provide evidence of a negative association between audit qualified report and non-audit fees in Australia. In the U.K., a significant negative association between the proportion of non-audit service fees levels and receiving a qualified audit opinion is found in a study (Basioudis et al., 2008). In the U.S, however, no relationship is found between distressed companies with high auditor-provided non-audit fees and going concern modified audit opinion (DeFond, Raghunandan, & Subramanyam, 2002; Geiger & Rama, 2003).

In addition, a number of studies argue that non-audit services reduce auditor's independence. For example, using evidence from a restatement of previously issued financial statements, Bloomfield and Shackman (2008) and Kinney et al. (2004) point out that the occurrence of financial restatements is more likely to take place in firms with higher non-audit service fees. The case of accruals quality in relation to non-audit services is also included. This is because accruals quality could be seen as future cash flows, specifically when managers use discretion to convey their private foresight information on the timings of costs and revenues (Dechow & Dichev, 2002). For example, Srinidhi and Gul (2007) study 9,025 listed firms to draw an association between accruals quality and non-audit service fees. They conclude a significant negative relationship between non-audit services and accruals quality.

The argument in this thesis, based on such theoretical predications and coupled with empirical evidence, is that for firms with lower RMM, more non-audit service fees are paid to the auditors.

2.4 Literature review for Study Three

2.4.1 Short-term impact of accounting disclosures on information asymmetry

This thesis argues that capital market²⁵ would react to the disclosures of risks of material misstatement. This is because, according to the utility theory conceptualized by Bernoulli (1954), people are risk averse when it comes to making decisions that could result in a loss. In addition, Bernoulli argues that people are not entirely rational. People do not make their choices based solely upon which choice has more utility, but upon which choice causes them less loss (Bernoulli, 1954). This theory explains the behaviors of the human investors. Investors are rational and would choose to invest in a firm with high utility since it carries no risk. This suggests that investors would react negatively to firms with high risks since they are “risk averse”. Further, prospect theory, developed by Kahneman and Tversky (1979) is in line with the utility theory in terms of concepts. However, it includes the individuals’ reference points. It argues that people are always risk averse, but when people are faced with bad outcomes, they become “risk seeking” to try receiving a better outcome. This suggests that investors would react negatively to firms with low utility since it carries more risk.

²⁵ To study how the stock market reacts, a number of researchers employ variables of market microstructure (i.e., information asymmetry or stock liquidity), including cumulative abnormal returns, stock price, number of transactions, and the number of shares sold.

In line with the above theories, numerous previous studies provide empirical evidence of market reaction and the problems in financial statements. Problems in the financial statements include going concern audit opinion, restatement and fraud, and weakness in the internal control cases are disclosable under risks of material misstatement paragraphs in the extended auditor's report (IAASB, 2009c). Such risks are obviously targeted for the users of financial statements as shareholders, and debt holders especially when there is, for example, the fear of receiving going concern audit opinion, the incentive to hide fraud, and the weakness in the internal control can increase audit risk. So, how the market reacts to the disclosures of risks of material misstatement is relevant to this thesis. First, the linkage between the disclosures of going concern audit opinion and market behavior is investigated by previous studies. For instance, Chen, Su, and Zhao (2000) find a significantly negative association between modified audit opinions and cumulative abnormal returns in China. Likewise, Taffler, Lu, and Kausar (2004) explore the stock price behavior of firms subsequent to publishing a going-concern modified audit opinion for the first time. After controlling for variables that could explain the market reaction such as post-earnings announcement, they find highly significant continuing adverse price reaction between -24% and -31% over the full 1-year period commencing at the start of the month immediately following the going concern modified publication date.

This is also supported by Ogneva and Subramanyam (2007) who use 1159 going concern audit opinions in the U.S. over the 1993–2004 period and document significant negative abnormal returns following disclosure of first-time going concern. Furthermore, Citron, Taffler, and Uang (2008) observe that firms with significant adverse price reactions received a going-

concern. This suggests that the stock market has an under-reaction response to going concern audit opinion.²⁶

Further, Kausar, Taffler, and Tan (2009) conclude that the U.S. stock market fully responds to going concern withdrawal announcements. In a related study, Kausar, Taffler, and Tan (2006) observe that institutional investors reduce their holdings in firms receiving first-time going concern audit opinion (GCARs). Furthermore, Menon and Williams (2010) argue that disclosures of auditor's report are useful and provide new information to investors. After controlling variables that may explain the market's reaction in the event window such as filing date, they find a negative relationship between the natural log of the market value of equity and cumulative size-adjusted excess return over the three days beginning with the event date, which is the date the GCARs are first announced. They also find that the reaction is more negative if the report cites a problem with obtaining finance. This means negative excess returns when first-time going concern audit reports are disclosed.

In the context of the Spanish market and after using the event study methodology, a negative relationship between audit opinion and stock prices is provided by Martínez, Martínez, and Benau (2004). Using quasi-natural experiment in Canada, Bédard et al. (2015) also provide evidence on the incremental market reaction to a going concern problem report. Lastly, Amin, Krishnan, and Yang (2014) extend this literature by arguing that going concern auditor's report does not only negatively influence the market, but also influences the cost of equity. They

²⁶ As investors are often affected by cognitive and emotional biases, stock markets may have overreaction or under-reaction to new information.

provide evidence that the firm's cost of equity increases between 3.3% and 5.7% in firms that received going concern opinions.

Second, the context of financial statement fraud (FSF), financial restatement announcements, and market reaction are investigated by a number of studies. For instance, Summers and Sweeney (1998) examine the relationship between the presence of fraud and market reaction in the U.S. They use the number of transactions, the number of shares sold, or the dollar amount of shares sold as proxies to measure holdings of company stock. Using Cascaded logit analysis, they present evidence that the levels of selling activity are high in firms with fraud cases. Further to this in the reaction of markets to financial statement fraud, Dechow, Sloan, and Sweeney (1996) detect evidence about the positive relationship between financial statement fraud and cost of equity. In addition, a significant negative influence of fraudulent financial reporting on stock market is found by Davidson, Worrell, and Lee (1994). Furthermore, Palmrose, Richardson, and Scholz (2004) find that the market reacted negatively (more negative returns) after restatements involving fraud were announced from 1995 to 1999. Rezaee (2005) argues that financial statement fraud does not only impact the shares activity, but also all capital markets participants (e.g., investors, creditors, analysts).

In a study related to the influence of financial restatement announcements on markets reaction, Li and Zhang (2006) argue that there are high levels of shares activities when there is financial restatement announcements. This is because financial restatements are associated with a decrease in firm value (Anderson & Yohn, 2002; Palmrose et al., 2004). The study of Li and Zhang (2006) suggests that there is capital market consequence when financial restatements are released. Likewise, Richardson (2003) uses a sample of U.S. traded firms from 1990-1998, and argues about the negative relationship between the magnitude of accruals (investors short sell securities with high accruals).

These arguments are supported by Desai, Krishnamurthy, and Venkataraman (2006) who use event study framework to examine behavior of short sellers around earnings restatements. They conclude that “short sellers accumulate positions in the restating firms in the months leading up to the restatement announcement”. The above studies that examine the relationship between financial restatement announcements on markets reaction are driven from Sloan (1996), who documents a negative impact of higher level of accruals on stock market performance. Lastly, Kale, Noe, and Ramirez (1991) argue that a firm’s business risk is one of the primary determinants of a firm’s capital structure, and that firms with higher business risk have a higher probability of bankruptcy.

Third, the context of company internal control problems and market reaction is examined by previous studies. This is because International Standards on Auditing No. 315 (ISA 315.14) states that auditors are required to assess the quality of publicly traded company internal controls before they plan the audit strategy (IAASB, 2009c). To start with, De Franco, Guan, and Lu (2005) use a sample of 102 U.S. traded firms from November 1, 2003 to December 31, 2004, and use trading data from the NYSE TAQ database. They provide a negative market reaction to reporting of internal control weaknesses. In a related study, it is documented that the market even reacts more negatively when managers disclose that the material weaknesses cannot be fixed by fiscal year-end (Cheng, Ho, & Tian, 2006).

Lastly, Rezaee, Espahbodi, Espahbodi, and Espahbodi (2012) examine the stock price reaction to the internal control reporting by grouping the firms in three groups. One group relates to firms that have delayed reporting on their internal control. The second group relates to firms that have reported ineffective internal control, and those reported effective internal control. After controlling for the general stock price movements, they find that firms with delay in filing their internal control reports, and firms with ineffective internal controls have negative stock

returns. They also find a positive relationship between stock returns and effective internal controls.

Other related studies on the disclosures and information asymmetry in the market for the firm's stock focus on specific disclosures and their short-term-impact. For example, Coller and Yohn (1997) focus on disclosures of management earnings forecasts and its effect in capital market. In particular, they examine the linkage between management earnings forecasts and bid-ask spreads. Using a window of twelve months prior to the forecast and nine-days after the release of the management forecast, they find that forecasting firms increase spreads over the twelve months prior to the forecast. According to them, after the release of the management forecast, spreads are significantly smaller than spreads in the nine days prior to the forecast. Additionally, several studies focus on the disclosures of earnings announcements and its short-term-impact on information asymmetry component in the market. Specifically, these studies find that bid-ask spread increased after earnings announcements due largely to the information asymmetry component of the spread (Demski & Feltham, 1994; Krinsky & Lee, 1996; Lee, Mucklow, & Ready, 1993; McNichols & Trueman, 1994; Patel, 1993; Skinner, 1993).

Lastly, the context of the risks of material misstatement disclosures and the market reaction is investigated by a number of current studies. For example, Christensen et al. (2014) examine whether CAMs paragraph in the auditor's report change nonprofessional investors' decision to invest. Based on data from a sample of 141 graduates of a large public university's business school in the U.S., Christensen et al. (2014) find that investors who receive auditor's report with a CAMs paragraph have a higher likelihood of changing their investment decision than investors who receive the standard report. They also find that the same information in a CAMs paragraph has less effect on investor decision when disclosed through footnotes. In addition, inclusion of the audit procedures performed in relation to the critical audit matters as well as resolution of the CAMs reduces the impact of the CAMs paragraph on investor decision.

However, their study has several important limitations acknowledged by Christensen et al. (2014). First, it does not preface the CAMs paragraph with an introductory paragraph as required by PCAOB. According to the standards of PCAOB, auditors should preface CAMs with a paragraph stating that “PCAOB requires that we communicate in our report critical audit matters relating to the audit of the current period’s financial statements or state that we determined that there are no critical audit matters” (PCAOB, 2017). The introduction should also explain what CAMs are. Second, their study examines the reaction to only one CAM paragraph, while the reactions to different and/or subsequent CAMs paragraphs could be different. In addition to the limitations acknowledged in their study, the study lacks validity as it uses non-experience graduate students as a proxy for nonprofessional investors. According to Elliott, Hodge, Pronk, Jollineau, and Jane (2004) graduate business students require some level of work experience to be good proxies of non professional investors. This makes the findings of their study not fit for generalization to all nonprofessional investors.

This is also consistent with Sirois et al. (2017) who look at the informational value of KAMs and auditor commentaries. Ninety-eight post-graduate accounting students forming the study sample participate in an experiment where they analyze the financial statements of a manufacturing company with one of several versions of auditor’s report. One auditor’s report has KAMs, another has no KAMs, while another has both KAMs and auditor commentary related to the KAMs. After using eye-tracking technology, Sirois et al. (2017) indicate that KAMs increase the attention of auditor’s report users to disclosures that are mentioned in the auditor’s report, but reduce their attention to other parts of financial statements.

In another study that uses graduate business students to examine the effect of CAMs on users’ decision, Elliott et al. (2016) investigate if investors value financial reporting quality beyond estimated fundamental value and whether better auditor’s report that include CAMs and auditor commentary as opposed to CAMs alone can unlock this value. In their study, auditor’s report

with both CAMs and auditor commentary on the quality of a firm's accounting on the CAMs are viewed as being of high quality than auditor's report with CAMs only.

Using a sample of 170 graduate business students in a financial statement analysis course in the U.S., the results of Elliott et al. (2016) study show that investors actually treat common shares as a bundle of public and private goods. Further, auditor's report quality can help investors to better differentiate the financial reporting quality of different firms and thereby pay more accurately for the public good component in common stocks. Elliott et al. (2016) study has two main limitations. First, although it measures the willingness to pay for the public good component in common stock, market behaviors are not observed in their study. In other words, the behavior of the participants in real investing (real sitting) in terms of how they value firms based on audit reporting quality may be different. Second, the participants used in their study are not expert investors and have little real-world experience.

In another experiment study, Kelton et al. (2018) study if the new auditor's report increases the likelihood of investment. They argue that if this auditor's report is associated with valuable information, investors will see managers as more credible. After using 2×2 between-participants design, their results, based on 95 participants from Amazon Mechanical Turk, show that investors provide higher assessments of management credibility with the extended auditor's report. Using the context of Australia, Prasad and Chand (2017) say that users of financial statements find the changes to the auditor's report significant and provide informational value. Prasad and Chand's study came to this finding after using the coding method of comment letters that are written in response to the IAASB.

Additionally, Reid et al. (2015) examine whether auditor and audit committee reporting changes are useful to investors. They use the two-day window to examine if abnormal bid-ask spreads differ around the event of the disclosing risks of material misstatement in the extended auditor's report. After using a sample of 291 firms with a premium listing of equity shares on

the London Stock Exchange, they find that auditor disclosures are positively associated with abnormal trading volume. Moreover, firms that had weak information transparency and those that employed auditors that tend to provide less detailed auditor's report experienced more abnormal trading volume. However, U.S. firms are used in their study as control group in ruling out the possibility of abnormal trading volume in the U.K. firms stocks being as a result of global events. This is an important limitation because the two countries have major differences in terms of the role of litigation in the development of regulations, the nature of accounting standards, and the number of regulators. Further, their study does not address the issue of confounding variables that could influence the results of the study. For example, the abnormal trading volume observed could be due to speculative activity on the impact of new information in auditor's report as opposed to actual value of the new information. Consequently, this thesis uses a number of proxies to measure how investors respond to auditor's report.

Furthermore, Cordos and Fülöpa (2015) investigate whether the introduction of key audit matters (KAMs) by IASB will affect investors' decision. After analyzing 47 comment letters received by IASB from organizations and individuals in the EU on the board's exposure draft on introducing KAMs in auditor's report, they indicate that inclusion of KAMs improves the information of value of auditor's report. However, their study has a key shortcoming. The majority of respondents are preparers of financial statements and auditor's report, representative bodies of preparers of financial statements and auditor's report, standard setters, regulators, and accounting firms from EU. Accordingly, comment letters on KAMs do not necessarily represent the views of investors who are the main target of the changes.

In a similar vein, Gutierrez et al. (2016) expect a negative observe market reaction around the release of the extended auditor's report. In particular, they study abnormal returns surrounding the date of the public distribution of the annual report (i.e., report filing date) and the sum of three-day abnormal trading volume. They find that three-day abnormal volume is positively

associated with auditor's disclosures of RMM. This suggests that the extended auditor's report contains relevant information. In negative consequences of auditor's disclosures of KAMs on the market, a working paper by McNamara, McNamara, and Mathews (2018) argues that the disclosures of KAMs will influence abnormal accruals. Based on an event study over the event of five days subsequent to the report announcement, their OLS market model shows that abnormal accruals are reduced by 5% during events. This result recommends that KAMs disclosures provide an economic impact. This is consistent with the similar work of Li et al. (2018) who expect a negative linkage between abnormal accruals and auditor's disclosures in the context of New Zealand setting. Their results indicate that abnormal accruals are significantly lower upon the adoption of the new reporting requirements.

In a study supporting the argument that this new auditing standard provides useful and valuable information and in turn reduces the information gap, Ruhnke, Pronobis, and Michel (2014) investigate if the additional information in the expanded auditor's report changes German banks' executive board members credit decisions. They document that, based on experimental research design, creditors' lending decisions are influenced by levels of materiality threshold disclosed in the auditor's report. This result provides evidence of the information value in the expanded auditor's report.

In another German study supporting the notion that the expanded auditor's report has information value, Porumb, Karaibrahimoglu, Lobo, Hooghiemstra, and De Waard (2018) study whether the disclosures of risks of material misstatement influence private debt market. Specifically, they examine whether the new disclosure is associated with more favorable price and non-price loan contracting terms. Therewithal, and similar to this study, they hand-collect the information of disclosures in the expanded auditor's report by obtaining the number of words in the material risk statement. Using a sample of 204 U.K. listed firms and after controlling for firm performance using ROA, firm size, growth opportunities, potential agency

costs and financial strength using leverage, they find that the disclosure of risks of material misstatement are associated with more favorable loan contracting terms. This suggests that information asymmetry between auditors and loaners is reduced with the expanded auditor's report. However, Boolaky and Quick (2016) find no link between information disclosed in the expanded auditor's report and credit lending conditions.

A number of studies do not support this argument that auditor's disclosures reduce information asymmetry component in the market. For example, Cade and Hodge (2014) look into the effect of expanding the auditor's report on managers' communication openness. In their study, a sample of 83 individuals who have completed a non-accounting graduate or undergraduate degree at Cornell University in the U.S. is used, 65% of the sample of which was male. In addition, the participants were between 40-49 years and with 13 to 16 years of professional experience. They find that requiring auditors to provide more information in their report makes managers less willing to share information on accounting estimates with their auditors. This means that the disclosures on audit procedures in auditor's report have a low impact on managers' willingness to share information with their auditors, particularly where managers trust their auditor.

However, Cade and Hodge's (2014) study is based on an experiment research design involving simulation of manager-auditor relationships that does not account for some complexities involved in real-world manager-auditor relationships. For example, the experiment discounts the fact that auditor competence can affect managers' communication openness with their auditors by allowing one group of participants to assume a person they trust is their auditor regardless of their audit qualifications (Cade & Hodge, 2014).

In a similar issue, Gravina (2014) seeks stakeholders' perspectives on the new auditing standard issued by PCAOB. The author includes in his study Release No. 2013-005 that

requires auditors to raise CAMs during the audit process. The sample of Gravina's (2014) study is made up of 51 comment letters on Release No. 2013-005. He indicates that the professional bodies including accounting firms and CPAs find inclusion of CAMs in auditor's report does not increase the information value of the reports. Instead, they will add implementation cost to auditors which is likely to increase audit fees and create confusion for the users of auditor's report (Gravina, 2014).

In another experiment western study, Köhler, Ratzinger-Sakel, and Theis (2016) attempt to investigate the effect of KAMs on the communicative value of the extended auditor's report by conducting an online pioneer experiment with a final sample of 52 observations. In their study, they provide non professional investors with a positive KAMs paragraph and with a negative KAMs paragraph and argue that these different paragraphs have different levels of trust, i.e., the credibility of financial statements. Their results show insignificant differences in the communicative value of the two paragraphs suggesting that participants find no communicative value in KAMs paragraph. However, their study has fundamental limitations. First, it is based on experimental research design with a very small sample. Second, they provide participants with only one wording of the auditor's report as well as very small paragraphs of negative and positive KAMs. In the context of Germany, Asbahr and Ruhnke (2017) examine if the new auditor's report will influence auditor's judgment in relation to the reasonableness of a biased accounting estimate. In doing so, they use 2x2 between-subject design. One hundred and twenty-two participants were given auditor's report with KAM vs. no reporting of KAM. They find that no effects of KAMs disclosure on the auditor's judgment of accounting estimates.

In another study with a focus on the impact of critical audit matters on the market, Bédard et al. (2014) investigate the costs and benefits of reporting CAMs using the context of France. Based on data from a sample of 101 firms listed in the Euronext Paris Stock Exchange with the largest market capitalizations, they contend that the new auditing standard in France does not

improve the information content of auditor's report for investors because the market did not record abnormal returns following the introduction of this new auditing standard.

In addition, Gutierrez et al. (2017) find no evidence that the regulatory change affects investors' reaction to the release of auditor's report after using a short-window test. In another short-term impact study, Lennox et al. (2017) examine the effect of the risks assessment disclosures on investors using a short-window market reaction. They find no cumulative abnormal returns around the filing date. Their study demonstrates that investors do not find the auditor's discourse in the extended auditor's report incrementally informative.

In general, the above studies provide evidence about the influence of the information asymmetry cost on the market behavior using short-term impact. Based on these studies, it is expected that (in short-term impact) there is a negative association between market behavior and the disclosures of risks of material misstatements. This is also because (1) the risks of material misstatement could be due to fraud, or error, and/or both, (2) going concern and liquidity issues including loss of significant customers may indicate risks of material misstatement (IAASB, 2009c), (3) going concern audit opinions and fraud as pervasive inherent risks that affect all areas of the audit (IAASB, 2009g), and (4) numerous studies argue that auditor risk assessment including audit planning judgments, and audit effort can be also influenced by going-concern and fraud risk (Blay et al., 2007). Contrary to the foregoing studies, this thesis conducts an investigation on the influence of the disclosures of risks of material misstatement in the extended auditor's report on information asymmetry component in the market using a long-term impact.

2.4.2 Long-term impact of accounting disclosures on information asymmetry

In any securities market,²⁷ some traders called “informed traders” could obtain inside (private) information about firm-specific events that may affect security prices, while other investors do not have such information. This can lead to information asymmetry between the informed and the uninformed traders. As a result of this information asymmetry, the trading behavior of both the uninformed and the informed traders is likely to change (Venkatesh & Chiang, 1986). This is observed by a number of the studies that as information asymmetry increases, the quoted depths decline (Heflin, Shaw, & Wild, 2005; Kavajecz, 1999; Lee, Mucklow, & Ready, 1993).

To address this issue, regulators require firms to provide more relevant information to the public, aiming to decrease information asymmetry. The regulatory issuance mainly came after several theoretical studies argue that greater public financial disclosures have the potential of reducing information asymmetry (Gonedes, 1980; Greenstein & Sami, 1994; Verrecchia, 1982). Lev (1988) asserts that once information asymmetry among investors is reduced, the stock market would become thicker with lower transaction costs as reflected in the bid-ask spread and greater liquidity of securities. A number of studies are in line with this theory and attempt to examine the impact of information asymmetry on stock liquidity.²⁸ For example, Copeland and Galai (1983), Glosten and Milgrom (1985), Jaffe and Winkler (1976), and

²⁷ Following Pettit (1972) and Shroff et al. (2013), this research uses the term of security performance or stock market performance which represents its performance including performance of stock return, stock cost, price impact, and stock speed. For example, a positive abnormal return means a stock overperformed the market, while a negative one indicates that the stock underperformed the market.

²⁸ According to Black (1971), to say the stock market is liquid/thick, the following conditions should hold: (1) bid and ask price should be always there, (2) the difference between the bid and asked prices (the spread) is always small, and (3) investor can buy or sell a large block of stock immediately. Stock immediately represents the trading speed that is how fast the investors can buy or sell any amount of stock almost immediately. Stock immediately can be measured through the stock turnover, number of trades, number of levels, and trading volume (Ali et al., 2017).

Venkatesh and Chiang (1986) find that the bid-ask spread is high in firms with an increased degree of information asymmetry. In addition, Morse and Ushman (1983) find bid-ask spread is higher with large absolute price changes around information announcements days. This is consistent with the similar work of Venkatesh and Chiang (1986) which finds an empirical relationship between the bid-ask spread and non-routine information announcements, and with Hasbrouck (1988) who finds a negative correlation between trades (wider bid-ask spread, and lower-volume stocks) and inventory control behavior (investors possess nonpublic information).

In another study, Leuz and Verrecchia (2000) examine the influence of increased disclosures on the bid-ask spread and trading volume. They use firms employing German reporting standards and firms employing international reporting standards (*IAS* or *U.S. GAAP*). They find that firms employing international reporting standards increase the levels of disclosures and their shares are more liquid (lower bid-ask spread and higher trading volume) than those employing the German reporting standards. This is in line with a study by Bushee, Core, Guay and Hamm (2008) who focus on the influence of the business press on information asymmetry among investors. They find that greater press reduces information asymmetry as bid-ask spreads became lower and greater market depth.

In addition, some studies argue that voluntary disclosures are related to liquidity as well. For example, Bushman and Indjejikian (1995) state that voluntary disclosures increase market depth (more liquid stocks - higher share and lower size of trading). This is in line with a study of Balakrishnan et al. (2014) who examine the effect of disclosures on liquidity, namely, bid-ask spreads. They find the amount of information firms disclose has a negative link with bid-ask spreads suggesting that disclosures influence stock liquidity. This is in consonance with the similar work of Shroff et al. (2013) who find firms that are preoffering disclosures are associated with a decrease in information asymmetry and a reduction in the cost of raising

equity capital. This is also consistent with the similar current study of Schoenfeld (2017) who finds that firms increase voluntary disclosures when they join the S&P 500 index, and this increase in disclosures is associated with increased stock liquidity.

Other related studies on the disclosures and market microstructure focus on specific disclosures and their long-term impact on decreasing the information asymmetry. For example, Greenstein and Sami (1994) focus on the segment disclosures. In particular, they examine the impact of the SEC's segment disclosure on bid-ask spreads. After using a random sample of firms listed on the NYSE as of fiscal year end 1970, they provide evidence that the bid-ask spread is lower in firms that reported disclosure of segmental information. This is in line with Boone (1998) who focuses on disclosures of the valuation of oil and gas reserves. He provides a negative association between disclosure of the discounted present value of oil and gas reserves and the bid-ask spreads. This is also consistent with Sabet and Heaney (2015) who use oil and gas firms over the period 1993 to 2011 and find the bid-ask spread is lower after the disclosure of an acquisition of reserves. The above findings show that regulatory acts that require more valued information to be publicly provided should directly affect the size of the bid-ask spread.

Other earlier related empirical studies on the disclosures and information asymmetry in the market for the firm's stock focus on disclosure policy and its long-term impact. For example, Welker (1995) argues about the relation between disclosure policy and liquidity in equity markets. Similar to the thesis, he uses OLS estimation as well as two-stage least squares (2SLS) to examine the relation between firm disclosure policies and bid-ask spreads. Using a sample of 427 firms in different industries and after controlling for return volatility trading volume and share price, he finds that negative relation between disclosure policy and bid-ask spreads. Welker's (1995) results recommend that accounting disclosures reduce information asymmetry and in turn increase liquidity in equity markets.

Similarly, Healy, Hutton, and Palepu (1999) argue that the capital market will benefit from expanded disclosure. Based on a sample of 595 over the period 1978 to 1991, their multivariate analysis shows that expanded disclosure is associated with increases in stock performance. This is in conjunction with Heflin et al. (2005) who investigate the relation between disclosure policy and market liquidity. After estimating an ordinary least squares (OLS) regression, two-stage least squares, and checking for endogeneity bias, they find a negative link between effective spreads (unconditional on either order size or depth quote) and disclosure policy ratings. They also find that quoted depths and disclosure policy ratings are inversely related.

The content of mandated cash flow disclosures is related to liquidity as well. For example, Frino and Jones (2005) examine if the regulation change²⁹ influences information asymmetry across market participants. More specifically, they argue that investors gain more information about estimates of operating cash flow (OCF) with this new accounting standard and this should decrease information asymmetry. They regress 161 firms listed on the Australian Stock Exchange (ASX) and use a method of a single time series. They find that the disclosures of operating cash flow are associated with a decline in bid-ask spreads.

Many studies examine the role of corporate governance in reducing the information asymmetry in the market Furthermore. This is because (1) “*Corporate governance is a key element in*

²⁹ Australian Accounting Standards Board (AASB) is an Australian Government agency that develops and maintains financial reporting standards applicable to entities in the private and public sectors of the Australian economy. In 1991, AASB issued Australian Accounting Standard that is *AASB 1026*. This Standard requires Australian firms to include a statement of cash flows in financial reports. This statement should disclose information about all major classes of operating, financing and investing cash flows including disclosure of cash inflows and outflow for the financial year (para 4.3), detailed disclosure of reconciliation of cash flows (para 6.2), and disclosure of the policy adopted for determining which items are classified as cash in the statement of cash flows (para 12.1 a).

improving economic efficiency and growth as well as enhancing investor confidence” John Price, Commissioner of ASIC³⁰, and (2) corporate governance is a key element in improving operational transparency, hence provides investors with the information concerning a company’s financial performance.

For example, Bacidore and Sofianos (2002) and Chung (2006) argue that countries which employ stronger investor protection with higher-quality corporate governance have a role in making the stock market more liquid. This is supported by Brockman and Chung (2003) who state that due to the quality of corporate governance, the bid-ask spread is lower with greater price impact (greater market depths) in New York Stock Exchange (NYSE) listed companies than those based in China. Using a sample from the Australian market, Ali et al. (2017) argue that better governed firms are associated with better stock liquidity. After using pooled ordinary least squares (OLS) to run a large sample of 1207 firms from 2001 to 2013, they find a significant positive linkage between corporate governance and stock liquidity. Specifically, they find that as the information disclosures increase (by counting the number of documents), there is a lower trading cost, a higher liquidity ratio, and a higher trading speed.

In another recent study, Prommin et al. (2014) study the effect of corporate governance on stock liquidity in Thailand. Using a sample of 100 firms listed on the Stock Exchange of Thailand, they show that when governance quality improves, liquidity ratio significantly rises

³⁰ One of responsibilities of ASIC is to (1) promote confident and informed participation by investors and consumers in the financial system and (2) make information about companies and other bodies available to the public as soon as practicable. For more information see the article on “The directors role in corporate governance”, February 2014, available from <https://asic.gov.au>

by 26%. This is consistent with a number of current studies that use data from non-western counter including Malaysia, China, and Russia and provide the same results about the positive influence of corporate governance on stock liquidity (e.g., Foo & Zain, 2010; Lei, Lin, & Wei, 2013; Li, Chen, & French, 2012).

In addition, some studies argue that not only external corporate governance can affect liquidity but also the internal corporate governance. For example, Attig, Fong, Gadhoun, and Lang (2006) use firms traded in Toronto Stock Exchange (TSX) and find poor stock liquidity (wider bid-ask spread) in firms with greater deviations between ultimate control and ownership. Similarly, Chung, Elder, and Kim (2010) investigate how internal corporate governance affects the stock market. After using an index based on internal corporate governance, their OLS regression indicates that firms with better governance standards have narrower bid-ask spread, smaller price impact of trades, and lower probability of information -based trading. These results are also consistent with previous studies that find large investors will improve monitoring role over the firm's internal control which in turn increases stock market liquidity (Bhide, 1999; Coffee, 1991; Maug, 1998).

Lastly, trading volume is used by a number of studies as a proxy to measure stock market liquidity. It is shown to be associated with information asymmetry. The argument behind this variable is that an uninformed investor is not willing to trade the shares if he/she believes new information exists which he/she does not have access to. In other words, if the volume of trading in a stock is very low, then we expect a large number of investors would see the stocks as unfair. Hence, we will not be surprised to find a large change in price (low stock liquidity). In fact, Merton (1987) states that uninformed investors may not trade at all once they expect that information asymmetry became larger. Hasbrouck (1988) examines the link between trades and information asymmetry. He provides strong evidence that large trades are linked with more information.

This is supported by Bartov and Bodnar (1996), Glosten and Milgrom (1985), and Karpoff (1986) who examine the link between trading volume and information asymmetry. They find that shares with a high trading volume have a low level of information asymmetry. Similarly, Chae (2005) finds that trading volume increased after the announcement of timing information as a result of information asymmetry. This is also argued by the study of Yoon, Zo, and Ciganek (2011) who indicate that when information asymmetry decreases, selling and buying tends to increase resulting in an increase in trading volume.

Overall, the above studies provide evidence about the negative relationship between accounting disclosures and the information asymmetry across market participants. Based on the above discussion, this research expects that the disclosures of risks of material misstatement in the extended auditor's report reduce information asymmetry in the market for the firm's stock.

2.5 Chapter summary and conclusion

This chapter has provided a review of relevant literature of the three studies that this thesis aims to conduct. This includes studies on (1) corporate governance including ownership, audit and nomination committees; (2) audit process including audit risk, audit planning, audit materiality, and total audit fees; and (3) accounting disclosures and their effect on the capital market information asymmetry.

As previously stated, Study One aims to examine the influence of corporate governance mechanisms and firm characteristics on the disclosures of risks of material misstatement and audit materiality. Many studies on corporate governance mechanisms argue that mechanisms of corporate governance, in particular, board structure, audit and nomination committees, and ownership play an important role in monitoring the behavior of the managers as managers may not always serve the interest of shareholders. They demonstrate that when the managers' behavior is controlled via corporate mechanisms, the value of the firm would increase. In a

nutshell, they find (1) a positive relationship between managerial ownership and corporate performance; (2) a positive relationship between board structure and financial performance; (3) a negative relationship between audit committee and fraud; and (4) a positive relationship between firm corporate governance and information environments (disclosures). Although a few studies investigate the linkage between corporate governance and audit process, no study has been conducted to establish the determinants of the key factors that influence the levels of auditor's disclosures in the extended auditor's report and the levels of audit materiality.

As mentioned earlier, Study Two aims to study the linkage between auditor's disclosures of the risks of material misstatement and audit and non-audit services fees. Hence, section three of this chapter has discussed previous studies that provide empirical evidence of the association between audit and non-audit services fees and audit reporting changes. Specifically, Subsection 2.3.1 has provided a discussion on expectation that audit fees increase in firms with higher number of RMM. In this section, many studies find that (1) audit fees increase in firms with weak corporate governance; (2) audit fees increase in firms with going concern auditor's report; (3) audit fees increase in firms with fraud cases; and (4) a positive relationship exists between audit fees and clients' business risk. Most of the literature on the context of the risks of material misstatement disclosures and audit fees argue that audit fees are likely to increase in firms that adopt the new auditing report. This is expected because with the new auditing standard, auditors are required to increase the effort which in turn increases the fees. However, my thesis, through this study, attempts to bring incremental contribution to the literature by filling the gap that audit fees increase not only because of the new auditing standard, but also with the higher number of RMM.

With regards to non-audit service fees, Section 2.3.2 has presented a review of the literature on the linkage between non-audit service fees and auditor independence. Previous studies argue that non-audit service fees put auditor independence at risk. As a result of reducing auditor

independence, auditors waive their judgment, going concern audit report, restatement of financial statements, and accruals quality cases occur. However, no study has been done to investigate the relationship between the risks of material misstatement in the extended auditor's report and non-audit service fees. Hence, this thesis, through this study, seeks to help fill this major gap in the previous studies by including non-audit service fees into the context of the risks of material misstatement.

This chapter has also reviewed relevant literature on accounting disclosures because Study Three aims to establish a relationship between auditor's disclosures of the risks of material misstatement in the extended auditor's report and the information asymmetry in the market for the firm's stock. To do so, Section 2.4 separates the discussion on relevant literature into two parts.

Subsection 2.4.1 has discussed previous studies that provide empirical evidence of the short-term impact of accounting disclosures on market behavior. The utility theory states that people are risk-averse. Therefore, many previous studies argue that the cost of capital will increase as a result of investors acting negatively to accounting disclosures. A positive link is found between going concern audit opinions and cumulative abnormal returns, and a positive link is found between fraud, restatement disclosures, and market reaction.

Subsection 2.4.2 has discussed previous studies that provide empirical evidence of the long-term impact of accounting disclosures on the information asymmetry in the market for the firm's stock. Previous studies argue that increasing accounting disclosures will balance the level of information received by uninformed and informed investors. This would decrease information asymmetry and make the stock more liquid. Hence, many studies find (1) disclosures increase market depth; (2) a negative relationship between disclosures and information asymmetry in the market for the firm's stock proxied by bid-ask spread; and (3)

mandated cash flow disclosures decline bid-ask spread. Although many previous studies investigate the linkage between accounting disclosures and stock market behavior, an important gap in the extant literature is that no study has been conducted to establish the long-term impact of auditor's disclosures of the risks of material misstatement in the extended auditor's report on six proxies of information asymmetry across the market participants. This study aims to fill these gaps in the literature.

CHAPTER 3: THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter uses the related theories in literature in order to develop the testable hypotheses of the study. This chapter is divided into four sections. The first section explains the role of agency theory and resource dependence theory on addressing the problems that arise between the managers and shareholders. These theories explain how reducing such problems influence a firm's internal control, hence audit procedures and fees. This section also uses dependency theory in explaining the linkage between non-audit services and the risks of material misstatement.

The second section deals with the hypotheses development related to the determinants of auditor's disclosures in relation to the risks of material misstatement and audit materiality in the extended auditor's report focusing on (1) firm internal and external governance including board structure, audit and nomination committees structure, and (2) firm characteristics including firm size, profitability, firm growth, the structure of asset, leverage, complexity, internal ownership, and external ownership.

The third section of this chapter deals with the hypotheses development related to how audit and auditee firms respond to the risks of material misstatement. This includes hypotheses development related to audit fees, and non-audit services fees. The fourth section deals with the hypothesis related to how investors in the U.K. stock market react to the disclosures of risks of material misstatement. This includes hypothesis development related to trading cost (bid-ask spread), price impact of trades (liquidity ratio), and trading speed (stock turnover, number of trades, level of trade, and trading volume).

3.2 Theoretical framework

In accounting research, one of the main theories concerned with explaining the relationship between shareholders and manager of a corporation is agency theory (Jensen & Meckling, 1976). Jensen and Meckling (1976) describe agency theory as a means of aligning interests of the owners to those of the managers. The manager of a corporation is expected to maximize the wealth of shareholders. However, according to agency theory, the agent has an interest that conflicts that of the principal, and it is difficult for the principal to monitor the behavior and actions of the agent (Jensen & Meckling, 1976). In addition, the managers may allege a higher and positive evaluation of their company for their own interest (Gay & Simnett, 2015). This problem increases when there is, for example, information asymmetry. According to Armstrong et al. (2012), incomplete and asymmetric information between the principal and the agent have been identified as the main source of agency problems. Karamanou and Vafeas (2005) argue that even poor disclosures can mislead shareholders and affect their wealth.

In order to reduce information asymmetry, and thereby agency costs, and to reduce self-interested and opportunistic managerial behavior, agency theory suggests monitoring services (Adams, 1994). The principal can establish mechanisms to limit divergences from the principal's interest. These mechanisms include providing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities of the agent. (Jensen & Meckling 1976). Such monitoring is believed to solve problems that arise due to information asymmetry between the agent and the principal.

Corporate governance serves as a monitoring mechanism over opportunistic managerial behavior (e.g., Armstrong et al., 2012; Manne, 1965; Williamson, 1983) to enhance stakeholder value (Cohen et al., 2002). These corporate governance monitoring mechanisms include the board of directors with audit and nomination committees and ownership structure. The board of directors is one of the many elements of corporate governance (Baysinger & Butler, 1985).

According to Fama and Jensen (1983) and Healy and Palepu (2001), a firm board of directors is a mechanism for reducing agency problems. This is because when the board has independent directors, brings available resources and expertise, has the power to hire high-quality audit and nomination committees to the firm (Agrawal & Chadha, 2005), has the power to hire high-quality external auditors to perform a high-quality audit to the firm (Fan & Wong, 2002), it is more likely that such board has an effective monitoring role over management. This thesis, therefore, argues that if the board of directors monitors opportunistic managerial behavior, it is then expected that a firm's internal control operates more effectively, which in turn makes auditors assess control risk as less than high. Hence, auditors extend tests of controls as recommends by the auditing standards (SAS 5; ISA 330.9).

With regards to the ownership structure, a number of studies view ownership as another monitoring mechanism over managerial behavior (e.g., Ali et al., 2017; Ang, Cole, & Lin, 2000; Jensen, 1986; karamanou & vafeas, 2005; Panunzi & Burkart, 2006; Shleifer & Vishny, 1997). Hence, it is expected that in firms with higher ownership concentration, the agency costs are negatively influenced. A study by Ang et al. (2000) show a negative relationship between ownership concentration and agency costs. They find that in companies where the managers are the primary shareholders, the managers have lower incentives to consume perquisites. In addition, Siregar, Sembel, and Maulana (2015) argue that higher ownership concentration in business, the higher the incentive to control the actions of the agents, hence reducing the agency costs. If ownership concentration minimizes the agency costs, it can be argued that audit risk is assessed as less than high, which in turn auditors increase the tests of controls.

Therefore, the current study seeks to use agency theory and hypothesizes that corporate governance influences auditor's disclosures of risks of material misstatement by controlling agency costs that arises from the agency conflict between shareholders and managers. From theoretical perspective, if a firm has an effective monitoring system via corporate governance

mechanisms that oblige the management to operate in the interest of the shareholders, it is more likely that a firm's information asymmetry is reduced, and the effectiveness of a firm's internal control is improved. If this is the case, auditors are expected to assess audit risk as less than high. At such assessment, auditors should extend the efforts, hence the disclosures of RMM to support this assessment (IAASB, 2009a). The above mechanisms of corporate governance will be investigated in this research.

In the audit planning process, auditors must gain an understanding of the entity and its environment (IAASB, 2009c). As indicated by International Standards on Auditing No. 315 (ISA 315.12), part of this understanding is that auditors evaluate the internal controls relevant to the audit (IAASB, 2009c). Understanding the entity and its environment is very important to auditors because it helps auditors to identify practices and assess risks that may have a significant effect on the financial reports (Gay & Simnett, 2015). In making the judgment on areas of significant risk, auditors utilize a variety of theories, including resource dependence theory, which operates through an organization's governance structures. Resource dependence theory argues that organizations need both resources from the environment and information about the environment to be able to improve their decision-making processes and to survive (Pfeffer & Salancik, 2003). This theory, therefore, shows how the external resources and the information about its external information affect the behavior of the company. In other words, these resources reduce businesses survival risks. This is because lacking complete information about the environment or depending on other organizations for resources makes an organization dependent on other entities for survival (Sheppard, 1995). Pfeffer and Salancik (2003) state that in striving for greater autonomy, organizations will engage in actions that limit the degree of dependence on outside entities, which confers power on them, which in turn affects their behavior. According to Pfeffer and Salancik (2003), one of the actions to limit the degree of dependence on outside entities is to have an effective board of directors as such board

can link the organization with sources of external resources (Hillman, Withers, & Collins, 2009).

Sheppard (1995) explains the relationship between the resource dependence theory and organizational failure. He argues that director interlocks is a resource in that the connections of the director help attract resources to the company. For example, having a board member who is also a board member in a bank will help the company gain financial support from the bank. In effect, the resource dependent board having connections to critical stakeholders of the company helps the company secure the support of these coalitions of stakeholders by utilizing the board members' positions to influence the stakeholders. In contrast, if the board of directors lacks influence on key stakeholders, such as banks, suppliers, unions, and shareholders, support will be lost, leading to bankruptcy.

In addition, Hillman and Dalziel (2003) examine the roles of the board of directors in relation to firm performance. They combine resource dependence theory with agency theory in the evaluation of the board roles. According to them, both board resource abilities and incentives to monitor have moderating influences on each other. They argue that the board of directors who has the expertise and connections to key outside stakeholders will be more willing to bring their resources to bear if they hold a stake in the company. They also argue that the board of directors with relevant experience and expertise may be better at both providing resources and monitoring. Last, Cohen, Krishnamoorthy, and Wright (2007) use resource dependence theory in exploring how the resource dependence role of a company's board influence auditors' risk assessment and scope of the audit. Specifically, they find that for clients with weak resource dependence role, auditor's assessment of control risk is "high" rather "less than high".

Therefore, from the theory of resource dependence perspective, if a firm has an effective board of directors which is associated with, for example, legitimacy, and advice and counsel, and can

link to other organizations (Hillman & Dalziel, 2003), it is more likely for the company to survive and less likelihood of a firm facing going concern problems. As such, auditors are expected to assess audit risks as less than high resulting in auditor's extent tests of controls and disclosures.

As previously discussed, from agency theory perspective, managers' actions may not serve the interests of shareholders when a firm's ownership and control are separated (Jensen & Meckling, 1976). Such separation increases conflicts of interests between managers and shareholders leading towards poor firm performance (Miller & Friesen, 1977). Management may have an incentive to present biased information in financial reports for their own agenda (Gay & Simnet, 2015). The principal, however, can limit the self-interest and opportunistic behavior by the agent incurring monitoring costs (Jensen & Meckling, 1976).

The audit procedures and audit fees charged by auditors are integral to monitoring costs (Nikkinen & Sahlström, 2004). This is because the audit function exists to add to the credibility of financial statements and hence eliminate erroneous decision making by users of financial statements (Ye & Simunic, 2013). This audit function includes identifying business risks, advising on weaknesses of internal control, and reporting irregularities (IAASB, 2009c). In other words, auditors reinforce confidence and trust in financial reports by verifying and providing a reasonable level of assurance through the issue of a positive expression of financial statements prepared by management (Gay & Simnet, 2015). Nikkinen and Sahlström (2004) examine whether agency theory provides a general framework for audit fees. They find that audit fees are actually determined by agency theory. Based on agency theory perspective, it can be expected that auditors will decrease reliance on a firm's internal control if a firm has a greater agency problem. This thesis seeks to use agency theory to identify whether the risks of material misstatement in the extended auditor's report has an effect on audit fees.

In order to explain the relationship between non-audit service fees and risks of material misstatement in the extended auditor's report from a theory perspective, this thesis adopts the dependency theory. This theory explains the linkage between less developed countries and more developed ones. It is based on the view that less developed countries export raw resources to more developed countries. More developed countries, in turn, transform these resources into finished goods and resell them to low-income countries at high prices (Chilcote, 1974). This suggests that more developed countries could gain control over the formulation of economic policy in such poor countries (Ahiakpor, 1985).

Although the dependent theory was proposed in the context of country-level, and economic policy, it is equally applicable to firm-level. Utilizing dependency theory framework, a number of studies view non-audit service fees as a part of economic dependency and mutuality of interest with the agents. This case is more relevant when agents offer higher levels of non-audit services to auditors (Wines, 1994). As such, auditor independence may suffer when auditors rely more on their clients in terms of economic dependency (Carmichael & Swieringa, 1968). Wines (1994) states that non-audit services not only can threaten auditor independence but also can introduce a pressure on the auditors not to report a breach. This thesis attempts to use dependency theory and argues that if non-audit services fees affect auditor's judgment via reduced auditor independence, then it is expected that an auditor is more likely to waive his/her judgment, hence less risks of material misstatement.

3.3 Study One: An examination of the association between the disclosures of risks of material misstatement, materiality level, and firm characteristics: Evidence from the U.K. listed companies

Modern corporations separate owners (principals) from managers (agents). Problems associated with the separation of ownership and control (Jensen & Meckling, 1976) include information asymmetry, where managers have access to private information about the firm's

future prospects but are unwilling to share the information with owners (Botti, Boubaker, Hamrouni, & Solonandrasana, 2014).

These problems mainly come from the fact that managers may not always serve the interest of principals (Jerzemowska, 2006). Specifically, managers may set different goals and divisions than those set by principals, adopt a short-term investment horizon, may override the control of a company for their own interest and provide financial statements that are materially misstated, i.e., the financial statements are not presented fairly in conformity with the applicable financial reporting framework, invest less effort in managing firm resources, choose to invest in risky projects, and choose to provide little information to shareholders which in turn increase information differences between managers and shareholders (Harris & Raviv, 1991; Jensen & Meckling, 1976; Masulis, 1988; Ross, 1973). These problems occur because of conflict of interest between managers and shareholders (agency problem).

Agency theory suggests a number of external and internal mechanisms to resolve problems between the managers and shareholders under corporate governance principles. These mechanisms are related to the use of board of directors including its expertise, independence, meetings, ownership, composition, and size, and related to the use of ownership. It is based on the view that an effective board provides a monitoring role over the managers to ensure that the actions of management are consistent with shareholders' interests which in turn increase the value of the firm (Guest, 2009). In relation to use of ownership, it is based on the point that providing managers with wealth via, for example, owning shares in the firms they run would reduce managerial opportunism and in turn increase the firms' value (Jensen & Meckling, 1976; Mudambi & Nicosia, 1998).

Based on the agency theory, a large number of studies provide results about the role of corporate governance on financial performance of firm, fraud causes, information

environments (disclosures), audit effort and risk. Overall, the studies argue that better governed firms have a strong rule on reducing managerial opportunism, which in turn increases the performance of the firm, reduces the likelihood of committing fraud (control risk is less than high), increases the information (reduce information asymmetry), and reduces audit risk (by increasing the extent of auditor's tests of controls, because the more the auditor relies on the effectiveness of controls, the greater will be the extent of the auditor's tests of controls (ISA 330.9)).

First, empirical studies show the empirical support of the positive relationship between corporate governance mechanisms and firm performance. For instance, Dunn and Sainty (2009) examine the relationship between board of directors' characteristics, and financial performance of firms and provide a positive link between the two variables. Furthermore, McKnight and Weir (2009) study how the director ownership of a company's shares, presence of debt, non-executive directors, audit committees, and institutional ownership influence the performance of the firms. In addition, Belkhir (2009) shows that the board positively affects financial performance in the banking sector, while Klein (1998) finds the proportion of inside directors increases the firm performance.

Second, many researchers examine the association between corporate governance and fraud occurrence in organizations (e.g., Beasley, 1996; Beasley et al., 1999; Law, 2011). These studies establish the connection between feeble corporate governance and financial statement fraud. They find a negative relationship between fraud occurrence and the strength of client corporate governance. However, in spite of the significance of the corporate governance, there lacks sufficient professional guidance concerning which characteristics the auditors need to take into account in the assessment of how strong or weak the corporate governance is during the development of an audit strategy. These studies suggest that corporate governance considerations are a significant component of auditor's risk analyses and disclosures, both for

pre-planning and planning judgments. Specifically, as corporate governance reduces likelihood of committing fraud, auditors should assess control risk as “less than high” and perform more tests of controls to support their assessment in firms with more effective controls.

Prior studies also suggest that strength of corporate governance affects the problems in financial statements of a firm. For example, Dechow, Sloan, et al. (1996) find that management is more likely to engage in earnings manipulation when the appropriate corporate governance is absent. Moreover, active and effective audit committees lead to fewer errors in firms financial statements (McMullen, 1996) while audit committee composition strongly increases the quality of financial statements (Wright, 1996) and decreases client control environment risk (Sharma et al., 2008).

Third, several empirical studies provide evidence on the relation between firm corporate governance and their information environments. For example, it is empirically documented that (1) firms with better corporate governance have lower information asymmetry (Chang, D'Anna, Watson, & Wee, 2008; Cormier, Ledoux, Magnan, & Aerts, 2010; Kanagaretnam, Lobo, & Whalen, 2007), (2) have comprehensive financial disclosures (Chen & Jaggi, 2001), (3) issue voluntary earnings forecasts (Karamanou & Vafeas, 2005), and (4) offer more informative disclosures (Beekes & Brown, 2006; Beekes et al., 2015). In addition, Warfield et al. (1995) provide a positive relation between mechanisms of corporate governance and informativeness of accounting disclosures.

This is in line with Forker (1992) who finds audit committee improves disclosures. In addition, independent directors are also found to increase firm disclosures (Leftwich, Watts, & Zimmerman, 1981). Armstrong et al. (2012) show how the adoption of a new corporate governance principle reduces information asymmetry. Lastly, both mandatory and voluntary disclosures increased in better-governed firms (Aman et al., 2017). These studies suggest that

in better-governed firms, managerial opportunism is controlled. Therefore, managers are more likely to provide favorable and unfavorable events/news, and this gives the investors ability to gain all the information.

Auditors also would benefit from managers providing all the information because auditors need to gain an understanding of the entity and its environment when they plan an audit. International Standards on Auditing No. 315 (ISA 315.A1) states auditors need information to help them with assessing risks of material misstatement of the financial statements, determining materiality in accordance with ISA 320, considering the appropriateness of accounting policies and disclosures, identifying areas that need more and special audit consideration, developing expectations for use, responding to the assessed risks of material misstatement, and evaluating the audit evidence obtained (IAASB, 2009c).

In addition, paragraph 11 of International Standards on Auditing No. 315 (ISA 315.11) states that the information auditors need to understand about the entity includes (1) information related to industry, regulatory, and other external factors including the financial reporting framework, (2) the nature of the entity including its operations; its ownership and governance structures; and the types of investments that the entity is making, (3) the accounting policies that are used by managers, (4) the objectives and strategies and related business risks, and (5) how managers measure and view the financial performance (IAASB, 2009c). This information the auditors need is only the first step in the risk assessment process. However, if managers fail to provide auditors with all the information needed, or when there is a limitation on the evidence-gathering procedures, auditors may express disclaimer of opinion.

If this is the case, then auditors should respond positively to firms with higher quality governance and would influence auditor judgment when conducting an audit of financial statements. Paragraph 11 of International Standards on Auditing No. 200 (ISA 200.11) states

that the objective of an audit of financial statements is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, thereby enabling the auditor to express an *opinion* on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework.

It is argued that favorable auditor's judgment is associated with firm corporate governance. For instance, Sharma et al. (2008) examine the relation between corporate governance and auditor's judgment, and find a link between corporate governance and auditor's judgment.³¹ They find auditors increase reliance on the client internal controls and reduce the extent of substantive tests in firms with stronger corporate governance. Their findings agree with previous studies (e.g., Asare et al., 2001; Abdul Wahab, Zain, & James, 2011; Beaulieu, 2001; Cohen et al., 2002; Johnstone & Bedard, 2001), that client corporate governance is linked to audit effort, auditor's judgment, and audit process. These results suggest that auditor's judgment may always show a positive response to the strength of client corporate governance. Therefore, it is expected that corporate governance factors influence the levels of RMM disclosures and audit materiality.

³¹ Auditors practice their professional judgment in a number of aspects including risks of material misstatement judgment, materiality judgment, and the extent and timing of substantive testing. Auditing Standard No. 13 provides information about auditor's judgment that is related to risks of material misstatement. Paragraph 10 of Auditing Standard No. 11 provides information about auditor's judgment that is related to materiality. Paragraphs 11-14 of Auditing Standard No. 9, provide information about auditor's judgment that is related to audit planning of the extent and timing of substantive testing.

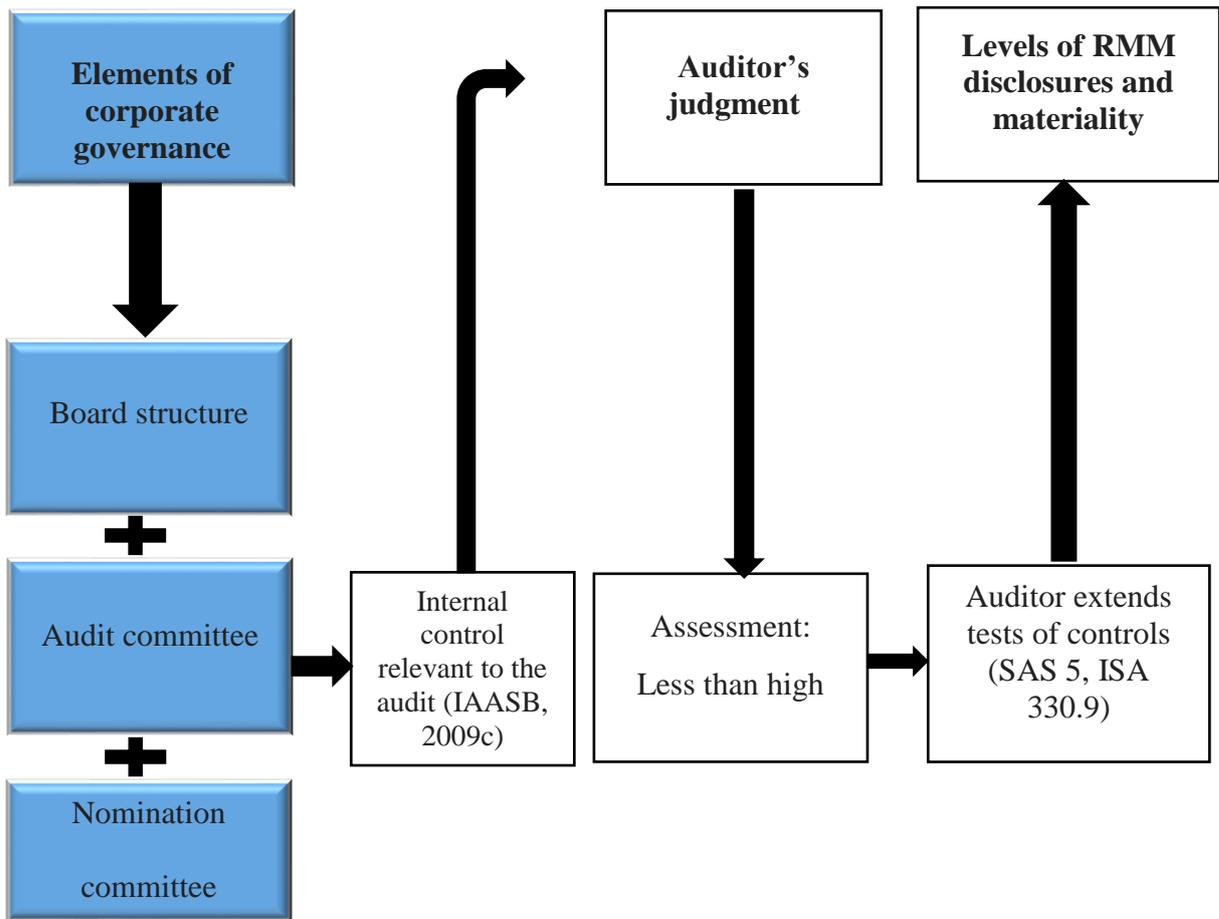


Figure 3.1 Diagram of corporate governance mechanisms and the disclosures of risks of material misstatement

Figure 3.1 is the flowchart that outlines the relationship between corporate governance factors and the disclosures of risks of material misstatement in the extended auditor’s report. It shows the elements of corporate governance (board of directors, and audit and nomination committees) increase the effectiveness of a firm’s internal control (e.g., Abbott et al., 2000), via monitoring opportunistic managerial behavior (e.g., Manne, 1965), which in turn affects auditor’s judgment. It also shows that if the firm has an effective internal control, the auditor would assess the audit risk as less than high. With such assessment, the auditor is expected to increase the tests of controls, hence disclosures of RMM and reduce the extent of substantive tests as required by the auditing standards (SAS 5, ISA 330.9).

Building on the link between corporate governance and information asymmetry, and the link between corporate governance and auditor's judgment, this thesis argues that corporate governance elements reduce information asymmetry, which in turn increases information environment for auditors and improves their disclosures. The hypothesis is as follows:

*H1 (a): There is a positive association between the strength of corporate governance and the disclosures of risks of material misstatement.*³²

3.3.1 Board structure

3.3.1.1 Board size

The roles of the board are very important to auditors because, before adapting the nature, extent, timing, and/or staffing of tests (Bedard & Johnstone, 2004), auditors must first recognize and properly assess the strength of corporate governance factors including the role of the board (Cohen et al., 2007). However, few writers are able to draw on any systematic research into the link between role of the board and key auditor's judgment such as including risk assessment and determination of audit scope (Cohen et al., 2007). Therefore, this current research adapts the influence of the board size on the firm performance to build up the argument which is having a larger board leads to lower audit risk. With such lower audit risk, auditors are more likely to extend tests of controls, hence the disclosures of risks of material misstatement.

The results on board size influencing firm performance are mixed. On one side, resource dependence theory states that firm performance will increase when a firm board is large due to

³² Hypotheses are not proposed for each mechanism of corporate governance to enhance readability. However, a detailed discussion on the impact of each mechanism is provided in Subsection 3.3.1 and the measurement of each mechanism is provided in Chapter 4.

its ability in bringing a pool of available resources and expertise to the firm (Dalton, Daily, Johnson, & Ellstrand, 1999). Consistent with this theoretical perspective, larger boards have higher performance because of their greater collective information (Dalton & Dalton, 2005; Dalton et al., 1999), and this leads to improve monitoring function (Lehn, Patro, & Zhao, 2009). Second, larger boards have more responsibility to monitor management teams, thus ensuring that managers pursue the interests of shareholders, as well as, when there is an increase in the board size, an increase in the number of non-executives is expected (Guest, 2009). Furthermore, it is found that when a board is stronger, control risk assessments are low and auditors decrease planned audit effort (Cohen et al., 2007).

Fama and Jensen (1983) and Healy and Palepu (2001) also argue that the board has an important role in reducing agency problems between stakeholder and managers. This is consistent with arguments forwarded by Gillan, Hartzell, Starks (2004), Harris and Raviv (2007), and Raheja (2005) that board size increases monitoring. If the board size increases firm performance (Dalton et al., 1999), limits the self-interest and opportunistic behavior by the agent, it is then expected that a firm's internal control operates more effectively with such boards. As such, control risk assessment is assessed as less than high. Hence, auditors extend tests of controls as advice by the auditing standards (SAS 5; ISA 330.9).

On the basis of this discussion, this study hypothesizes that there is a positive association between board size and the level of auditor's disclosures of RMM.

3.3.1.2 Non-executive directors

Non-executive directors are those members who are not among the executive team but are included in the board of directors of the firm which have three key roles, namely, control, service and resource (Johnson, Daily, & Ellstrand, 1996). The U.K. combined code of best

practice recommends that non-executive directors should make up at least one-third of the board in order for firms to decrease agency costs. Several studies side with the fact that non-executive directors can positively impact the strength of the corporate governance and that they are more likely to act in shareholders' best interests (Borokhovich, Parrino, & Trapani, 1996; Brickley et al., 1994; Byrd & Hickman, 1992; Chen & Jaggi, 2000, Hermalin & Weisbach, 1988).

In addition, Fama (1980) , Fama and Jensen (1983) and Kaplan and Reishus (1990) find that the reputation of non-executive directors makes them more effective in monitoring the board's decisions in a way to serve the interest of shareholders. The board performance, on the other hand, increases when outside directors are appointed (Brickley, Linck, & Coles, 1999). This is because of the great ability of outside directors in monitoring and replacing the CEO when there is a poor performance (Weisbach, 1988).

Numerous studies provide advantages on the existence of non-executive directors in terms of, for example, monitoring managerial decisions, and its role on reducing likelihood of financial reporting problems such as fraud occurrence. To start with, Fama (1980) sees outside directors as an internal monitor of managerial decision-making, thus more protecting the interests of the shareholders. The findings of Fama (1980) are in line with Fama and Jensen (1983) who find that a higher proportion of independent directors have greater control and monitoring on managerial decisions.

In addition, several studies examine the relationship between the proportion of outside directors in the board and financial statement frauds (Beasley, 1996; Dechow, Sloan, et al., 1996). For example, Seamer and Psaros (2000) find that firms with fraud cases have a lower proportion of outside directors. Their results are supported by Sharma (2004) who finds that as the proportion of independent directors on a board increases, the likelihood of fraud decreases.

Furthermore, bankruptcy cases occurred more in firms with fewer outside directors (Gilson, 1990). Lastly, there is a negative relationship between financial reporting problems and independence and expertise on boards and audit committees (Agrawal & Chadha, 2005; Beasley, 1996; Dechow, Sloan, et al., 1996; Farber, 2005). Thus, these results are in line with the argument that more non-executive directors strengthen monitoring capacity leading to the auditors increasing dependence on internal control. As a result of auditors increasing dependence on internal control, auditors will need to extend the tests of controls to support their evidence, hence more auditor's disclosures of RMM. Thus, if non-executive directors are found in prior studies to have a positive effect on firm performance, it is then expected that the non-executive directors positively affect auditor's disclosures of RMM.

3.3.1.3 Duality

Duality is the situation whereby the CEO serves in the position of the board chairperson. The separation of the CEO and chairperson is widely supported. For example, Jensen (1993) supports that if the chairperson of the board of directors at the same firm works in the capacity of a Chief Executive Officer (CEO), it is said to be a conflict of interests, and thus it is likely that agency costs will be higher. CEO duality is also one of the important aspects of board structure which have received much of the attention of the researchers and policy makers. Therefore, the U.K. Combined Code recommends firms to separate the CEO and chairperson as the CEO becomes board chair, he/she is more likely to gain more power (Weisbach, 1988).

The separation of the CEO and the chairperson is supported by some studies which argue that the board will have less ability to monitor the CEO in firms that have one individual who serves as both chairperson and chief executive officer/managing director (e.g., Beasley, 1996; Dechow, Hutton, & Sloan, 1996). Ho and Wong (2001) also find a relationship between firms with CEO duality and managerial dominate. Further, a significant relationship between duality

and the quality of financial statements disclosures is found by numerous studies (Abdelsalam & Street, 2007; Cerbioni & Parbonetti, 2007; Forker, 1992; Gul & Leung, 2004; Huafang & Jianguo, 2007; Sarkar, Sarkar, & Sen, 2008). Moreover, Sharma (2004) finds a positive relationship between duality and the likelihood of fraud.

In contrast, several studies do not find any influence of CEO duality on firm performance (Vafeas & Theodorou, 1998; Weir, Laing, & McKnight, 2002). Likewise, some studies do not find any influence of CEO duality on financial statements problems. For example, Abbott, Parker, and Presley (2012) argue that there is a positive association between duality and the likelihood of financial restatement. However, they fail to have a prediction on the association between likelihood of financial restatement and duality. Abdullah, Mohamad-Yusof, and Mohamad-Nor (2010) also find no link between CEO duality and earnings management or restatements in Malaysia. It remains an empirical question of whether CEO duality is associated with RMM disclosures. Hence, this thesis makes a non-directional hypothesis.

3.3.1.4 CEO tenure

The CEO tenure refers to the time that he/she has worked with the company as an executive director. The argument is that when the CEO works in a firm for longer years, he or she will become powerful and have more power over the board, increasing conflicts of interests which leads towards poor firm performance (Miller & Friesen, 1977), leading to increase the levels of audit risks, and leading a limitation of information provided to auditors, hence less auditor's disclosures. A large number of research studies support this argument by showing an empirical evidence related to impact of CEO turnover rates on, for example, restatements cases (irregularities and errors) (Burks, 2007; Collins, Reitenga, & Sanchez-Cuevas, 2005; Desai, Hogan, & Wilkins, 2006; Hennes, Leone, & Miller, 2008; Jayaraman, Mulford, & Wedge, 2004; Land, 2006). These findings are in line with the argument made by Rijsenbilt and

Commandeur (2013) that there is a tendency of CEO to commit fraud in a situation where CEO works for long years in a firm. However, prior studies find no evidence between CEO tenure and committing fraud or restatements cases (e.g., Agrawal, Jaffe, & Karpoff, 1999; Beneish, 1999). On the basis of the above discussion, this study expects that firms with long CEO tenure have a limited information environment for auditors, hence less RMM disclosures.

3.3.1.5 Gender diversity

Some studies examine how gender diversity affects board monitoring (e.g., Adams & Ferreira, 2009; Gul, Srinidhi, & Ng, 2011). These studies find that the presence of female directors improves board monitoring, and female directors benefit a firm's stock prices delivering more firm-specific facts (Gul et al., 2011). Besides, female directors carry additional representative management styles to the board (Trinidad & Normore, 2005). Likewise, Nguyen and Faff (2007) investigate the relationship of gender diversity with firm value for Australian firms. The results of their study show that the presence of women directors is associated with higher firm value.

Moreover, Srinidhi, Gul, and Tsui (2011) demonstrate that companies where there is a manifestation of women in the board display higher earnings quality. Furthermore, Abbott et al. (2012) find an important connotation amongst the manifestation of at least one woman on the board and a lower likelihood of restatement. Using the context of critical audit matters, Velte (2018) investigates the role of women on the U.K. audit committees on the readability of the expanded auditor's report. Using two year's analysis, he finds that the percentage of female members on the audit committees positively affects the readability of KAM disclosures as channel of monitoring activities. Thus, whether gender-diversity really has effects on the level of auditor's disclosures of RMM remains as an empirical question.

3.3.1.6 Audit and nomination committees

The presence of the audit committee is one of the elements of corporate governance and is seen as one of the effective figures in monitoring agency costs. Hence, several studies search for mechanisms that lead to the enhancement of corporate governance thereby increasing the quality of financial reports based on the audit committee's structure (Naiker, Sharma, & Sharma, 2012). However, little research investigates the influence of audit committee on auditor's judgment even though audit committees are found to reduce the communication issues between auditors and management by increasing the level of discussion (Turley & Zaman, 2004).

Some studies provide a positive influence of audit committees on financial reporting process. For example, companies with audit committees are more likely to hire a Big audit firm at the time of a change in auditor (Cohen et al., 2002), and firms with audit committees that are independent and meet at least twice per year are more likely to select auditors specializing in the company's industry (Abbott et al., 2000). Furthermore, there is evidence of a tendency for companies with an audit committee (AC) to correct errors in previous reports (DeFond & Jiambalvo, 1991). Additionally, companies manipulating earnings and errors and irregularities in financial statements are also less likely to occur among companies that have AC (Dechow, Sloan, et al., 1996; McMullen, 1996). However, the audit process is not influenced by discussions with audit committees (Cohen et al., 2002) and that the presence of an audit committee does not significantly affect the likelihood of fraud (Beasley, 1996). Based on the previous results, it is expected that firms with active audit committees are more likely to have less audit risks, hence, greater extent of tests of controls and RMM disclosures.

3.3.1.6.1 Activity of audit committee

In most cases, the number of meetings of the audit committee is applied in the literature of the audit committee to indicate their willingness to act or diligence. There are arguments that the

firms which have reporting issues do not have frequent meetings of the audit committee. The results obtained from prior studies show that there exists a negative association between the possibility of fraud or fraudulent or misleading reporting and the number of meetings. For example, Abbott et al. (2000) find that firms are less likely to face fraudulent or misleading reporting when audit committees meet at least twice per year. Additionally, it is suggested by the American Bar Association (ABA) that if the audit committee meets frequently, this committee will be able to carry out its duties in an effective manner (Greene & Falk, 1979). On the basis of this discussion, a positive linkage is expected between the audit committee meeting and auditor's disclosures of RMM.

3.3.1.6.2 Independence of audit committee

The volume of empirical evidence shows that the advantage of independent audit committees is to ensure that there is reliable and high-quality financial reporting. Therefore, there is a need for an audit committee which is effective to promote the integrity of the financial reports of firms as argued by Lennox and Park (2007). Additionally, the research results show that the audit committee independence lowers the probability that the auditor will issue a going-concern audit qualification (Carcello & Neal, 2003). Furthermore, it is also found that fraudulent or misleading reporting are less likely to happen in firms with a more independent audit committee. In other empirical studies, there are suggestions that adhering to the audit committee recommendations is expensive, especially where small firms which have limited resources are involved (Ahmad, 2016). This scenario has an implication that the independence of the audit committee should be the first consideration during the allocation of limited resources especially in the firms which are distressed financially. Hence, it is expected that independent directors setting on the audit committee increase the quality of the firm controls leading auditors to increase tests and RMM discourses.

3.3.1.6.3 Size and independence of nomination committee

Nominating committees serve under the area of the corporate governance of a company; their role is to evaluate the board of directors of its respective organization. The nomination committee is seen as one of the corporate governance mechanisms that fulfil the role of nominating to the board and its role to increase effectiveness of the board (Marrakchi Chtourou, Bedard, & Courteau, 2001). It is evident that the presence of the nomination committee would ensure that there is an appointment of non-executive directors who will have interests that are in line with those of the shareholders, positively affecting the corporate governance of a company and reducing the agency costs (McKnight & Weir, 2009). Because of the nomination committee role, regulators such as the U.K. Combined Code recommends firms to adopt a nomination committee with a majority of non-executive directors. Hence, it is expected that the higher percentage of directors on a nomination committee, and a higher percentage of non-executive directors on a nomination committee will increase auditor's disclosures of RMM via the effectiveness of the firm controls.

3.3.2 Audit materiality and corporate governance

The term of "overall materiality" is not used in International Standards on Auditing, rather it is used by auditors. Auditors use materiality when planning an audit to ensure that the auditor has a reasonable expectation of detecting material for statements as a whole. International Standards on Auditing No. 320 (ISA 320.4) says that auditors assess *what is a material* (IAASB, 2004). This means that auditors use their professional judgment. However, as materiality is based on professional judgments – judgments which are likely to vary – (Iskandar, 1996), and no specific quantitative guidelines concerning percentage for the rules of setting the materiality level contained in the auditing standards (Blokdiijk et al., 2003), a number of authors provide mixed results on what influences planning materiality. One group argues

that the type of audit firms influences the levels of planning materiality. For example, the size of audit firms affects the levels of materiality (Elliott, 1983; Warren & Elliot, 1986).

The second group argues that the quality of a firm control affects the materiality levels. This is consistent with the expectation that auditors are more likely to plan low levels of materiality when they find that the firm control is less effective. Blokdijs et al. (2003) provide evidence supporting this expectation. They find that auditors increase materiality level when firms have high-quality internal control. In addition, Whittington and Margheim (1993) argue about the negative association between materiality judgments and control risk, and show that when auditors apply low-materiality level, more tests are assigned of control work. Keune and Johnstone (2012) show that audit committee also influences the level of materiality. This is in line with DeZoort et al. (2003) who show that directors who are more experienced and have CPAs affects auditor materiality judgments. Finally, International Standards on Auditing No. 320 (ISA 320) clearly states the relationship between audit materiality and audit risk; that is, “there is an inverse relationship between materiality and the level of audit risk; that is, the higher the materiality level, the lower the audit risk and vice versa” (IAASB, 2004).

Based on the above discussion and on International Standards on Auditing No. 320, it is hypothesized that:

H1 (b): *There is a positive association between the strengths of corporate governance and the materiality level.*

3.3.3 Firm characteristics

This section identifies key firm characteristics – other than corporate governance attributes – that potentially affect the risks of material misstatement disclosures. This is because firm-specific factors not only can influence the level of agency costs (McKnight & Weir, 2009), but

also a firm's capital structure (Bancel & Mittoo, 2004; Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Claessens, Djankov, & Nenova, 2001). In addition, firm-specific factors influence auditor judgments when "assessing litigation risk, planning audit procedures, and pricing audit services" (Pratt & Stice, 1994). These firm-specific factors include firm size, profitability, tangible assets, rate of growth, asset structure, leverage, and firm complexity.

3.3.3.1 Firm size

Empirical evidence suggests that firm performance ratios such as return on assets (ROA), share return, and Tobin's Q are influenced by firm size and it is expected that this influence would extend to the risks of material misstatement disclosures. The argument revolves around the notion that bigger firms are more likely to be involved with higher agency costs due to the extension of their operations and businesses. This issue is supported by Cho (2002) who argues that increasing firm size makes monitoring more difficult and costly. In an Australian setting, Goodwin-Stewart and Kent (2006) find that large firms are more likely to have higher agency costs than smaller firms. Moreover, large firms have operations often in diverse lines of business and they are likely to operate over large geographic territories. This makes it difficult to have effective management control over all operations of the firms. In other words, since large companies are expected to have a large number of employees, a large number of transactions, a large number of products, it is expected that agency problems between such parties are high in these firms. Carey, Simnett, and Tanewski (2000) also use an agency cost framework to argue about the relationship between internal and external auditing and firm size. In addition, Carcello, Hermanson, and Raghunandan (2005) argue that since agency costs are expected to be higher in larger organizations, it is more likely that such organizations will need risk management. In doing so, they study the factors that drive companies to heavily invest in internal audit committees. Based on data from 217 U.S. public companies, they find a positive

relationship between internal audit budget and firm size. This is consistent with the findings of Wallace and Kreutzfeldt (1991) who find that the existence of audit committees is more likely to take place in large firms to reduce agency costs. Furthermore, Subramaniam, McManus, and Zhang (2009) find a significant association between the size of the organization and the existence of risk management committee suggesting that larger firms are associated with more risk. Therefore, it is expected that the information environment in a large firm is weak. Such situations would influence the auditor's judgment. For example, Reynolds and Francis (2000) provide evidence that the auditor's report is more conservative for large clients suggesting that reputation protection dominates auditor behavior.

In another way of assessing the risks associated with larger firms, a number of studies use the cash conversion cycle. Moss and Stine (1993) define the cash conversion cycle as the length of time between cash payment for purchase of resalable goods and collection of accounts receivable generated by sale of these goods. In other words, the cash conversion cycle measures the time taken by the company converting the company's investments in inventory and other resources into cash. The longer the time is, the less the liquidity and less liquidity increases default risk (Ali, Iu, & Su, 2018). Moss and Stine (1993) argue that firm size drives the length of the cash conversion cycle. These attributes of large firms are likely to make them prone to the risks of material misstatement disclosures.³³ The above arguments lead to the following hypothesis:

³³ One can argue that (1) large firms can afford to spend a significant amount of resources in management control and governance, and (2) large firms usually have more independent directors on the board, and are more likely to have an audit committee and more financial experts on the board, hence less agency costs. However, this thesis follows the argument that larger firms have higher agency costs.

H2 (a): *There is a positive association between firm size and the disclosures of risks of material misstatement.*

3.3.3.2 Profitability

One of the key measures of firm performance is income or profit generated by the firm through its operations. Researchers hold that the aspects of profitability such as *ROA* and return on equity (*ROE*) are linked to, for example, agency risk, financial statement errors, and fraud propensity. For instance, Kreutzfeldt and Wallace (1986) find that companies with financial problems have significantly more financial statement errors than other companies.

Moreover, Kinney and McDaniel (1989) state that firms are more likely to disguise problems through “window dressing” when poor financial conditions occurred. In conjunction with Kinney and McDaniel (1989), Stice (1991) states that future capital provider losses are more likely to occur in firms with poor financial conditions. In addition, firms with weak financial condition are more likely to present their problems in un-appreciated ways which means there are risks of misstatement (Kinney & McDaniel, 1989). Lastly, a negative relationship is documented between poor financial conditions of clients and litigation risks (Pratt & Stice, 1994; Stice, 1991) and a positive relationship is documented between weakness in the financial performance and weakness in internal controls (Ashbaugh-Skaife et al., 2007; Doyle et al., 2007). Thus, firms which perform well in generating profits should be under less pressure to engage in material misstatement compared to firms that are less profitable. This argument leads to the following hypothesis:

H2 (b): *There is a negative association between firm financial performance and the disclosures of risks of material misstatement.*

3.3.3.3 Tangible assets

Property, plant and equipment are tangible items that: (1) are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and (2) are expected to be used during more than one period (IAS 16). The audit approaches for tangible assets are generally similar and somehow easy to audit. This is because for example, the account balances of these assets are usually affected by a few large transactions, the account does not turn over frequently, and these assets are classified separately (Gay & Simnett, 2015). This indicates that tangible assets are easier to observe (Ali et al., 2017; Chung et al., 2010), hence audit.

However, there are some risks associated with account balances of net property, plant and equipment. Therefore, an auditor needs to perform, during the period, tests of balances for net property, plant and equipment. International Accounting Standard No 16 (IAS 16) prescribes the accounting treatment for property, plant and equipment and requires auditors to apply substantive audit procedures to ensure that these assets physically exist, the firm has the legal title or equivalent ownership of these assets, the cost of these assets are completed and recoded, the firm calculates the most appropriate values and uses the right depreciation method, the firm records these assets in the proper accounts, and the firm discloses enough and understandable information about these assets (Gay & Simnett, 2015; IASB, 2005). Consequently, as these tests are not complicated and easy to perform, it is expected that the disclosures of net property, plant and equipment will not take a large part of the auditor's report. This argument leads to the following hypothesis:

H2 (c): *There is a negative association between a client's tangible assets and the disclosures of risks of material misstatement.*

3.3.3.4 Rate of growth

High rates of sales growth are associated with audit failure, audit risk, and fraud cases (Hylas & Ashton, 1982; Pratt & Stice, 1994; Sharma, 2004). Therefore, it is expected that the rate of growth in sales is positively associated with the levels of RMM disclosures, and negatively with materiality level. Pratt and Stice (1994) argue that the rates of sales growth are linked to likelihood of an audit failure. They state that the rate of a client's growth can make heavy changes in both the revenue/receipt and expenditure/disbursement transaction cycles "which in turn can overburden the client's internal control system, reducing its ability to properly process transactions".

In addition, Hylas and Ashton (1982) find that most of the errors discovered by auditors come from the rate of a client's growth. In addition, Pratt and Stice (1994) find that sales growth are positively related to litigation risks in most cases. Finally, Sharma (2004) finds a positive relationship between a firm that has experienced fraud and firms growth in Australia. However, Chen et al. (2006) find a negative relationship between the sales growth and the occurrence of fraud activities in China. Consistent with this strand of the literature, this research predicts that high-growth firms are more likely to engage in material misstatement compared to low-growth firms. This argument leads to the following hypothesis:

H2 (d): *There is a positive association between a client's rate of sales growth and the disclosures of risks of material misstatement.*

3.3.3.5 Asset structure

Receivable and inventory accounts are expected to take a large part of auditor's disclosures in regards to RMM because they require auditor's subjective judgment due to their values, therefore, are difficult and risky to audit and they are related to audit failure (Pratt & Stice, 1994). A number of empirical studies support this finding showing the effect of receivables and inventory on auditor's judgment (e.g., Francis & Simon, 1987; Ham, Losell, &

Smieliauskas, 1985; Kreutzfeldt & Wallace, 1986; Simon & Francis, 1988; Simunic, 1980; Willingham & Wright, 1985). It is also found that most of the errors related to the balance sheet are associated with either accounts receivable or inventory (St. Pierre & Anderson, 1984). Based on this, a positive sign is expected between the proportions of inventory and accounts receivable to total assets and the disclosures of RMM.

H2 (e): *There is a positive association between the proportions of inventory and accounts receivable to total assets and the disclosures of risks of material misstatement.*

3.3.3.6 Leverage

Some studies use leverage as a measure of the company's indebtedness. The main idea about debt is that it is one of the possible strategies to decrease agency costs by giving debt-holders more monitoring role over the managers, thus managers have less opportunities to engage in non-value maximizing activities. This main idea came from Jensen and Meckling (1976) who suggest that debt has an important role in reducing the agent-principal problem as debtholders can monitor management behavior. Several studies adopt an agency theory framework in examining the linkage between the level of debt and the level of agency costs. For instance, Kim and Sorensen (1986) find a positive linkage between ownership and debt. They indicate that this association occurs because debt is a way of reducing the agent-principal problems. This is understandable because ownership is a component of monitoring mechanism "internal monitoring mechanism" over managerial behavior (see e.g., Ali et al., 2017; karamanou & vafeas, 2005).

A number of authors extend this literature by arguing that not only greater debt ratios can reduce agent-principal problems but also can make the stock more liquid. Whited (1992), as an example, states that there is a positive sign between stock liquidity and a higher debt-equity ratio in firms. If the use of debt can reduce agency costs between managers and shareholders,

it is expected that firms with larger debt have better firm performance. For example, Campello (2006) argues that debt financing increases firm performance. Based on data from 115 industries over 30 years, he finds a positive relation between leverage and sales. According to him, such firms aim to take out debt to increase production for sales gains.

In addition, Agrawal and Knoeber (1996) argue that the mechanisms to control agency problems include shareholdings of insiders, institutions, and large blockholders, use of outside directors, debt policy, the managerial labor market, and the market for corporate control increase firm performance. In using OLS regression, they find that insider shareholdings, outside directors, debt, and corporate control increase firm performance (Tobin's Q). Based on the above discussion, it is expected that agency costs are lower in firms with higher debt, thus lower audit risk. This means the greater extent of tests of controls and, therefore, disclosures of RMM.

However, some studies are not in line with this expectation. For example, *DeFond et al.* (2002) find that firms with the going concern cases have greater debt ratios. This is understandable because firm with "too much" debt has business survival risks as such firm depends its resources on other organizations as recommended by resource dependence theory. In addition, Chen et al. (2006) find no relationship that exists between the leverage ratio and the occurrence of fraud activities in China. Sharma (2004) also finds no relationship between a firm that has experienced fraud and leverage in Australia. Thus, due to the mixed results, Study One expects a nonlinear association between the debt level in a firm and auditor's disclosures of RMM. This argument leads to the following hypothesis:

H2 (f): *There is a nonlinear³⁴ association between leverage and the disclosures of risks of material misstatement.*

3.3.3.7 Complexity

For auditors to respond to the risks of material misstatement, auditors need to identify and assess relevant risks including business risk (IAASB, 2009c). Since complex firms have operations in diverse lines of business, they are associated with business risk from the auditor's point of view. This is because auditor needs to understand all of these operations for performing an assessment (PCAOB, 2010c). This is supported by Singh (1997) who finds that firms with high-complexity are associated with a higher risk of failure. According to him, complex firms have business survivor risk because it is difficult for such firms to develop the required competencies with such cost associated with competencies. With such firms, auditors are expected to increase audit fees. This is predicted by Bell et al. (2001) who find a positive relationship between audit fees and business risk.

In addition, the complexity of the auditee's operations is viewed as an influence on the assessment of the loss function (Seetharamana, Gul, & Lynn, 2002; Simunic, 1980). Nikkinen and Sahlström (2004) extend this by arguing that not only audit fees increase in business risk but in firms associated with complex audit. They state that complex firms increase the level of auditor effort, thereby raising audit fees.

³⁴ A nonlinear relationship indicates that the author of this thesis holds no directions of the correlation sign on leverage. This is because, as seen on the above discussion, the authors show mixed results on the influence of leverage.

Since complex firms have operations in diverse lines of business, it is likely that the financial statements of complex firms contain errors, hence the need for greater audit function. For example, Krishnan and Lee (2009) argue that firms with high-complexity demand for audit committee with financial experts to maintain litigation risk. In some, these features of complex firms are likely to make them susceptible to the RMM in the extended auditor's report. This argument leads to the following hypothesis:

H2 (g): *There is a positive association between the complexity of a firm and the disclosures of risks of material misstatement.*

3.3.4 Firm attributes and materiality level

According to International Accounting Standards Board, information is material if omitting, misstating or obscuring it could reasonably be expected to influence the decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity (IASB, 2003; IFRS, 2017). Following the definition, it is likely that firms with strong corporate governance have higher thresholds for materiality because audit risk is lower. Following Blokdiik et al. (2003), Elliott (1983), Mayer (1982), and Warren and Elliot (1986), this thesis argues that materiality level will also increase with firm size and profitability because for large firms and profitable firms, the magnitude of misstate and/or omit need to be large before it becomes material. Auditors are likely to apply a lower level of materiality for growth firms because such firms (1) pose a challenge for auditors in processing revenue and expenditure cycles, (Hylas & Ashton, 1982) and the rate of sales growth is positively related to litigation risks and fraud risk (Pratt & Stice, (1994; Sharma, 2004).

Similarly, when receivables and inventory are a significant part of total assets, auditors are likely to apply lower levels of materiality. This is because such accounts influence auditor's

judgment (e.g., Francis & Simon, 1987; Ham, Losell, & Smieliauskas, 1985) and some errors in the balance sheet come from either accounts receivable or inventory. In relation to debt, auditors are likely to apply higher levels of materiality because of the monitoring role of debt (Jensen & Meckling, 1976). However, auditors are likely to lower the materiality level for complex firms because (1) complex firms are associated with a higher risk of failure (Singh, 1997); (2) require greater monitoring via audit committee with financial experts (Krishnan & Lee, 2009); (3) auditors increase audit effort in such firms (Nikkinen & Sahlström, 2005). This argument leads to the following hypothesis:

H2 (h): *The level of audit materiality (i) increases in large and profitable firms, and with leverage and (ii) decreases in firms with a high rate of sales growth, a large proportion of accounts receivable and inventory, and in complex firms.*

3.3.5 Ownership structure

The topic of ownership structure has been examined widely, especially since separation of ownership and control in the modern corporation (Berle & Means, 1932; Coase, 1937). The main perspective of ownership structure comes from agency theory which tells us that ownership structure in a company results in a force; that is, controversial on the behavior of the management (Jensen, 1993) i.e., the convergence effect whereby increased ownership structure can improve corporate performance (Mudambi & Nicosia, 1998).

Since the conflict of interest between managers and shareholders cannot be resolved by the market for corporate control (Jensen, 1993), legal rules (Shleifer & Vishny, 1997) or by managerial holding positions (McConnell & Servaes, 1995), scholars argue that the ownership structure influences agency problems, thus the performance of an organization. For instance, Denis and McConnell (2003) note that greater overlap between ownership and control are more likely to reduce the conflicts of interest between managers and owners, therefore, to higher

firm value. Denis and McConnell (2003) argue that ownership structure is a potentially important element of corporate governance. They argue that, unlike shareholders who own very small fractions of an individual firm, shareholders who own a large proportion of a firm are more likely to expend their resources to monitor managers and to provide external resources a firm needs to survive or to reduce survival risks (Sheppard, 1995). Other studies include, for example, Ali et al. (2017), karamanou & vafeas, (2005), and Siregar et al. (2015) view ownership is an important component of corporate governance that has an internal monitoring mechanism over managerial behavior, resulting in a lower agency costs.

If ownership reduces agency costs, it is expected that ownership can also influence auditor's judgment. This is supported by Cohen and Hanno (2000) who argue that auditor judgment in terms of pre-planning and planning is affected by either strong or weak management control. Nevertheless, it can be argued that when there is a higher ownership concentration, there is less incentive for managers to engage in opportunism as a result of aligning the interests of managers and investors (Denis & McConnell, 2003). Therefore, more effective a firm's internal control is in place, and there is a possibility that managers will work on behalf of the owners of a firm, resulting in a stronger information environment. This means the auditor is more likely to assess audit risk as less than high and to extend the tests of controls to support this assessment as advised by International Auditing and Assurance Standards Board (IAASB, 2009a). Following the discussion above, this study predicts that via reducing agency problems, firms with high ownership have lower audit risk. This should result in auditor's extend tests of controls hence disclosures of RMM.

3.3.5.1 Institutional ownership

Several studies that examine the relationship between institutional ownership and fraud indicate that the institutional shareholders have economic incentives to safeguard their

investments. Prior studies suggest a large shareholder mitigates agency costs by, for example, monitoring the operations of the management very closely (e.g., Gillan & Starks, 2000; Grossman & Hart, 1980; Huddart, 1993; Shleifer & Vishny, 1986). Specifically, shareholders with large ownership are more likely to (1) actively participate in the company's affairs including the process of the financial reporting (Jensen, 1993; Jensen & Meckling, 1976; Mitra, Hossain, & Deis, 2007; Monks & Minow, 1995) and (2) reduce the problems in financial statements such as abnormal accruals (Mitra & Cready, 2005).

On the other hand, earnings management is significantly negative with institutional investors (Greco, 2012). Further, Kurawa and Abdulrahman (2014) find a significant negative relationship between absolute value of discretionary accruals and institutional ownership. In addition, the inherent risks of material misstatement in financial reporting, and an auditor's planned engagement efforts become lower in firms with such active monitoring (Mitra et al., 2007).

In prior studies, the role of the institutional ownership in going concern audit opinion and fraud are investigated. For instance, Blay et al. (2016) find that going concern opinion is linked mostly to firms with low institutional ownership, while Abbott et al. (2000) share the view that U.S. firms with low external ownership are more likely to be sanctioned for fraudulent or misleading reporting. If institutional ownership is found to reduce (1) agency problems between investors and managers (e.g., Gillan & Starks, 2000); (2) abnormal accruals and absolute value of discretionary accruals cases (Mitra & Cready, 2005; Kurawa & Abdulrahman, 2014); (3) planned engagement efforts (Mitra et al., 2007); (4) the likelihood of going concern opinion (Abbott et al., 2000; Blay et al., 2016), it is then reasonable to argue that increasing the strength of monitoring over the managers by institutional owners would lead to lower audit risks. With such assessment, auditors are likely to extend the tests of controls as

mentioned by the independent standards body (IAASB, 2009a), hence the disclosures of RMM.

Thus, it is hypothesized that:

H3 (a): *There is a positive association between institutional ownership and the disclosures of risks of material misstatement.*

3.3.5.2 Managerial ownership

As mentioned previously, a negative side of separating ownership from control is that managers may have incentive to act based on their own interest instead of maximizing the wealth of shareholders (Jerzemowska, 2006; Masulis, 1988). This includes, for example, the managers may (1) make the position of firm financial statements look better than it actually is; (2) may override the firm control (Gay & Simnett, 2015); and (3) may increase firm dependency on other organizations, which in turn threatens firm revival according to resources dependency theory (Pfeffer & Salancik, 2003). To limit the self-interest and opportunistic behavior by the agent, Jensen and Meckling (1976) recommend the use of managers' ownership as an internal mechanism and find a negative linkage between managers' ownership and managerial opportunism. It is based on the view that giving managers the ability to hold firm shares would serve to better align managers' interests with those of the company's shareholders (Denis & McConnell, 2003).

If managerial ownership can reduce agency problems, it is then expected that firms with managerial ownership have more effective internal control, hence less problems in the financial statements. This argument is supported by a number of researchers who study the relationship between managerial ownership and financial statement problems. For example, Alexander and Cohen (1999) find that crime occurs less frequently among firms in which management has a larger ownership stake. Furthermore, a negative relation between managerial ownership and the absolute value of abnormal accruals is found by Warfield et al. (1995). In prior studies, the

role of the managerial ownership on going concern audit opinion context is investigated. For instance, Linoputri and Achmad (2010) find that auditors are less likely to provide going concern audit opinion on the companies with greater managerial ownership. This is also supported by Iskandar, Rahmat, Noor, Saleh, and Ali (2011) who find a significant negative relationship between management ownership and going concern audit opinion.

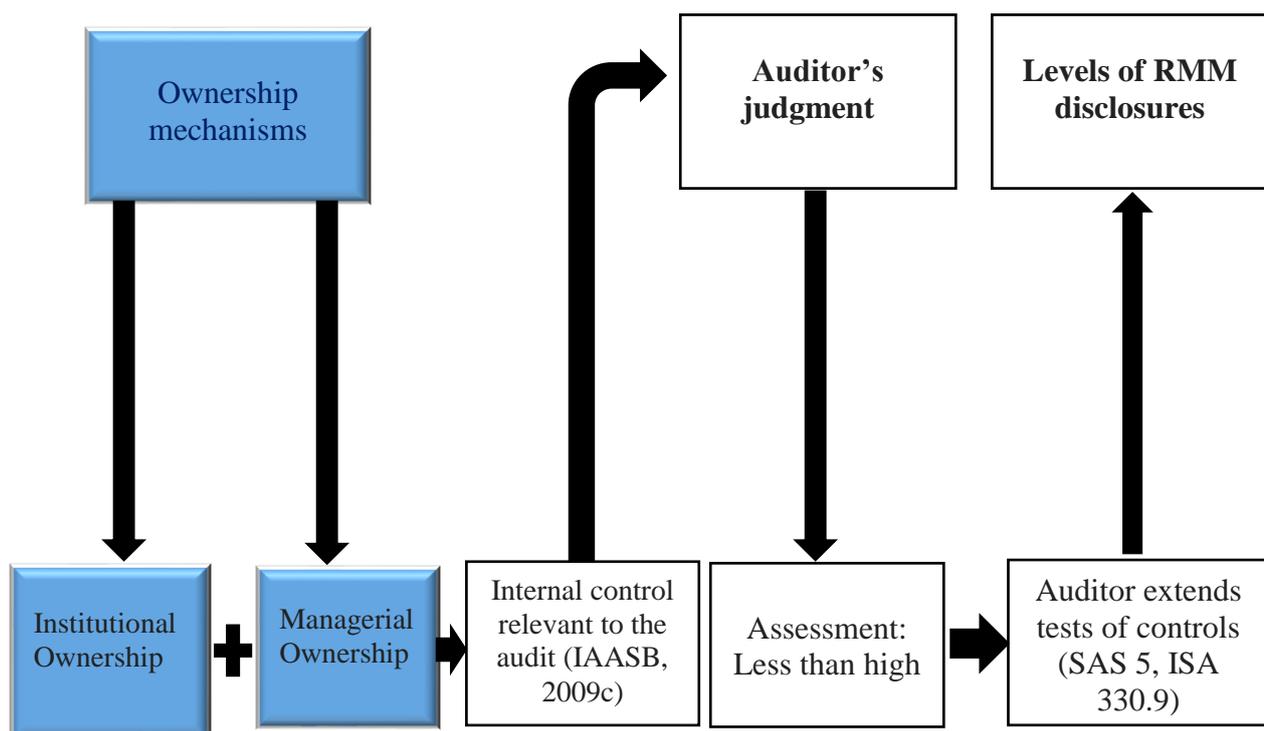


Figure 3.2 Diagram of ownership mechanisms and disclosures of risks of material misstatement

Figure 3.2 is the flowchart that outlines the relationship between ownership structure and the disclosures of risks of material misstatement in the extended auditor’s report. It shows that institutional and managerial ownership are one of the mechanisms over managerial behavior (see e.g., Ali et al., 2017; karamanou & vafeas, 2005). This, in turn, reduces agency problems between agents and shareholders (e.g., Gillan & Starks, 2000) affecting auditor’s judgment.

This figure also indicates that if a firm has an effective internal control as a result of such mechanisms, the auditor would assess audit risk as less than high. With audit risks being assessed as less than high, the auditor is expected to increase the tests of controls, hence disclosures of RMM to support this assessment as required by the auditing standards (SAS 5; ISA 330.9).

Lastly, many studies provide evidence on the influence of managerial ownership on the financial accounting choices. For example, Mitra et al. (2007) argue that the type of accounting information, the quality of such information, and strategy of purchasing high-quality audit may be adopted by managers if there is a managerial ownership. This result is in line with many studies (e.g., Gul, Chen, & Tsui, 2003; Holthausen, Larcker, & Sloan, 1995; Kamin & Ronen, 1978; Warfield et al., 1995). These findings suggest that if the managerial ownership percentage is high, the audit risk is less than high, and this leads the auditors to extend the tests of controls and the disclosures of RMM. The hypothesis is as follows:

H3 (b): *There is a positive association between managerial ownership and the disclosures of risks of material misstatement.*

3.4 Study Two: The association between audit fees, non-audit fees, and the extended auditor's report on U.K. listed companies

3.4.1 Audit fees

The risks of material misstatement are assessed by the auditor based on evidence gathered from the firm. Some firms have high agency problems, where managers engage in activities that do not maximize the value of shareholders' wealth. Gul and Tsui (1997) argue that, in such a situation, managers of these firms are expected to mask non-optimal expenditures by accounting manipulation. In addition, managers of firms with low agency problems (1) are more likely to deliver better financial performance (Agrawal & Knoeber, 1996; Jain & Kini,

1994; Lambert & Larcker, 1987; Lewellen et al., 1985; Loderer & Martin, 1997; Mehran, 1995), (2) are less likely to commit fraud (Beasley, 1996; McMullen, 1996; Sharma, 2004), and (3) are more likely provide more information to stakeholders (Forker, 1992; Leftwich et al., 1981; Warfield et al., 1995). The above studies suggest that in firms with low agency problems, there is less incentive for managers to engage in opportunism.

An audit, in this respect, is one type of monitoring mechanism that can limit the self-interest and opportunistic behavior by the agent (Nikkinen & Sahlström, 2004) and audit fees are a function of client size, internal controls weakness, and financial restatements (Seetharamana, Gul, & Lynn, 2002; Simunic, 1980). Auditors are considered as monitoring mechanism over opportunistic behavior by the agent because they have (1) a significant role in increasing confidence and trust in financial reports (Gay & Simnet, 2015); and (2) the ability to identify business risks, advise on weaknesses of internal control, and report irregularities (IAASB, 2009c). It is expected that with such power, auditors reduce agency problem. Nikkinen and Sahlström (2004) support this and find that audit fees and firm agency problem are linked.

If auditors including audit fees are viewed as a monitoring mechanism over the manager behavior, it is then acceptable to argue that audit fees have an association with problems in the financial statements. For example, Geiger and Rama (2003) study the consequences of (1) auditors receiving limited information about the company, and (2) management not maintaining accounting principles on audit fees. They, therefore, provide strong evidence for a positive relationship between a qualified audit opinion and the level of audit fees paid by an audit client. This is supported by Lim and Tan (2008) who find a positive association between the issuance of going-concern opinions and audit fees. Ratzinger-Sakel (2013) also argues that firms with going concern audit opinion, auditors extend their work, hence charge more fees as such firms are risky. In addition, from the pricing model, risky firms increase audit fees (Beatty,

1993; Bell et al. 2001; Firth, 2002; Francis, 1984; Francis & Simon, 1987; Kida, 1980; Palmrose, 1986).

It follows from their argument that auditors charge more (1) for firms that do not prepare and present the financial statements in compliance with accounting standards, because International Standards in Auditing No. 700 (ISA700.11) states that (a) the financial report is prepared, in all material respects, in accordance with the requirements of the applicable financial reporting framework; (b) the accounting estimates made by management are reasonable; and (c) the information presented in the financial statements is relevant, reliable, comparable, and understandable (IAASB, 2009d) and (2) for firms that deliver misleading financial statements. This is because paragraphs 8 and 9 of International Standards in Auditing No. 705 (ISA 705.08.09) declare that financial statements should provide a true and fair view where the auditors believe that the financial report taken as a whole is not misleading and/or the auditor is able to obtain significant appreciate audit evidence on financial statements (IAASB, 2009e).

A number of studies examine the relationship between audit fees and financial statements with restatements and fraud. In general, it is argued that auditors will charge more in firms that have weakness in internal control. For example, Blankley et al. (2012) and Li and Lin (2005) find audit fees are high in firms that have restated their financial statements. Sharma (2004) shows that auditors charge more in firms that had fraud cases. In addition, audit fees increase in firms with weakness in internal controls (Hogan & Wilkins, 2008; Hoitash et al., 2008; Raghunandan & Rama, 2006). Furthermore, the level of audit fees paid by audit client is high in firms that have high levels of business risk (Bell et al., 2001; Mavin, 2005; Venkataraman et al., 2008). Lastly, Gutierrez et al. (2016), and Li et al. (2018) find that audit fees increase in firms that adopt the new auditing standard (i.e., *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements*) that requires the auditor to provide additional information on his/her report about the audit (FRC, 2013a).

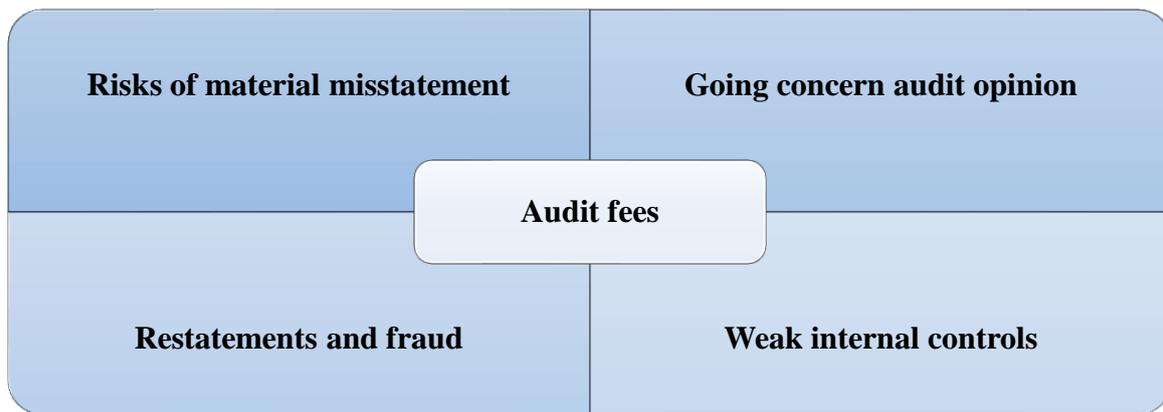


Figure 3.3 Diagram of the relationship between the risks of material misstatement and audit fees

This figure shows that going concern audit opinion, restatement and fraud, and weakness in the internal control cases are found to increase audit fees. Therefore, it is expected that the risks of material misstatement will also increase audit fees as these cases are a part of the risks of material misstatement.

Based on such theoretical predications and coupled with empirical evidence, this thesis argues that in firms with higher risks of material misstatement, more fees are charged by auditors, which leads to the following hypothesis:

H1 (a): *There is a positive association between the risks of material misstatement and audit fees.*

3.4.2 Non-audit service fees

An audit has a strong role in monitoring managers' behavior (Nikkinen & Sahlström, 2004). Auditors are required to conduct an audit and form an opinion on whether the financial report is prepared, in all material respects, in accordance with an applicable financial reporting framework and whether the financial report taken as a whole is free of material misstatement (ISA 200.11). Auditors also have the right to ask the manager to amend the financial report

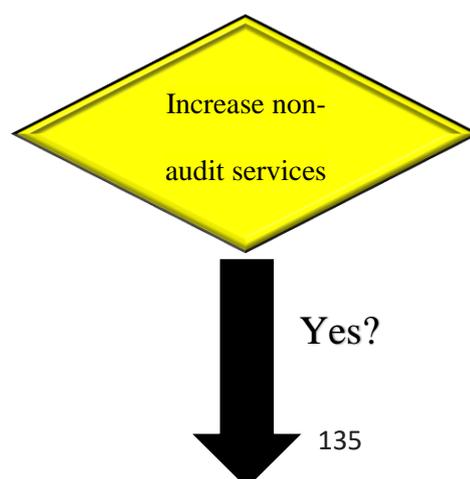
when there are events subsequent to the date of the auditor's report (Gay & Simnett, 2015). During the audit, auditors also identify business risks, advice on weaknesses of internal control, and report irregularities (IAASB, 2009c). These auditors' activities are more likely to reduce agency problems (Nikkinen & Sahlström, 2004), hence protect investor's wealth (Francis et al., 2003). However, corporate scandals are sometimes linked to the auditor's negligence or involvement. For example, in the case of Enron, the auditors performed both the internal and the external audits.

There are many factors that can influence auditor's ethics including auditor independence. Specifically, there are some activities that can put auditor independence at risk (Harris, 2014). For example, non-audit service is one of the activities that threatens auditor independence. This is specifically when auditors increase reliance on the firm in terms of generating revenue. This threat is recognized by Corporate Laws Amendment Act 26 of 2005 ('the Act') Section 40 stating that "The danger in offering non-audit services is that this may result in a conflict between the auditor's duty to provide an objective auditor's report and the possibility of retaining consulting or non-audit services". In addition, utilizing dependency theory framework, when less developed groups use the more developed groups to buy their main resources, the less developed groups will then economically dependent on more developed groups. As such, the more developed groups would gain control over the formulation of economic policy in less developed groups (Ahiakpor, 1985). With the case of non-audit services, auditors may rely on auditee to generate revenue, which in turn auditee would gain control over the audit.

As a result, it is expected that auditors are more likely to waive the judgment once they are financially dependent on the firm (Wright & Wright, 1997), and hence less willing to stand up and monitor the management (Carmichael & Swieringa, 1968). Management also may put pressure on auditors (Wines, 1994), and in turn auditors may not disclose any such breach

discovered during an audit engagement (Watts & Zimmerman 1986). Previous studies provide empirical evidence of how non-audit services affect auditor independence. For example, Basioudis et al. (2008), Sharma (2001), and Sharma and Sidhu (2001) find a negative association between audit qualified report and non-audit service fees. In addition, firms with financial restatements pay higher fees for non-audit services (Bloomfield & Shackman, 2008; Kinney et al., 2004).

Furthermore, previous studies argue that non-audit services develop some kind of a relationship between the auditors and the management. If auditors lose their independence when there are high non-audit fees, it is more likely that auditor changes will be less frequent (Barkess & Simnett, 1994; DeBerg, Kaplan, & Pany, 1991; Hay, Knechel, & Li, 2006). In other words, a positive relationship is predicted between high non-audit services and longer auditor tenure. Beck, Frecka, and Solomon (1988) support this argument by providing evidence on the positive linkage between the longer auditor tenure and high levels of non-audit services. Likewise, Dee, Lulseged, and Nowlin (2002) examine the association between earnings management and non-audit services fees. After controlling for variables known to be related to earnings management, their results show that firms paying high proportions of non-audit fees have income-increasing discretionary and total accruals. Their results suggest that auditors of such firms waive their judgment and not to report the income-increasing earnings management.



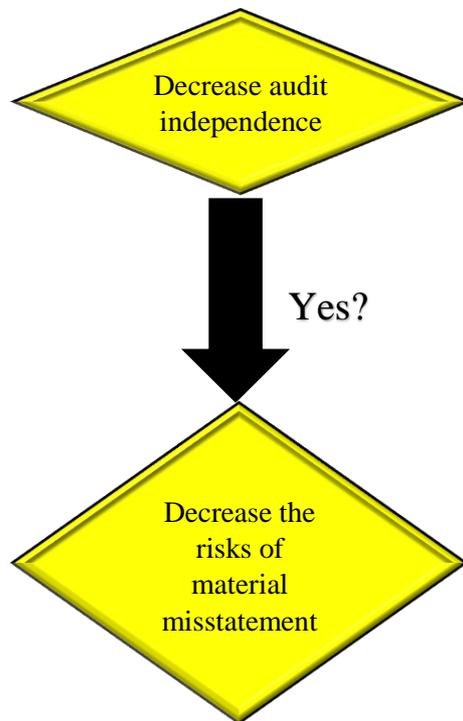


Figure 3.4 Flow Diagram of the relationship between the risks of material misstatement and non-audit services fees

Figure 3.4 is the flowchart that outlines the relationship between non-audit services fees and the risks of material misstatement in the extended auditor's report. It shows that increasing non-audit services fees could put auditor independence at risk. If this is the case, an auditor is more likely to waive his/her judgment, hence less risks of material misstatement.

Based on such theoretical predications and coupled with empirical evidence, this thesis argues that the more non-audit service fees are paid to the auditors, the less auditors report RMM which leads to the following hypothesis:

H1 (b): *There is a negative association between the risks of material misstatement and non-audit service fees.*

3.5 Study Three: Auditing standards, increased accounting disclosures, and information asymmetry in the market for the firm's stock: Evidence from the U.K. listed companies

Researchers hold that both voluntary and mandatory disclosures including accounting and auditor's disclosures should result in thicker markets³⁵ (e.g., Gonedes, 1980; Greenstein & Sami, 1994; Verrecchia, 1982). This is, for example, when managers decide to provide little information, the trading behavior amongst investors will differ, hence the stock would become illiquid (Black, 1971). As a result, investors would become less interested in buying such shares. To overcome the reluctance of potential investors to hold firm's shares in illiquid markets, managers may decide to provide a discount on the firm shares to attract investors and this in turn will increase firm's cost of equity (Leuz & Verrecchia, 2000). However, if managers decide to provide all information to informed and uninformed investors, the information gap is reduced, and the trading becomes more immediate. Therefore, the shares become more liquid and the managers are less likely to provide a discount.

Based on the above discussion, it is expected that firms that provide fewer disclosures have higher levels of information asymmetry, less liquid shares, and hence, higher firm's cost of equity. For example, Copeland and Galai (1983), Glosten and Milgrom (1985), Jaffe and Winkler (1976), and Venkatesh and Chiang (1986) show how bid-ask spread (a proxy of stock liquidity) is significantly negatively correlated with information asymmetry. They find that the bid-ask spread is high in firms that have a higher level of information asymmetry. This recommends that the shares of such firms have less liquidity as a result of increasing

³⁵ Thicker markets refer to smaller bid-ask spreads and greater liquidity of securities. The term "thicker markets" is widely used in the area of accounting disclosures and market microstructure studies (e.g., Greenstein & Sami, 1994; Lev, 1988).

information asymmetry. Non-routine information announcements and voluntary disclosures are also found to affect information asymmetry as such information reduces bid-ask spread, hence this improves stock liquidity (Balakrishnan et al., 2014; Bushman & Indjejikian, 1995; Schoenfeld, 2017).

A number of studies provide evidence that voluntary and mandatory disclosures including the disclosures of SEC's segment can affect stock liquidity. For example, Boone (1998), Greenstein and Sami (1994), and Sabet and Heaney (2015) state that the bid-ask spread is lower after the disclosures of an acquisition of reserves and disclosures of the discounted present value of oil and gas reserves. Mandated cash flow disclosures also influence the information asymmetry component in the market as Frino and Jones (2005) find disclosures of operating cash flow (OCF) are associated with a decline in bid-ask spread. It is also found that firms with stronger investor protection (more transparent environment) have better stock liquidity (Ali et al., 2017; Brockman & Chung, 2003; Chung et al., 2010; Foo & Zain, 2010; Lei et al., 2013; Li et al., 2012; Prommin et al., 2014). In addition, a number of studies argue that the mechanisms of insider and institutional ownership can affect stock market liquidity (Sarin, Shastri, & Shastri, 1998; Bhide, 1999). This is because such a mechanism reduces agency problems between managers and shareholders via giving agents the right to hold firm shares, and therefore, align agents' interests with those of the company's shareholder. As such, information asymmetry is reduced (Gonedes, 1980) increasing the stock liquidity of firms. For example, Fehle (2004) argues about the negative association between ownership and bid-ask spreads. Similar to this study, Fehle (2004) estimates feasible generalized least squares (FGLS) and finds that bid-ask spreads decrease in firms with higher levels of ownership. In Thailand, Gorkittisunthorn, Jumreornvong, and Limpaphayomc (2006) provide similar results about the influence of ownership as a monitoring mechanism over managerial opportunism on the information asymmetry across market participants. They find that bid-ask spreads decrease in

firms with insider ownership. In the U.S., bid-ask spreads are also found to be significantly negatively related to the level of institutional ownership (Barabanov & McNamara, 2002). Lastly, trading volume as a proxy to measure stock market liquidity is also linked to information asymmetry. This is because when investors find the information gap, they would become less interested in trading which results in lower trading in stock (Merton, 1987). This is observed by a number of studies that find that shares with a high trading volume have a low level of information asymmetry (Bartov & Bodnar, 1996; Chae, 2005; Glosten & Milgrom, 1985; Hasbrouck, 1988; Karpoff, 1986; Yoon et al., 2011).

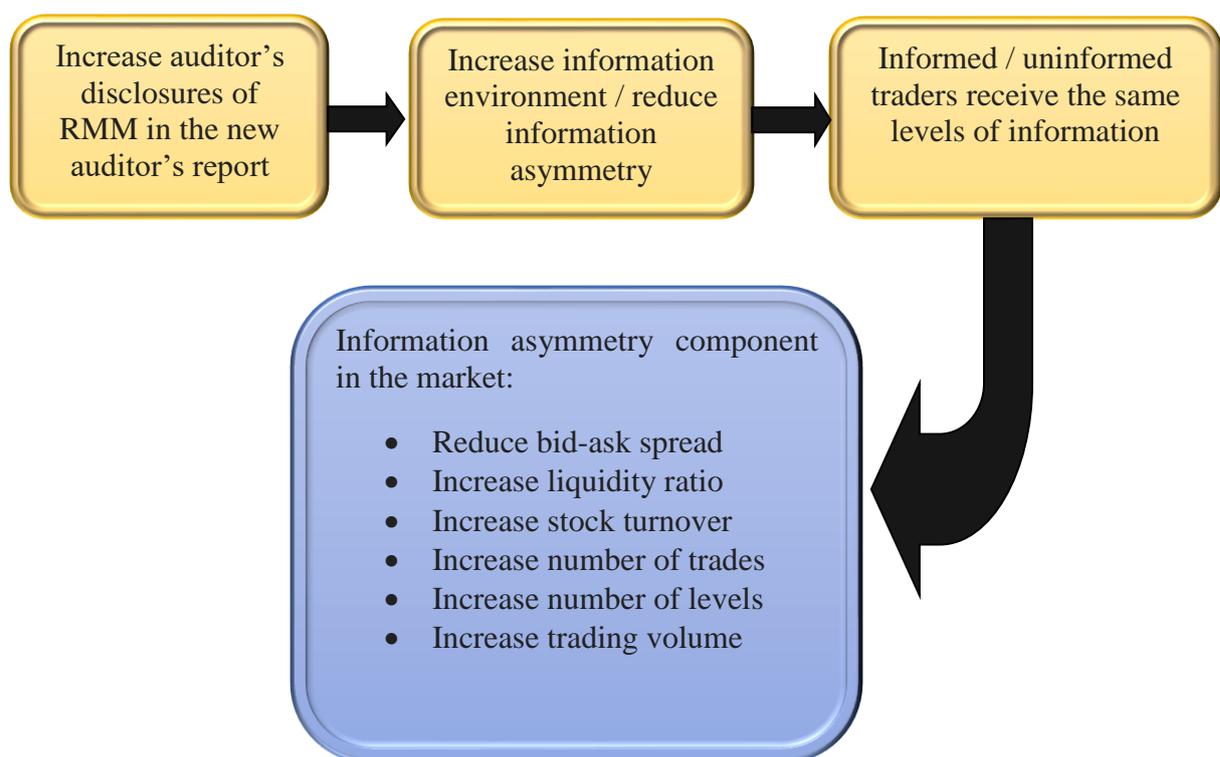


Figure 3.5 Diagram of the relationship between the disclosures of risks of material misstatement and information asymmetry component in the market

Figure 3.5 is the flowchart that outlines the relationship between auditor's disclosures of the risks of material misstatement in the extended auditor's report and information asymmetry in

the market for the firm's stock. It shows that when the auditor increases the disclosures of RMM in his/her extended report, the firm information environment would be richer and, hence, investors may have the same levels of information. If this is the case, then via the information environment, the stock would become more liquid. Table 3.1 provides a summary of the thesis's research questions and corresponding hypotheses.

Overall, the above studies provide evidence about the positive relationship between accounting disclosures and market microstructure (i.e., lower information asymmetry or greater stock liquidity). Based on the above discussion, this research expects a negative relationship between the disclosures of risks of material misstatement in the extended auditor's report and the information asymmetry in the market for the firm's stock.

H1. *All else being equal, there is a positive association between the disclosures of risks of material misstatement and stock liquidity.*

Table 3.1 Research questions and corresponding hypotheses

<i>What are the factors that influence the levels of auditor's disclosures in relation to the risks of material misstatement and materiality and the consequences of such disclosures on audit and auditee firms, and on information asymmetry in the market the firm's stock?</i>		
Research questions	Study	Hypotheses
(1) What are the determinants of auditor's disclosures in relation to the risks of material misstatement and audit materiality in the extended auditor's report?	Study One	<p>Internal corporate governance and the disclosures of risks of material misstatement: H1 (a): <i>There is a positive association between the strength of corporate governance and the disclosures of risks of material misstatement.</i></p> <p>Internal corporate governance and Audit materiality: H1 (b): <i>There is a positive association between the strength of corporate governance and the materiality level.</i></p>
		<p>Firm characteristics and the disclosures of risks of material misstatement and materiality Level: (H2) H2 (a): <i>There is a positive association between firm size and the disclosures of risks of material misstatement.</i> H2 (b): <i>There is a negative association between firm financial performance and the disclosures of risks of material misstatement.</i> H2 (c): <i>There is a negative association between a client's tangible assets and the disclosures of risks of material misstatement.</i> H2 (d): <i>There is a positive association between a client's rate of sales growth and the disclosures of risks of material misstatement.</i> H2 (e): <i>There is a positive association between the proportions of inventory and accounts receivable to total assets and the disclosures of risks of material misstatement.</i> H2 (f): <i>There is a nonlinear association between leverage and the disclosures of risks of material misstatement.</i> H2 (g): <i>There is a positive association between the complexity of a firm and the disclosures of risks of material misstatement.</i> H2 (h): <i>The level of audit materiality (i) increases in large and profitable firms, and with leverage and (ii) decreases in firms with a high rate of sales growth, a large proportion of accounts receivable and inventory, and in complex firms.</i></p>
		<p>Ownership structure and the disclosures of risks of material misstatement: (H3) H3 (a): <i>There is a positive association between institutional ownership and the disclosures of risks of material misstatement.</i> H3 (b): <i>There is a positive association between managerial ownership and the disclosures of risks of material misstatement.</i></p>
(2) What are the influences of auditor's disclosures of the risks of material misstatement upon the audit and auditee firms?	Study Two	<p>H1 (a): <i>There is a positive association between the risks of material misstatement and audit fees.</i></p> <p>H1 (b): <i>There is a negative association between the risks of material misstatement and non-audit services fees.</i></p>
(3) What are the influences of auditor's disclosures of the risks of material misstatement upon information asymmetry in the market for firm's stock?	Study Three	<p>H1: <i>All else being equal, there is a positive association between the disclosures of risks of material misstatement and stock liquidity.</i></p>

3.6 Chapter summary and conclusion

This chapter has developed the research hypotheses to discuss and clarify the questions that need to be tested. The research hypotheses have been formulated based on a literature review and theoretical frameworks in the areas of agency theory, resource dependence theory, prospect theory, utility theory, information asymmetry, and accounting disclosures research (Section 3.2).

In this chapter, Section 3.3 has developed three main testable hypotheses based on theories in literature to address the influence of a firm's internal and external corporate governance, and firm characteristics on auditor's judgment in relation to the disclosures of risks of material misstatement and materiality level. In this section, the current research expects that the elements of corporate governance (the absence of the CEO duality, board independence, and effective audit and nomination committees) increase the effectiveness of a firm's internal control, hence auditors increase the disclosures of RMM. This section also argues that firms with such elements, auditors increase thresholds for materiality due to lower audit risk. With regards to key firm-specific factors, this research hypothesizes that influence of the risks of material misstatement disclosures and materiality will increase with: large firms, lower profitability, higher rate of sales growth, larger asset structure, leveraged firms, and complex firms.

Regarding how audit and auditee firms respond to RMM, Section 3.4 has developed two testable hypotheses based on theories in literature to address the relationship between the RMM and audit and non-audit services fees. In this section, the current research expects that high audit fees are positively associated with high firm's risks of material misstatement and non-audit services fees are negatively associated with such risks of material misstatement. Section 3.5 was for Study Three. One main testable hypothesis based on theories in literature has been developed to address the relationship between the disclosures of risks of material misstatement

and information asymmetry in the market for the firm's stock. In this regard, Study Three hypothesises that the auditor's disclosures of the risks of material misstatement provide investors with "value relevant information" and this should reduce the information asymmetry component in the market. Specifically, the disclosures of risks of material misstatement should lower trading cost, lower price impact, and increase stock immediately.

CHAPTER 4: RESEARCH METHODOLOGY AND DATA SOURCES

4.1 Introduction

The first objective of this thesis is to investigate the determinants that contribute to change the level of auditor's disclosures and audit materiality between 2014 and 2016 using factors related to internal and external corporate governance including firm characteristics. The second objective of this thesis is to investigate the consequences of auditor's disclosures on (1) how audit firms respond to the risks of material misstatement and (2) how auditee firms respond to the risks of material misstatement. This is done by investigating the linkage between audit fees, non-audit fees, and risks of material misstatement. Additionally, this thesis is extended by investigating the consequences of auditor's disclosures on the information asymmetry across market participants (third objective). Specifically, it investigates how the disclosures of risks of material misstatement in the new auditor's report influence the capital market's participants (e.g., investors) decisions in the long run.

This chapter discusses the methodology for the thesis (4.2.1 - 4.2.3). Subsection 4.3.1 discusses the sample size and sample selection including its procedure, sample period, and a description of where the data are gathered. This is followed by a discussion on the definition and measurement of dependents, the treatment and control variables based on previous studies. Subsection 4.3.1 shows the models and methodology adopted in Study One to investigate the determinants of auditor's disclosures using ordinary least squares and random-effects models. These structures are also adapted for Study Two (Section 4.3) and Study Three (Section 4.4).

4.2 Overview of research design

4.2.1 Research paradigm

Research is defined as the process by which a researcher studies and analyzes the situational factors that surround the problem or area of interest with the intention to develop a solution

(Cavana, Delahaye, & Sekaran, 2001). Research paradigm is defined “an integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools” (Kuhn, 1962, p. 33). Guba and Lincoln (1994) define paradigm as “a basic belief system or worldview that guides researchers and deals with ultimate or first principles”. This research on auditor’s judgment seeks to establish the influence of corporate governance, firm characteristics, and ownership on auditor’s judgment in relation to the disclosures of risks of material misstatement and to audit materiality. In addition, it aims to examine the consequences of auditor’s disclosures on total audit fees including audit fees and non-audit services fees. Furthermore, this research on auditor’s judgment seeks to establish consequences of auditor’s disclosures on market microstructure (i.e., information asymmetry or stock liquidity). These examinations are in a real situation and based on numerical data.

The current research then adopted one of the research paradigms that helps the researcher to understand and answer the research questions (Johnson & Onwuegbuzie, 2004). There are four popular research paradigms: critical theorist, critical realist, constructivist and positivist (Guba & Lincoln, 1994; Perry, Riege, & Brown, 1998). First, critical theory paradigm is a critical and action-oriented approach towards research. The researcher seeks to critique ideologies and knowledge in extant theory by creating new contradicting knowledge on the subject. Critical response considers the ideology that people operate under set social structures, which define reality as inaccurate (Creswell, 2013). Critical theorists disagree with the chasm created between subjective-objective paradoxes, claiming that it is a socially contrived problem and not one that exists as a natural fact. Critical theory combines observation and interviews with other reflective dialogic to create the natural state and contradict typical research behavior (Creswell, 2013). Critical theorists strongly believe that good research involves understanding concepts and justifying published works by the researcher.

Second, critical realist paradigm is an approach based on the assumption that there is an objective reality and that humans are the imperfect knower. The paradigm assumes that the human ability is limited and that only by wide critical examination can humans gain the best and accurate understanding of reality (Creswell, 2013). The paradigm also assumes that the researcher cannot be free from personal bias as there is no distinction between the investigator and the subject of interest, which means that objectivity is an ideal that can only be achieved by a well-planned research procedure and application of the right research techniques. Such a research would require a natural setting where collection of contextual data is possible (Mertens, 2014).

Third, constructivist or interpretivist paradigm refers to the paradigm where each researcher takes views from different sources across different disciplines. The paradigm assumes that reality is a construction of inter-subjectivity obtained through social norms and experimentations (Creswell, 2013). It assumes that social reality only adds value when observed through the researcher's own eyes. Like realism, the paradigm also assumes that a researcher cannot be free from personal bias as there is no distinction between the investigator and the subject of interest (Zikmund, Babin, Carr, & Griffin, 2013). Therefore, the researcher's personal beliefs are manifested throughout the research process. Morality and pragmatism are important aspects in any interpretive scientific evaluation as interpretations are momentary.

Lastly, positivism refers to the paradigm that seeks to confirm the validity of a given theory (Guba & Lincoln, 1994). Positivism is based on reason and observation as the only influences to coming up with true knowledge in an environmental setting (Perry, Alizadeh, & Riege, 1997). As such, positivistic thinkers generate knowledge based on scientific principles, frameworks and assumptions to enhance precision in the description of parameters and the relationship among them (Leedy & Ormrod, 2005).

This thesis adopts the positivism paradigm. This is because the positivism paradigm operates on four main assumptions, namely determinism, empiricism, parsimony and generalizability (Zikmund et al., 2013). First, determinism refers to situations where the topic of interest has a causal link with other issues. This creates a situation that requires the researcher to understand the causal relationship that exists to be able to predict or control the factor. This is consistent with the aim of this thesis as it investigates in depth the relationship between auditor's disclosures, corporate governance elements, total audit fees, and the stock liquidity of firms.

Second, empiricism is the assumption that the data collection process provides empirical evidence that supports or dispels scientific theories and hypotheses and this is in accordance with Chapter 3 of this thesis. Third, parsimony assumes that the best way to look at a phenomenon is the way that makes the most economic benefit (Zikmund et al., 2013). Lastly, generalizability, the most important assumption for positivists is the ability to generalize the findings from the particular study to have a global application.

Furthermore, positivism is used by the researcher as the ideal paradigm to offer the philosophical framework for a quantitative study. Therefore, this research focused mainly on positivism, not the other paradigms of realism, constructivism or critical theory. Realism paradigm would require a combination of both qualitative and quantitative methods. This approach is not appropriate for the current research as there is no consensus in social theories on corporate governance and its relationship with audit risks (Neuman, 2006). Additionally, it utilizes non-numerical data for qualitative interviews, which contradicts with this research study design. Likewise, constructivist paradigm would be inappropriate as it is based on objective reality and multiple knowledge claims, both of which would not advance a quantitative study design that the researcher intends to use for the current work. Finally, use of critical theorist paradigm would be difficult as the researchers are only interested in utilizing numerical data (Creswell, 2013).

4.2.2 Research approaches

The approach to research design is the reasoning that is used in conducting the research. There are three approaches in research design, namely deductive, inductive and abductive approaches (Peirce, 1931). This thesis follows the deductive approach. In deductive approach, the researcher develops a research hypothesis from extant theory and later designs a research strategy for testing the developed research hypothesis (Mertens, 2014). These steps have been applied in this study. In addition, the researcher is already given the rule and the cause, thus the researcher seeks to deduce the effect. Deductive approach was used as it provides general reason relating to a phenomenon from propositions made based on the hypothesis statement (Peirce, 1931). As indicated by Mertens (2014), deductive approach is more ideal when there exists an abundance of literature on a subject to develop a proposition from existing theory. Further, she points out that deduction is very powerful in generating new knowledge, with the researcher able to combine literature and data with observable reality to advance knowledge. Lastly, deductive approach is useful in making inferences from literature review on relevant studies.

Second, inductive approach is fundamentally different from deductive approach. It requires the researcher to start with investigations where he or she determines the patterns from observations after which theory development can follow (Bryman & Bell, 2015). There are no theories at the start of research, which allows greater flexibility for the researcher to determine the direction of the research and come up with multiple realities. However, this does not signal disregard for scientific theories (Bryman & Bell, 2015). This approach is ideal in new research areas where there is limited literature and the researcher has ample time to complete observations. The inductive approach's main drawback is that it is unbounded in scope, running

the risk of being too broad or losing validity. Further, there is no amount of data that can be enough to support acceptance of a theory (Vogt, 2007).

Lastly, abductive approach is not completely distinct from deductive or inductive approaches. It improves on the two approaches to provide the best prediction from observations. The abductive approach starts by identifying surprising or irregular facts in empirical phenomena not explained by existing theories and seeks to explain them (Saunders, Lewis, & Thornhill, 2012). The approach does not generalize but provides the best explanation from incomplete observation from sampling. Therefore, the researcher applies numerical and cognitive reasoning to predict the best solution. The approach is complex, but effective when the unexpected fact is dynamic, particularly for business (Bryman & Bell, 2015).

4.2.3 Research methodology

There are two distinct research methods that can be applied to research, namely quantitative and qualitative research. The other methodology – mixed research – combines quantitative and qualitative methods (Mertens, 2014). This current study used quantitative methods, which are defined as studying phenomena by collecting numerical data that are analyzed using mathematically based methods in particular statistics (Aliaga & Gunderson, 2002). In quantitative methods, the researcher tests theory from existing subjects (Cormack, 1991) using numerical data (Grove & Burns, 2005). Quantitative approach applies the statistical techniques and analysis such as descriptive, mean and median (Carson, Gilmore, Perry, & Gronhaug, 2001) to accurately measure and validate the relationship that exists between the variables to develop generalizations for theory development (Leedy & Ormrod, 2005). This should be one of quantitative research advantages since (1) the researcher does not become involved with the object of study; and (2) the researcher treats and gathers the data as it occurs since there is a

separation of the researcher from those researched which gives the results the ability to be easily generalized (Saglam & Milanova, 2013).

Quantitative approach was suitable for this study for several reasons. First, quantitative research is better suited to establish a definitive “cause and effect” relationship (Cavana et al., 2001). This research has analyzed the levels of auditor’s disclosures caused by corporate governance elements and the effect of such disclosures on total audit fees and the information asymmetry across market participants. In addition, to assess levels of auditor’s disclosures, this research has adopted key factors that would have caused the U.K. listed companies to engage in high/low levels of disclosures. This is in conjunction with a vast amount of literature to support the existence of a causal relationship between corporate governance and audit risks (Contessotto & Moroney, 2014; Turley & Zaman, 2014).

The second reason for quantitative research being better suited is that it has the ability to contain a large amount of data (Joy, 2007) which in turn presents rich information on the number of the U.K. listed companies engaging in high/low disclosures. For the research, a large dataset of U.K. firms was obtained. The large data set would provide reliable data that satisfies the requirement for validity associated with quantitative paradigms.

Additionally, the reason for using the quantitative approach is that it is the best-suited method to use when there has been more confirmatory than exploratory research (Katsirikou & Skiadas, 2010). There are already some theories and literature that discuss and provide evidence on the determinants of auditor’s disclosures and the impact of his/her disclosures on firm value. What was done in the current study, however was to look at the previous research, then compare the perspectives and the findings in attempts to confirm whether or not the results of this study were consistent with existing theories and literature.

As discussed previously, a number of firms in the U.K. have not adopted the new auditing standard. Hence, the use of this method was important because, as Joy (2007) says, this methodology allows some generalizations to be made from study's findings undertaken, given the fact that this method allows for a large collection of empirical data to increase our understanding about the determinants and the effects of auditor's disclosures (Östlund, Kidd, Wengström, & Rowa-Dewar, 2011).

4.3 Data and method for Study One

4.3.1 Sample selection

This thesis analyzed the FTSE 350 firms listed on the London Stock Market with a premium listing of equity shares over the period 2014 to 2016. The sample is limited to the top 350 U.K. listed companies because, unlike smaller U.K. entities and secondary listing(s) entities, large firms listed on the London Stock Exchange with a premium listing of equity shares are required to disclose the risks of material misstatement in the extended auditor's report (FRC, 2013a). This thesis focused on the U.K. setting because the U.K. is one of the earliest countries to have adopted *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements* which expands auditor's report. The sample period in this study covered in 2014 because this ISA 700 came into effect in the U.K. in 2013 (FRC, 2013a). This study period ended in 2016, thus allowing the author to explore the determinants of the risks of material misstatement disclosures and materiality level over a three-year period. Furthermore, the thesis's three-year sample period was long enough to capture the cross-section of corporate governance practices because they rarely change over time (Black, Jang, & Kim, 2006).

For analysis used in this research, the author required continuity of data over the sample period and hence excluded firms that were not in the FTSE 350 for all of the three years (2014-2016).

These requirements reduced the sample size from 350 to 322 firms. Thus, Study One had a balanced panel of 966 firm-year observations for analysis (322 firms*3 years). Unlike other studies on auditor's judgment that is, based on experiment (e.g., Cohen et al., 2007), this research used a balanced panel dataset that contains a greater degree of freedom and more sample variability, which in turn improves the efficiency of econometric estimates (Hsiao, 2007; Hsiao, Mountain, & Illman, 1995). Data on the disclosures of RMM and audit materiality level were hand-collected from 966 company annual reports. Financial statement variables were collected from Bloomberg database and ownership data were collected from Datastream database.

4.3.2 Variables definitions and measurements

4.3.2.1 Measurements of dependent variables

The first dependent variable in Study One is the auditor's disclosures of RMM (*RISK_JUDGE*). This variable takes alternative measure of auditor's judgment on RMM disclosures based on the total number of words used in the RMM disclosures (*WORDS*) and based on natural log of the total number of words used in the RMM disclosures in the extended auditor's report (*LN_WORDS*). Previous studies on social disclosures use the number of words as a proxy to assess the volume and amount of information disclosed in the annual reports (Campbell, Moore, & Shrives, 2006; Gray, Kouhy, & Lavers, 1995; Hackston & Milne, 1996; Krippendorff, 2012; Marston & Shrives, 1996; Yekini & Jallow, 2012). Longer disclosures of the risks of material misstatement are expected to be more informative (Lang & Stice-Lawrence, 2015).

However, a concern is raised by a number of researchers including Gutierrez et al. (2017), Köhler, Quick, and Willekens (2016), and Lang and Stice-Lawrence (2015) that annual report disclosures including the disclosures of risks of material misstatement in the extended audit's

report may be associated with the use of generic or boilerplate wording as boilerplate may provide opportunities to hide information, reducing overall informativeness (Hoogervost, 2013). In addition, if the new auditor's disclosures of RMM are boilerplate, the capital market would not be effected (Gray et al., 2011). In response to this, the U.K. Financial Reporting Council (FRC) provides evidence suggesting that a much greater proportion of risks are set out in a more meaningful and transparent way (FRC, 2016). Their results also indicate that auditors provide specific information about the audited entity, and avoid applying generic or boilerplate wording (FRC, 2016). In addition, the second dependent variable used in this study is the audit materiality level applied by the auditors in the extended auditor's report proxied by the natural log of materiality level (the total amount). Generally, the auditors apply low level of materiality when, for example, a firm has ineffective control (IAASB, 2004).

4.3.2.2 Measurements of independent variables

Based on extant studies on corporate governance and following the U.K. combined code of best practice recommendations, Study One focuses on ten individual measures of governance. These include variables related to board structure such as board size (*Bsize*), the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), CEO tenure (*CEOT*), woman as the board chair (*NWCH*), and the number of women on the board (*NFB*). The second set of corporate governance variables relates to the audit committee characteristics such as activity (*Active*), and independence of audit committee (*IAC*). The third set of variables is related to the nomination committee, such as the size of the nomination committee (*NCsize*) and the proportion of independent directors on nomination committee (*IDNC*).

Board size (*Bsize*) refers to the number of directors in the board including the board chair (Amran, Periasamy, & Zulkafli, 2014). The monitoring function is found to be greater in firms with larger boards (Lehn et al., 2009) because of its greater amount of collective information

(Dalton & Dalton, 2005). In addition, firms with a better performance have larger boards (Topal & Dogan, 2014; Xie & Fukumoto, 2013). Therefore, a positive coefficient is expected.

Proportion of non-executive directors (*NEX*) is related to board structure and used as an independent variable. Chahine and Filatotchev (2011) find that the number of the proportion of non-executive directors (*NEX*) increases the independence of the board as well as improves the quality of board monitoring (Jensen & Meckling, 1976). This is supported by Kaplan and Reishus (1990) who argue that because non-executive directors are independent from the managers, they have an effective role in monitoring managerial decisions.

If non-executive directors serve as a monitoring mechanism over opportunistic managerial behavior, it is expected that such mechanism strengthens a firm's internal control, hence less problems in the financial statements. This is supported by several studies. For example, fraud cases occur more often in firms with a lower proportion of outside directors (Seamer & Psaros, 2000; Sharma et al., 2008). In addition, bankruptcy cases occur more often in firms with fewer outside directors (Gilson, 1990). Since non-executive directors reduce agency problems between managers and shareholders, and reduce the likelihood of having problems in the financial statements, auditors are expected to assess audit risks as less than high resulting in auditor's extents tests of controls and disclosures (IAASB, 2009a). Based on the above findings and following the U.K. combined code of best practice recommendations, non-executive directors is added to corporate governance elements and a positive coefficient on the proportion of non-executive directors (*NEX*) is expected. The proportion of non-executive directors (*NEX*) is measured as the proportion of non-executive directors with respect to board size at the fiscal year-end.

Duality (*Duality*) occurs when both the board chair and the CEO roles are performed by the same person signaling greater CEO power. Duality (*Duality*) leads to greater problems in

financial statements (Beasley, 1996; Dechow, Sloan, et al., 1996). In addition, Sharma et al. (2008) find a positive relationship between duality and the likelihood of fraud. However, CEO duality has no influence on firm performance (e.g., Weir, et al., 2002), financial distress (e.g., Elloumi & Gueyie, 2001), and financial statements problems i.e., restatement (Abbott et al., 2012). Hence, Study One makes a non-directional hypothesis. Duality (*Duality*) is set equal to 1 if the two roles are held by the same individual and 0 otherwise.

CEO tenure (*CEOT*) refers to the number of years that a CEO has served a firm in that role. The issue is that a long-serving CEO would gain more power over the board, which increases the conflicts of interests between managers and shareholders which leads towards poor firm performance (Miller & Friesen, 1977). In other words, the long CEOs tenure can have an entrenchment effect and consolidate the CEO power over the board. If a long-serving CEO increases agency problems, it is then expected that firms with long-serving CEOs have ineffective internal control, hence more problems in the financial statements. This argument is supported by a number of researchers who study the relationship between longer serving CEOs and financial statement problems. For example, a positive linkage between longer serving CEOs and the likelihood of committing fraud (Rijsenbilt & Commandeur, 2013). In addition, there is a relationship between CEO turnover rates and irregularities and errors (Hennes et al., 2008). Therefore, this study assumes that firms have limited information environment when CEO tenure is long, and this reduces auditor's disclosures of RMM. Hence, a negative coefficient is predicted. CEO tenure (*CEOT*) is measured as the natural logarithm of CEO tenure.

Woman as the board chair (*NWCH*) refers to the presence of women in top management and equals to 1 if the chairperson is a female. It is suggested that women in top management positions are more likely to appoint women to their boards which lead to a better performance of the board (Smith, Smith, & Verner, 2006). With female board monitoring, a number of

studies find that (1) women on the board is a proxy for better monitors (Adams & Ferreira, 2009); (2) women on the board demands higher audit quality (Gul, Srinidhi, & Tsui, 2008); and (3) women on the board decreases the likelihood of restatement (Abbott et al., 2012). Thus, it is presumed in this study that firms with females on the board are more likely to have more disclosures of RMM. Women on the board is measured as the number of females with respect to board size at fiscal year-end (*NFB*).

The second set of variables is related to the audit committee. In firms with an effective audit committee, auditors assess the risks of material misstatement as less than high. If the risks of material misstatement are assessed as less than high, auditors must extend the tests of controls to support their judgment. Paragraph 7 of Auditing Standard No. 5 (AS 5.7) states that the objective of the tests of controls in an audit of internal control is to obtain evidence about the effectiveness of controls to support the auditor's opinion on the company's internal control over financial reporting (PCAOB, 2007). In addition, an effective audit committee decreases the likelihood of earnings manipulation, errors, and irregularities in financial statements (Dechow, Sloan, et al., 1996; McMullen, 1996). Based on these findings and following Adams and Ferreira (2009), audit committee is added to corporate governance elements and expected to increase the auditor's disclosures of RMM.

An effective audit committee is measured as follows: activity of the audit committee (*Active*), and the independence of audit committee (*IAC*). Activity of the audit committee (*Active*) refers to the number of meetings held by the given audit committee in a fiscal year. Abbott et al. (2000) find that fraudulent or misleading reporting is less likely to occur in firms that hold active audit committees. Thus, it is presumed that firms with a high number of audit committee meetings are more likely to have more disclosures of RMM, and higher amounts of materiality as activity audit committee reduce audit risk, hence auditors extend the tests of controls and the disclosures of RMM. The independence of audit committee (*IAC*) refers to the number of

independent directors on a given audit committee. It is observed that the probability that the auditors issue a going-concern opinion is lower in firms with a more independent audit committee (Carcello & Neal, 2003). It is measured as the number of independent directors on the given audit committee board at fiscal year-end.

The last set of variables is related to the nomination committee. This set of variables is based on the U.K. Combined Code, which emphasizes that firms should adopt an effective nomination committee with a majority of independent directors. The nomination committee has an important role in evaluating the board and nominating new directors to the board in a way which best serves stakeholders' interests (McKnight & Weir, 2009). Hence, it is presumed that firms with an effective nomination committee are more likely to have higher disclosures of RMM and materiality. An effective nomination committee is measured as follows: the size of the nomination committee (*NCsize*) is measured as the number of directors on a given nomination committee at fiscal year-end, while the proportion of independent directors on nomination committee (*IDNC*) is measured as the proportion of independent directors on the given nomination committee at fiscal year-end.

Study One also includes seven firm characteristics as independent variables to examine the effect of these characteristics on auditor's judgment in relation to RMM disclosures and audit materiality including firm size (*Ln_Fsize*), profitability (*ROA & LN_COM*), tangible assets (*PPE*), rate of sales growth (*Growth*), the proportions of inventory and accounts receivable to total assets (*INVE_RI & RICE_RI*), firm leverage (*LEV*), and firm complexity (*COMLX*).

Firm size is measured using different proxies (Giroud & Mueller, 2010). However, the most consistent and widely used proxy is total assets (Kent & Stewart, 2008). Following Kent and Stewart (2008), firm size in this study is measured as the natural logarithm of total assets

(*Ln_Fsize*). Study One predicts that firm size positively affects RMM disclosures because Goodwin-Stewart and Kent (2006) show that agency risk occurs more in large firms.

ROA and *LN_COM* are used to measure profitability of a firm. Kreutzfeldt and Wallace (1986) find a negative link between low profits and more financial statement errors. Hence, this study expects that firms with low profits are more likely to have more RMM disclosures, and less materiality. In this study, *LN_COM* is measured as the natural logarithm of net income while *ROA* measured as net income divided by average total common equity at fiscal year-end.

Tangible assets (*PPE*) refer to net property, plant and equipment at fiscal year-end. It is argued that intangible assets are linked to a weaker monitoring role (Hackston & Milne, 1996). This is because the worth of the intangible assets cannot be easily determined (Suh & Han, 2003). Therefore, it is expected that firms with larger amounts of tangible assets are more likely to have lower levels of RMM disclosures. Rate of sales growth (*Growth*) is calculated as the rate in sales over the previous fiscal year minus one. Study One predicts a positive coefficient on rate of growth (*Growth*) because high rates of growth are associated with audit failure, audit risk, and fraud cases (Hylas & Ashton, 1982; Pratt & Stice, 1994; Sharma, 2004).

Asset structure includes the proportion of inventory (*INVE_RI*) and the proportion of accounts receivable (*RICE_RI*) to total assets. These accounts contain most of the errors (St. Pierre & Anderson, 1984) and these accounts require greater auditor's judgment as the value of these accounts are associated with complicated estimations and recognitions (Francis & Simon, 1987; Pratt & Stice, 1994). Therefore, a positive coefficient is expected.

Firm leverage (*LEV*) is the ratio of debt to total assets and used to measure the company's indebtedness. Debt decreases agency costs by giving debt-holders a greater monitoring role over managers (Jensen & Meckling, 1976). However, firms with "too much" debt are more likely to face going concern audit opinion (DeFond et al., 2002). In addition, Chen et al. (2006)

and Sharma (2004) find no linkage between fraud and leverage. Therefore, this study expects a nonlinear association between debt levels, RMM disclosures, and the materiality.

With firm complexity (*COMLX*), it is reasonable to assume that the likelihood of having more audit risks is related more to firms with complexity than with less complex firms. Therefore, a positive coefficient is expected. Number of subsidiaries, number of available shares, and number of foreign subsidiaries are the most frequent measures of complexity used (e.g., Audousset-Coulier, 2015; Hay, 2013; Hay, Knechel, & Wong, 2006).

The relationship between ownership structure and auditor's judgment in relation to the levels of RMM disclosures and audit materiality is also examined. Ownership structure includes ownership of institutions and managers of the firm. Institutional ownership (*OUT_SR*) refers to the amount of common equity held by institutions in millions. It is argued that a large institutional shareholder provides shareholders with a greater monitoring role over managers (Gillan & Starks, 2000). This role, therefore, should reduce the issues of the agency cost, thus less information asymmetry, and financial statement problems such as (a) earnings management, (b) going concern audit opinion, and (c) the likelihood of fraud. All of these issues are negatively related to institutional shareholders (Abbott et al., 2000; Blay et al., 2016; Kurawa & Abdulrahman, 2014).

Measured by the amount of common equity held by managers of the firm in millions, managerial ownership (*IN_SR*) is the second independent variable that is related to the ownership structure. Managerial ownership, for example, decreases managerial opportunism (Jensen & Meckling, 1976), and increases firm performance measured by ROA and Tobin's Q (Chen & Yu, 2012; Fahlenbrach & Stulz, 2009). Based on the above arguments, ownership including ownership of institutions and managers of the firm is expected to have a positive effect on the disclosures of RMM and audit materiality. The definitions of the variables are summarized in Table 4.1.

Table 4.1 Variables definitions for Study One

Variable name	Acronym	Definition and measurement
Dependent variables		
Auditor's judgment	<i>RISK_JUDGE</i>	
RMM disclosures	<i>WORDS</i>	The total number of words in RMM disclosures
Log of RMM disclosures	<i>LN_WORDS</i>	Natural logarithm of the total number of words in RMM disclosures
Per risk	<i>PER_RISK</i>	Number of words used in per risk
Materiality level	<i>MAT</i>	Total amounts set by auditors
Log of materiality level	<i>LN_MAT</i>	Natural logarithm of the total amounts set by the auditor
Independent variables		
Board size	<i>Bsize</i>	Total number of directors on firm board
Non-executive directors	<i>NEX</i>	Percentage of non-executive directors with respect to board size
Duality	<i>Duality</i>	A dummy variable that takes the value '1' if CEO serves as chairperson, otherwise 0
CEO tenure	<i>CEOT</i>	Natural logarithm of number of years CEO has served in the given firm as an executive director
Woman as chair	<i>NWCH</i>	A dummy variable that takes the value '1' if woman serves as board chair, otherwise 0
Female on board	<i>NFB</i>	The number of women with respect to board size
Activity of audit committee	<i>Active</i>	Total number of meetings held by audit committee per year
Independence of audit committee	<i>IAC</i>	The number of independent directors on the given audit committee
Size of nomination committee	<i>NCsize</i>	The number of directors on the given nomination committee
Independent directors on nomination committee	<i>IDNC</i>	The proportion of independent directors on the given nomination committee
Firm size	<i>Ln_Fsize</i>	Natural logarithm of total assets at fiscal year-end
Profitability	<i>ROA</i>	Net income divided by average total common equity
	<i>LN_COM</i>	Natural logarithm of net income
Tangible assets	<i>PPE</i>	Net property, plant and equipment to total assets at fiscal year-end
Rate of growth	<i>Growth</i>	(Current sales / previous sales) - 1
Asset structure	<i>INVE_RI</i>	Ratio of inventory to total assets at fiscal year-end
	<i>RICE_RI</i>	Ratio of accounts receivable to total assets at fiscal year-end
Firm leverage	<i>LEV</i>	Ratio of total liabilities to total assets
Complexity	<i>COMLX</i>	The number of shares that are available for trading in billions
Institutional ownership	<i>OUT_SR</i>	The total number of shares held by institutions in millions
Managerial ownership	<i>IN_SR</i>	The total number of shares held by directors in millions

4.3.3 Empirical models

This study hypothesises that corporate governance mechanisms (board of directors and nomination and audit committees) positively influence the levels of the risks of material misstatement disclosures (H1 (a)). To test this, Study One employs random-effects (RE) regression as a main and employs pooled ordinary least square (OLS) to make a comparison of results. While this study is a causal relation between corporate governance mechanisms and auditor's disclosures, RE is more suitable for such an approach. In addition, the random-effects model is an efficient tool in this study because (1) the mechanisms of corporate governance used in this study are uncorrelated to the other covariates of the model; (2) the observations in this study are obtained over multiple time periods for the same firms; and (3) the data in this thesis is normally distributed³⁶ (Verbeek & Nijman, 1992). In doing so, this thesis proposes Equation 4.1:

$$\begin{aligned} RISK_JUDGE_{it} &= \alpha_0 + \alpha_1 CGC_{it} + \alpha_2 FC_{it} + \alpha_3 OSC_{it} + Year\ dummies \\ &+ Industry\ dummies + \varepsilon_{1it} \end{aligned} \tag{4.1}$$

where *RISK_JUDGE* takes alternative measures of auditor's judgment on RMM disclosures based on the total number of words used in the RMM disclosures (*WORDS*) and based on natural log of the total number of words used in the RMM disclosures in the extended auditor's report (*LN_WORDS*). All variables are defined in Table 4.1.

³⁶ See Figures 5.2 and 5.3 in Chapter 5.

Next, Equation 4.2 presents the impact of firm characteristics on the materiality levels set by the auditor in planning an audit work (LN_MAT_{it}):

$$LN_MAT_{it} = \partial_0 + \partial_1 CGC_{it} + \partial_2 FC_{it} + \partial_3 OSC_{it} + Year\ dummies \\ + Industry\ dummies + \varepsilon_{1it} \quad (4.2)$$

where $\varepsilon_{2it} = LN_MAT_{it} - \widehat{LN_MAT}_{it}$

In Equation 4.2, LN_MAT_{it} is the materiality level and proxied by the natural log of the total amounts set by the auditor in the new auditor's report for the financial report as a whole. In Equations 4.1 and 4.2, CGC_{it} is a set of variables measuring corporate governance characteristics of firm i , including board size ($Bsize$), the proportion of non-executive directors (NEX), duality ($Duality$), CEO tenure ($CEOT$), woman as chair ($NWCH$), female on the board (NFB), activity of audit committee ($Active$), independence of audit committee (IAC), the size of nomination committee ($NCsize$), and independent directors on nomination committee ($IDNC$). FC_{it} is a set of variables of firm characteristics, including firm size (Ln_Fsize), profitability (ROA & LN_COM), tangible assets (PPE), rate of sales growth ($Growth$), the ratios of inventory and accounts receivable to total assets ($INVE_RI$ & $RICE_RI$), firm leverage (LEV), and firm complexity ($COMLX$). OSC_{it} is a set of variables of firm ownership, including institutional shareholders (OUT_SR), and inside ownership (IN_SR). The index i denotes individual firm-year observations ($i = 1, 2, \dots, 966$), t denotes time period ($t = 2014, 2015, 2016$) in Equations 4.1 and 4.2. In Equation 4.1, α_0 is intercept, and $\alpha_1, \alpha_2, \alpha_3$ are parameters to be estimated. In Equation 4.2, ∂_0 is intercept, $\partial_1, \partial_2, \partial_3$ are parameters to be estimated, and $\varepsilon_{1it}, \varepsilon_{2it}$ are error terms in both equations.

4.4 Data and method for Study Two

4.4.1 Sample selection

The FRC issued a new auditing standard that came into effect in the U.K. in 2013. Hence, the sample period of Study Two began in 2014. This study period ended in 2016, thus this multiple-years setting allows the author of this thesis to explore more potential effect of the auditor's reporting model on audit and non-audit services fees. To construct this study, secondary sources were used. Data related to the risks of material misstatement were manually collected from firm annual reports. In regards to data on audit and non-audit services fees, these were collected from Bloomberg database. In addition, data related to the control variables were used in this study; these were collected from Datastream, and Audit Analytics.

In this study, a sample of 350 companies was selected from the study population in the United Kingdom. The sample consists of all listed firms on the London Stock Exchange with a premium listing of equity shares (FTSE 350). The use of this market was because the U.K. is one of the earliest countries to adopt the new auditor's reporting model. By comparison, the U.S. adopted the new auditor's report by the end of 2016 (PCAOB, 2017). Study Two excluded 14 firms as these firms were listed after March 2015 and had missing data. These processes reduced the sample size from 350 to 336 firms. Therefore, the final sample is 1008 firm-year observations (336 firms*3 years).

4.4.2 Variable definition and measurements

4.4.2.1 Measurements of dependent variables

The dependent variables used in the current study are audit fees and non-audit services fees. Following Srinidhi and Gul (2007), audit fee is measured by the natural log of audit fees. Prior research in auditing argues that auditors charge more in firms with higher agency problems

(Gul & Tsui, 1997). In addition, higher audit fees are significantly associated with (1) going-concern audit opinions (Geiger & Rama, 2003), (2) financial restatements (Kinney et al., 2004), (3) fraud (Sharma, 2004), (4) weak internal controls (Hogan & Wilkins, 2008), (5) client's business risk (Stanley, 2011), and (6) the risks of material misstatement (Gutierrez et al., 2016; Li et al., 2018). All of these are found to increase audit fees (Stanley, 2011). Hence, this current study expects that RMM are positively associated with audit fees.

Consistent with the work of Basioudis, Geiger, and Papanastasiou (2006), non-audit services fees (*NAS*) are measured by the natural log of fees paid for non-audit services. It is argued that when auditors rely more on their clients, auditor independence is at risk (Carmichael & Swieringa, 1968; Wright & Wright, 1997), hence low-quality of audit (Tepalagul & Lin, 2015). For example, a negative relationship is found between higher non-audit services fees and a lower likelihood of receiving going-concern audit opinions (Basioudis et al., 2008; Firth, 2002; Sharma, 2001). Furthermore, higher non-audit services fees are negatively associated with financial restatements (e.g., Bloomfield & Shackman, 2008; Kinney et al., 2004). Therefore, this study expects that higher levels of the risks of material misstatement are negatively associated with non-audit services fees.

4.4.2.2 Measurements of explanatory and control variables

In this study, a number of explanatory and control variables are used to assess the impact of the risks of material misstatement on audit and non-audit services fees. The main explanatory variable is the risks of material misstatement of firm. Following Gutierrez et al. (2016), the measurement of RMM are as follows: (1) the number of risks reported for each firm (*N_RISK*); and (2) the number of words used in per risk factor (*P_RISK*). Drawing from extant literature on total audit fees, this current research uses a number of control variables (X_{it}) which may affect the effect of the risks of material misstatement on audit and non-audit services fees. The

choice of these control variables is consistent with prior research and such control variables are the ones with strong evidence in the literature (e.g., Simunic, 1980; Stanley, 2011; Stice, 1991). In addition, these control variables are argued to be the determinants of audit and non-audit fees (Whisenant, Sankaraguruswamy, & Raghunandan, 2003).

The ratios of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*) is used to control for the complexity of the audit (Lyon & Maher, 2005). For a firm with a high rate of this ratio, errors increase, hence audit effort and fees increase (Stice, 1991). Therefore, and following Stanley (2011), Study Two predicts a positive coefficient for this variable. Sales growth (*GROWTH*) is measured as rate in sales over the previous fiscal year minus one (Matolcsy, Tyler, & Wells, 2012). Study Two predicts a positive coefficient for this variable because firms with higher levels of sales growth are more likely to face fraud (Sharma, 2004). Foreign operations (*FOROPS*) is an indicator variable set equal to 1 if the firm has foreign operations, otherwise 0. This is used to control for audit complexity (Ball, Jayaraman, & Shivakumar, 2012).

Firm size (*Ln_Fsize*) is measured by the natural logarithm of total assets by the year-end (Gul & Tsui, 1997; Palmrose, 1986; Venkataraman et al., 2008), and considered to be the primary determinant of audit fees and non-audit fees (Ball et al., 2012; Hay et al., 2006; O'Keefe, Simunic, & Stein, 1994; Simunic, 1980; Stanley, 2011; Whisenant et al., 2003). Hence, this study predicts that firm size positively affects total audit fees (Gul & Tsui, 1997; Whisenant et al., 2003). Tangible assets (*LN_TAN*) refer to total net property, plant and equipment at fiscal year-end. It is believed that evaluating the worth of tangible assets can be easily determined (Ali et al., 2017) and large firms are expected to carry a large amount of tangible assets. Therefore, a positive coefficient is expected.

Total accruals (*ACCR*) is used to control for audit complexity (Ball et al., 2012) and measured by net income minus cash flows from operating activities deflated by average total assets. It is argued that higher audit fees and quality translate to a better accruals quality (Srinidhi & Gul, 2007). Return on assets (*ROA*) is used to control for audit risk (Ball et al., 2012) and measured by the ratio of returns on assets (Gul & Tsui, 1997). Following Whisenant et al. (2003), Study Two predicts a negative coefficient of this variable because when auditors observe a poor financial performance of an audit client, the litigation risk increases, hence, an increase in audit fees (Stanley, 2011). Leverage (*LEV*) is a ratio of debt to total assets, which is used to capture the firm's financial flexibility and expected long-run stability (Stanley, 2011). This study predicts a positive coefficient on leverage (*LEV*) because increases in leverage are likely to increase audit fees and non-audit services fees (*NAF*) (Whisenant et al., 2003). The current ratio (*CURNT*) is a liquidity ratio that measures a company's ability to pay short-term and long-term obligations. Following Whisenant et al. (2003) and Stanley (2011) who find audit fees are negatively associated with the current ratio, the present research predicts a negative coefficient of this variable.

Volatility (*VOL*), the variance of the residual from the market model, is the measure of risk. It is used to control for financial risk. Hence, its coefficient is predicted to be positive. Audit opinion (*OPNI*) is an indicator variable set equal to 1 if the firm receives a going concern audit opinion, and 0 otherwise. Study Two assumes a positive coefficient on audit opinion (*OPNI*) as auditors charge more fees for firms who receive such an opinion (Geiger & Rama, 2003). Audit firm type (*BIG4*) is a dummy variable which takes the value of 1 if audit firm is one of Big 4 audit firms, and 0 otherwise. Consistent with the similar work of Whisenant et al. (2003), the coefficient of this variable is expected to be positive. Z-Score (*ZSCORE*) is the Altman Z-Score that measures a company's probability of bankruptcy. Following Altman (1968), Study

Two includes Z-Score and expects a negative sign of *ZSCORE* since low Z-Score employs a high probability of a firm to go for bankruptcy.

Business subsidiaries (*SUB*) refer to the natural log of the number of business subsidiaries. It is expected that a large number of subsidiaries pay a higher audit fees than a single company of comparable size (Chan, Ezzamel, & Ezzamel, 1993). Hence, its coefficient is predicted to be positive. Merger (*MERG*) is an indicator variable that equals 1 if there is a merger, and 0 otherwise. This indicator variable is used to control for audit complexity (Raghunandan & Rama, 2006). Following Lim and Tan (2008), loss (*LOSS*) is a dummy variable which takes the value of 1 for firms reporting net losses in the previous year. This research predicts a positive sign of *LOSS* because, litigation risk (DeFond et al., 2002), and total audit fees increase for firms with net losses (Hogan & Wilkins, 2008; Lyon & Maher, 2005; Stanley, 2011). Finally, Study Two includes year and industry effects in the model to capture possible variation overtime and among sectors. It should be noted that audit fees literature defines many variables that drive audit fees (e.g., Stanley, 2011). However, adding more variables in audit fees model to control for variables correlated with audit fees may result in over-controlling (Ball et al., 2012), hence increasing the likelihood of heteroscedasticity problems. Table 4.2 provides definitions of the independent, dependent and control variables employed in this study.

Table 4.2 Variables definitions for Study Two

Variable name	Acronym	Definition and measurement
Dependent variables		
Log of audit fees	<i>LN_AUDFEE</i>	Natural log of fees paid to the auditor for audit services at fiscal year-end
Log of non-audit service	<i>LN_NASFEE</i>	Natural log of fees paid to the auditor for non-audit services at fiscal year-end
Independent variables		
Number of risks	<i>N_RISK</i>	Total number of risks reported by the auditor at fiscal year-end
Log of number of risks	<i>LN_N_RISK</i>	Natural logarithm of total number of risks found by auditors at fiscal year-end
Per risk	<i>P_RISK</i>	Total number of words used in per risk at fiscal year-end
Log of per risk	<i>LN_P_RISK</i>	Natural logarithm of total number of words used in per risk at fiscal year-end
Control variables		
Inherent risk (Inventory)	<i>INVE_RI</i>	Ratio of inventory to total assets on the given firm at fiscal year-end
Inherent risk (Receivable)	<i>RICE_RI</i>	Ratio of accounts receivable to total assets on the given firm at fiscal year-end
Sales growth	<i>GROWTH</i>	Rate in sales over the previous fiscal year minus 1
Foreign operations	<i>FOROPS</i>	An indicator variable set equal to 1 if the firm has foreign operations, and 0 otherwise
Firm size	<i>Ln_Fsize</i>	Natural logarithm of total assets on the given firm at fiscal year-end
Tangible assets	<i>LN_TAN</i>	Natural logarithm of total net property, plant and equipment at fiscal year-end
Total accruals	<i>ACCR</i>	Net income minus cash flows from operating activities deflated by average total assets
Return on equity	<i>ROA</i>	Net income divided by average total common equity at fiscal year-end
Firm leverage	<i>LEV</i>	Ratio of total liabilities to total assets
Current ratio	<i>CURNT</i>	Ratio of current assets to current liabilities
Return volatility	<i>VOL</i>	Standard deviation of daily stock returns
Audit opinion	<i>OPNI</i>	An indicator variable set equal to 1 if qualified, and 0 otherwise
Audit firm type	<i>BIG4</i>	An indicator variable set equal to 1 if the sample firm is audited by Big 4, and 0 otherwise
Z-Score	<i>ZSCORE</i>	The output of a credit-strength (Altman Z-Score)
Business subsidiaries	<i>SUB</i>	Natural logarithm of number of business subsidiaries
Merger	<i>MERG</i>	An indicator variable set equal to 1 if there is a merger, and 0 otherwise
Net loss	<i>LOSS</i>	An indicator variable for firm-years with negative earnings

4.4.3 Empirical models

To investigate the association between the risks of material misstatement and audit and non-audit services fees, Study Two proposes Equations 4.3 and 4.4. These models estimate a traditional audit fee model which are driven from audit pricing theory. This traditional audit fee model highlights a framework for explaining how audit and auditee characteristics enter into the audit pricing decision (Simunic, 1980). Such models are adapted from prior studies (e.g., Gul & Tsui, 1997; Stanley, 2011; Venkataraman et al., 2008). Following Al-Dhamari, Al-Gamrh, Ismail, and Ismail (2017), who examine the relationship between related party transactions and audit fees, this study applies random-effects (RE) regression in examining the relationship between the risks of material misstatement and audit and non-audit services fees. This is because RE is more suitable for a data within a relatively short period of time (Ali et al., 2017; Baltagi, 2008).

In Equation 4.3, the dependent variable is audit fees (LN_AUDFEE), while non-audit services fees (LN_NASFEE) are the dependent variable used in Equation 4.4. Two equations are proposed as follows:

$$LN_AUDFEE_{it} = \pi_0 + \pi_1 RMMs_{it} + \pi_2 X_{it} + Year\ dummies + Industry\ dummies + \varepsilon_{1it} \quad (4.3)$$

$$LN_NASFEE_{it} = \rho_0 + \rho_1 RMMs_{it} + \rho_2 X_{it} + Year\ dummies + Industry\ dummies + \varepsilon_{2it} \quad (4.4)$$

where LN_AUDFEE_{it} is audit fees, measured by the natural log of audit fees (per Audit Analytics). LN_NASFEE_{it} is non-audit services fees, measured by the natural log of fees paid for non-audit services. RMM_i is the risks of material misstatement of firm. $RMMs_i$ is proxied by the total number of risks of material misstatement reported in the auditor's

report (N_RISK_i), and the number of words used in the risks section of the auditor's report (P_RISK_i).

X_{it} is a set of control variables, including the ratios of inventory and accounts receivable to total assets ($INVE_RI$ & $RICE_RI$), sales growth ($GROWTH$), foreign operations ($FOROPS$), firm size (Ln_Fsize), tangible assets (LN_TAN), total accruals ($ACCR$), return on assets (ROA), leverage (LEV), current ratio ($CURNT$), return volatility (VOL), audit opinion ($OPNI$), audit firm type ($BIG4$), Z-Score ($ZSCORE$), business subsidiaries (SUB), merger ($MERG$), loss ($LOSS$), year dummies, and industry dummies. These variables are adopted from the literature on audit fees and non-audit services fees (Gul & Tsui, 1997; Venkataraman et al., 2008). The index i denotes individual firm-year observations ($i = 1, 2, \dots, 1008$), t denotes time period ($t = 2014, 2015, 2016$). π_0 in Equation 4.3 and α_0 in Equation 4.4 are intercepts. In Equation 4.3, π_1 and π_2 are parameters to be estimated, while ρ_1 and ρ_2 are parameters to be estimated in Equation 4.4 and ε_{1it} , ε_{2it} are error terms in both equations.

4.5 Data and method for Study Three

4.5.1 Sample selection

The initial sample of 1050 firm-year observations consists of all the United Kingdom firms listed on the London Stock Exchange with a premium listing of equity shares for fiscal years ending 2014 - 2016. The sample period was important because the new auditing standard *International Statement On Auditing (U.K and Ireland) 700* which was issued by Financial Reporting Council (FRC) came into effect in the U.K. in 2013 (FRC, 2013a). Thus, to examine the effect of new regulation on information asymmetry in the market for the firm's stock is important for investors as well as audit regulators. The use of the U.K. setting is important because the U.K. is the earliest adopters of the new auditor's report.

To be included in the sample, the firms had to satisfy the following criteria: (1) have daily market data including ask price for stock i on day d , and the bid price for stock i on day d , daily number of shares traded, daily number of transactions, daily number of levels, the yearly number of outstanding shares, (2) availability of financial data including the new auditor's report, (3) listed on the London Stock Exchange with a premium listing of equity shares from March 2014 to April 2017 as the new auditing standard applies primarily to companies having a premium listing on the London Stock Exchange, and (4) have variables ranged within top and bottom of all variables to avoid the influence of extreme values in the data. These processes reduced the sample size from 391 to 349 firms. Hence, the final sample is 1047 firm-year observations (349*3).

This study used secondary sources to collect the data. Daily market data were collected from Bloomberg and from Datastream databases. In regards to financial data, it was collected from Bloomberg database. Data on the disclosures of RMM was hand-collected from 1047 company annual reports.

4.5.2 Variable definition and measurements

4.5.2.1 Measurements of dependent variables

The dependent variable in this study is information asymmetry in the market for the firm's stock (measured through stock liquidity). The current study adopts a number of stock liquidity proxies including the measure of trading cost, price impact of trades, and trading speed.

4.5.2.1.1 Trading cost

Trading cost represents the costs incurred in buying or selling shares over a short period of time. Following Goyenko, Holden, and Trzcinka (2009) and Schoenfeld (2017), this study employs bid-ask spread as a proxy to measure trading cost and uses bid-ask spread as the main

and the first measure of stock liquidity. This is because when regulation requires firms to provide more value-relevant information to be public, the size of the bid-ask spread should decline through the resulting decrease in information asymmetry (Frino & Jones, 2005; Greenstein & Sami, 1994). In addition, bid-ask spread is a direct measure of liquidity (Lei et al., 2013). According to Amihud and Mendelson (1986), bid-ask spread is the difference between the national best ask price and bid price of a security. The higher bid-ask spread corresponds to lower stock liquidity. Hence in firms with a high transaction cost, the price movements are less (Lesmond, Ogden, & Trzcinka, 1999). In addition, bid-ask spread decreases in firms with better corporate governance (Ali et al., 2017; Attig et al., 2006; Bhide, 1999; Brockman & Chung, 2003; Chung et al., 2010; Coffee, 1991; Maug, 1998). Further, bid-ask spread decreases in firms that provide more disclosures (Schoenfeld, 2017; Shroff et al., 2013). Hence, Study Three predicts a negative relationship between the disclosures of RMM and bid-ask spread.

Following Schoenfeld (2017), this study measures bid-ask spread as daily bid-ask spread and then average these daily bid-ask spread over a number of trading days in the financial year. The following formula to calculate the bid-ask spread of stock i for day d is used:

$$SPR_{id} = \frac{(Ask_{id} - Bid_{id})}{M_{id}} \tag{4.5}$$

where Ask_{id} is the ask price for stock i on day d , bid_{id} is the bid price for stock i on day d , and M_{id} is the mean of Ask_{id} and Bid_{id} . The lower bid-ask spread (SPR) indicates higher stock liquidity.

4.5.2.1.2 Price impact of trade

In this study, the second proxy of the dependent variable is price impact or market depth. It is defined as how deep the market can obtain a large number of shares that can be traded at a given price (Ali et al., 2017; Engle & Lange, 2001). This study uses liquidity ratio (*LR*) also called the Amivest measure of liquidity as a proxy to measure depth of the market. Amihud, Mendelson, and Lauterbach (1997) define it as the trading volume associated with a unit change in the stock price. It is based on the view that greater market liquidity is associated with higher liquidity ratio (*LR*).

Following Ali et al. (2017) who argue that better governed firms are associated with the higher liquidity ratio and Prommin et al. (2014) who find that liquidity ratio significantly rises by 26% after improving governance quality, this study measures liquidity ratio (*LR*) as the sum of daily shares traded in a financial year to the sum of daily absolute stock returns in a financial year. This study uses the following formula to calculate liquidity ratio (*LR*) of stock *i* for day *d* of year *t*:

$$LR_{it} = \frac{\sum_i VOL_{it}}{\sum_i IR_{it}} \tag{4.6}$$

where VOL_{it} is the sum of daily shares traded in a financial year, and IR_{it} is the sum of daily absolute stock returns in a financial year.

4.5.2.1.3 Immediate

This study employs immediate as the measure of how liquid the market is. According to Black (1971), the market for a stock is liquid if an investor can sell or buy a large block of stock immediately. When an investor does not have the ability to possess valued information which increases information asymmetry, it is reasonable to assume that he/she will not buy or sell

large blocks of stock in long periods of time (non-immediate). This is supported by Bartov and Bodnar (1996), Glosten and Milgrom (1985), and Karpoff (1986) who find trading volume is low in stocks with greater information asymmetry. Following Ali et al. (2017) and Datar, Naik, and Radcliffe (1998), this study uses stock turnover (*STO*) as proxy of stock liquidity. It shows how many times a share changes owners and measures as the sum of daily shares traded per year to the number of shares outstanding (Ali et al., 2017).

$$STO_{it} = VOL_{it}/N_{it} \tag{4.7}$$

where VOL_{it} is the total number of shares traded for firm i in a year t , and N_{it} is the number of outstanding shares for firm i at the end of year t . In addition, this study employs a number of proxies to measure immediate of shares including number of trades (*TR*), level of trade (*LTD*), and trading volume (*VOL*). Number of trades (*TR*) is measured by number of transactions during the year, while level of trade (*LTD*) is measured by number of shares levels during the year. Trading volume (*VOL*) is measured by total number of shares traded during the year. The higher number of trades, level of trade and trading volume, the higher the stock liquidity is (e.g., Ali et al., 2017; Chordia, Roll, & Subrahmanyam, 2001; Chordia, Subrahmanyam, & Anshuman, 2001).

4.5.2.2 Measurements of explanatory and control variables

4.5.2.2.1 Independent variable

The independent variable used in the current study is the disclosures of risks of material misstatement. Consistent with those of Gutierrez et al. (2016), Gutierrez et al. (2017), Lang and Stice-Lawrence (2015), Lennox et al. (2017), Reid et al. (2015), and the U.K. Financial Reporting Council (2016), the disclosures of risks of material misstatement (*WORDS*) is

measured by counting the number of words³⁷ in risks of material misstatement paragraph. Using the number of words as a proxy to assess the volume and amount of information disclosed in the annual reports is not new (e.g., Campbell et al., 2006; Gray et al., 1995; Hackston & Milne, 1996; Krippendorff, 2012; Marston & Shrives, 1996; Yekini & Jallow, 2012). It is expected that longer disclosures of RMM are more informative (Lang & Stice-Lawrence, 2015). In addition, firms that provide more value-relevant information to public are associated with lower information asymmetry (Gonedes, 1980; Verrecchia, 1982), which in turn improves stock liquidity (Jaffe & Winkler, 1976; Lev, 1988). Furthermore, Cheng et al. (2006) find a negative link between the disclosures of the material weaknesses that cannot be fixed and stock returns (poor stock liquidity). This is consistent with the findings of Rezaee et al. (2012) who find a positive link between stock returns (more liquid stock) and effective internal controls disclosures. Lastly, Dechow, Sloan, et al. (1996) show a positive relationship between financial statement fraud (FSF) and cost of capital (widen bid-ask spread). Hence, the current study expects that the disclosures of RMM are negatively associated with the information asymmetry in the market for the firm's stock (more liquid stock). It is important to remind the reader that Study Three aims to investigate whether information asymmetry in the market for the firm's stock is reduced with the disclosures of RMM. Such disclosures include (1) why the risks of material misstatement occur; (2) how these risks are dealt with by the auditors; (3) and what the auditors then found. This is unlike (*P_RISK*) which provides

³⁷ The dependent variable used in Study Three is proxied by a number of variables including the measure of trading cost, price impact of trades, and trading speed. Such variables have a large number. Hence, taking the log of the number of words of RMM disclosures in the extended auditor's report would not provide equality in terms of rang between the dependent variable and the independent variable.

information only on why the risks of material misstatement occur (FRC, 2013a), hence not a full set of information about the risks of material misstatement.

4.5.2.2.2 Control variables

To ascertain the impact of the risks of material misstatement disclosures on the liquidity of the stock market, a number of control variables are used. These variables are adapted from previous studies on fraud risk, going concern audit opinion, information asymmetry and liquidity.

The first control variable used in this study is firm size (*Fsize*). It is total assets of the given firm at fiscal year-end. Firm size is used to represent the firm information environment. Stocks of large firms are likely to be more liquid. This is because Menon and Williams (2010) argue that larger firms are more likely to have richer information environments, resulting in lower information asymmetry (Leuz & Verrecchia, 2000). Hence, the present study predicts a positive coefficient on firm size (*Fsize*).

Following Schoenfeld (2017), this study also controls for the financial performance of a firm using net income (*COM*) as a proxy. It is used to measure the ability of a firm in generating net income. This is because firms with good financial performance are less likely to have litigation risks (Pratt & Stice, 1994; Stice, 1991). Further, firms with better performance tend to issue more forecast disclosures (Miller, 2002). Therefore, a positive coefficient is predicted for this variable. Net income (*COM*) is measured as the absolute value of net income at fiscal year-end.

Moreover, this study controls for the effect of firm growth on stock liquidity (*GROWTH*) measured as rate in sales over the previous fiscal year. This is because firms with high sales growth may have more information asymmetry resulting in poor stock liquidity (Ali et al., 2017). In addition, as rate of sales growth increases, litigation risks increase (Pratt & Stice,

1994). Therefore, the current study predicts a negative coefficient for this variable on stock liquidity.

According to Ali et al. (2017) and Chung et al. (2010), asset tangible could reduce asymmetric information problems because tangible assets are easier to observe. Hence, this study controls asset tangibility and predicts a positive coefficient of this variable on stock liquidity. Asset tangible (*PPE*) is proxied by net property, plant and equipment at fiscal year-end.

This study includes return volatility (*VOLA*) as a control variable and measures it as the standard deviation of daily closing quote-midpoint returns. Chung et al. (2010) state that a number of studies provide evidence about the negative relationship between the quoted and effective spreads and return volatility. Therefore, a negative coefficient is predicted for this variable on bid-ask spread.

In addition, the mean of stock price (*PRC*) is controlled as previous studies demonstrate that greater information asymmetry among market participants translates into lower stock prices (Bartov & Bodnar, 1996). Prior research demonstrates that firm leverage (*LEV*) is an important variable for explaining cross-sectional variation in accounting choices (Bartov & Bodnar, 1996; Leftwich, 1981; Zmijewski & Hagerman, 1981). It is based on the view that debt's monitoring role demands that managers choose more informative accounting choices which in turn improves stock liquidity via the information asymmetry. Leverage ratio is calculated as the total debt divided by the market value of equity.

Consistent with the similar work of Eljelly (2004), Kaplan, Mowchan, and Weisbrod (2014), and Reid, Carcello, Li, and Neal (2016), current ratio (*CURNT*) is used to measure a firm's ability to pay short-term obligations. It is the ratio of current assets divided by current liabilities. Basically, a firm with a low current ratio is less likely to cover its current or short-term liabilities which may increase transaction cost of shares.

Z-Score (*ZSCORE*) known as the Altman Z-Score is the output of a credit-strength test that measures a publicly traded company's probability of going bankrupt. Based on Altman (1968), the current study includes Z-Score to demonstrate the level of financial distress of a firm. It is expected to have a positive sign between *ZSCORE* and stock liquidity. This is because a low Z-Score employs a high probability of a firm to go bankrupt. Accordingly, if a firm had a high level of financial distress, the stock would be less liquid. Z-Score is calculated as follows:

$$Z = 0.012X_1 + 0.014X_2 + 0.033X_3 + 0.006X_4 + 0.999X_5 \quad (4.8)$$

where

X_1 = Working capital/Total assets

X_2 = Retained earnings/Total assets

X_3 = Earnings before interest and taxes/Total assets

X_4 = Market value equity/Book value of total debt

X_5 = Sales/Total assets

Z = Overall score of financial distress

Finally, the current study includes year and industry effects in the model to capture possible variations over time and among sectors. Table 4.3 provides definitions of the independent, dependent, and control variables employed in this study.

Table 4.3 Variables definitions for Study Three

Variable name	Acronym	Definition and measurement
Dependent variables		
Trading cost		
Bid-ask spread	<i>SPR</i>	The ask price for stock <i>i</i> on day <i>d</i> , and the bid price for stock <i>i</i> on day <i>d</i> divided by spread averaged over a number of trading days in the financial year
Price impact		
Liquidity ratio	<i>LR</i>	Sum of daily trading volume to the sum of daily absolute stock return in the financial year
Trading speed		
Stock turnover	<i>STO</i>	Sum of daily shares traded to the number of shares outstanding in the financial year
Number of trades	<i>TR</i>	Average of number of transactions during the year

Number of levels	<i>LVS</i>	Average of number of levels during the year
Trading volume	<i>VOL</i>	Total number of shares traded during the year
Independent variable		
RMM disclosures	<i>WORDS</i>	Total number of words in RMM disclosures
Control variables		
Firm size	<i>Fsize</i>	Total number of total assets on the given firm at fiscal year-end
Net income	<i>COM</i>	Absolute value of net income at fiscal year-end
Sales growth	<i>GROWTH</i>	Rate in sales over the previous fiscal year minus 1
Asset tangibility	<i>PPE</i>	Net property, plant and equipment at fiscal year-end
Return volatility	<i>VOLA</i>	Standard deviation of daily stock returns over fiscal year-end
Stock price	<i>PRC</i>	Mean value of stock price at fiscal year-end
Firm leverage	<i>LEV</i>	Total debt divided by the market value of equity at fiscal year-end
Current ratio	<i>CURNT</i>	Ratio of current assets to current liabilities
Z-Score	<i>ZSCORE</i>	The output of a credit-strength (Altman Z-Score)

4.5.3 Empirical models

The current research comprises both cross-sectional variation and time series as a baseline method on Equation 4.9 to test the influence of the risks of material misstatement disclosures on stock liquidity. The use of pooled ordinary least squares (OLS) is suitable for investigating potential causes and effects, and how the relationships between them change over time (Podestà, 2002). To capture the variation over time and across industries, this study includes the year and industry effects, respectively. This is done by separately assigning a number of dummy variables which equal either ‘1’ or ‘0’ for each year and by separately assigning eleven dummy variables which equal either ‘1’ or ‘0’ for each industry. The industry classification is based on Global Industry Classifications Standards (GICS). This technique is widely used (e.g., Ahmed et al., 2017; Ali et al., 2017).

In addition, this study applies random-effects (RE) regression in examining the relationship between the disclosures of risks of material misstatement and stock liquidity. According to Ali et al. (2017) and Baltagi (2008), a random-effects (RE) is more suitable for data with a relatively short period of time. Besides, the random-effect estimation is appropriate for panel data (Podestà, 2002).

To investigate the association between the disclosures of risks of material misstatement and stock liquidity (i.e., more disclosures of RMM, reduce trading cost, reduce price impact, and improve trading speed), the present study proposes Equation 4.9. In model 4.9, the dependent variable is information asymmetry in the market for the firm's stock (measured through stock liquidity) and the independent variable is the disclosures of RMM. The model is formed as follows:

$$\begin{aligned}
 SLQ_{it}(SPR_{it}, LR_{it}, STO_{it}, TR_{it}, LVS_{it}, VOL_{it}) = & \alpha_0 + \alpha_1 RMM_{sit} + \alpha_2 X_{it} + \\
 & Year\ dummies + Industry\ dummies + \varepsilon_{1it}
 \end{aligned}
 \tag{4.9}$$

where SLQ_{it} is a set of stock liquidity proxies including bid-ask spread (SPR_{it}), liquidity ratio (LR_{it}), stock turnover (STO_{it}), number of trades (TR_{it}), number of levels (LVS_{it}), and trading volume (VOL_{it}). RMM_{it} is the risks of material misstatement disclosures proxied by the number of words in risks of material misstatement ($WORDS_{it}$).

X_{it} is a set of control variables, including firm size ($Fsize_{it}$), net income (COM_{it}), sales growth ($GROWTH_{it}$), asset tangible (PPE_{it}), return volatility ($VOLA_{it}$), stock price (PRC_{it}) firm leverage (LEV_{it}), current ratio ($CURNT_{it}$), Z-Score ($ZSCORE_{it}$), year, and industry dummies. These variables are adopted from fraud risk, going concern audit report and information asymmetry and liquidity literatures due to limited evidence on audit risk quantitative research (Contessotto & Moroney, 2014). The index i denotes individual firms ($i = 1, 2, \dots, 1047$), t denotes years ($t = 2014, 2015, 2016$), α_0 is intercepts, $\alpha_1, \alpha_2, \alpha_3$ are parameters to be estimated, and ε_{1it} is the idiosyncratic error term.

4.5.6 Chapter summary and conclusion

As discussed previously, the objectives of this thesis are (1) to investigate that determinants of auditor's disclosures and the audit materiality; (2) how such disclosures affect audit and non-audit services fees; and (3) how these disclosures influence the stock liquidity of firms through eliminating information asymmetry. Hence, Chapter 4 has presented an explanation of the used research design. In addition, this chapter has presented the sample selection and procedure with the size of the sample and an explanation of how and where the data was gathered for first, second, and third studies.

Based on prior research, variables related to auditor's disclosures of RMM, audit materiality, audit and non-audit services fees, and the stock liquidity of a firm are measured. In addition, based on corporate governance models, audit fees models, and disclosures models from prior research, models are developed to achieve the objectives of this thesis. The next chapter presents the results of multiple regression models that were used in this chapter including the result of ordinary least squares, and random-effects models, amongst several sensitivity tests including Feasible Generalized Least Squares (FGLS), Two-Stage-Least-Squares (2SLS), Poisson regressions, Two-limit Tobit model, and Bootstrapping approach.

CHAPTER 5: STUDY ONE RESULTS: An examination of the association between the risks of material misstatement, materiality level, and firm characteristics

5.1 Introduction

As discussed in Chapter 1 Section 3, the thesis aims to investigate determinants and the consequences of auditor's disclosures in the new auditor's report. To achieve this aim, Study One investigates: the influence of corporate governance, firm characteristics, and ownership on the disclosures of risks of material misstatement, and audit materiality.

Study One uses ten corporate governance characteristics of the firm, including board size (*Bsize*), the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), CEO tenure (*CEOT*), woman as chair (*NWCH*), female on the board (*NFB*), activity of audit committee (*Active*), independence of audit committee (*IAC*), the size of nomination committee (*NCsize*), and independent directors on nomination committee (*IDNC*). This study also uses seven variables of firm characteristics, including firm size (*Ln_Fsize*), profitability (*PROF*), tangible assets (*PPE*), firm growth (*Growth*), the ratios of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*), firm leverage (*LEV*), and firm complexity (*COMLX*), and two ownership variables, including institutional shareholders (*OUT_SR*), and inside ownership (*IN_SR*).

Study One runs multivariate balanced panel regression models to test the hypothesis with regard to the relationship between corporate governance, firm characteristics, ownership, and auditor's judgment in relation to the disclosures of risks of material misstatement and materiality. For robustness test checking, this author has used a number of tests including (1) changing measurement of variables; (2) splitting the sample; and (3) the use of (a) Two-Stage-Least-Squares (2SLS), (b) Poisson regressions, and (c) Two-limit Tobit model. The results from this study accomplish the first objective of this thesis.

5.2 Descriptive statistics

Table 5.1 provides descriptive statistics for the sample (n=966). The mean (median) number of words in RMM disclosures across the sample are 1079.770 (959.500) with a maximum of 5219 words. This table also shows that the mean (median) number of words used in per risk across the sample are 420.041 (374) words with a maximum of 2833 words. Comparing the mean and median shows that auditors of a small number of firms make, relatively, a much larger number of RMM disclosures. It is important to note that, as stated by the U.K. Financial Reporting Council (FRC), the disclosures of RMM (*WORDS*) provide a full set of information about the risks of material misstatement. This includes (1) why the risks of material misstatement occur; (2) how these risks are dealt with by the auditors; (3) and what the auditors then found. However, the number of words used in per risk section of the auditor's report (*P_RISK*) provides information only on why the risks of material misstatement occur (FRC, 2013a).

In Study One sample, the auditor of typical firm reported about three RMM (mean = 3.564, median = 3, and maximum = 9). The mean (median) amounts of materiality level with respect to assets set by auditors is £2.038.475 (11) million, with a maximum of £739.900 million. Each firm has a mean (median) board size of 9.252 (9) members and 64.818% (66.667%) of the board seats are held by independent directors, with a slightly lower proportion of CEOs acting as chair 1.7%. The CEOs tenure is about 5 years. The mean (median) number of women on boards is 1.921(2), and proportion of women acting as chair is 15.2%. On average, each audit committee meets 4.8 times a year, and 3.9 audit committee seats are held by independent members. In general, the sample companies have large nomination committees, with an average size of 4.87, and 90.782% of the nomination committee board seats are held by independent members.

On average, the firms in this sample are large in terms of total assets (a mean of £83,723,630), and make a profit measured as ROA 6.7%, measured as the absolute value of net income

£2,401,000. The statistics show that the average tangible asset is £19,249,900, suggesting that the firms in this research sample differ in terms of monitoring role (Hackston & Milne, 1996), with a rate of growth at 10.469. The mean values of asset structure measured as the ratios of inventory and receivable accounts to total asset are 0.0120 and 0.121, respectively. Mean leverage ratio is 6.609, while the average number of *COMLX* is 1.200 billion shares. Finally, – based on millions – the mean number of the institutional shares and inside shares are 305.050, and 9.891, respectively.

Table 5.1 Descriptive statistics

Variable	Mean	Std. Dev.	median	Max	Min	25p	75p
<i>WORDS</i>	1079.770	615.985	959.500	5219.000	20.000	672.000	1365.000
<i>LN_WORDS</i>	6.805	0.687	6.866	8.560	0.693	6.510	7.219
<i>PER_RISK</i>	420.041	281.610	374.000	2833.000	7.000	232.000	546.000
<i>NM_RISK</i>	3.564	1.480	3.000	9.000	1.000	2.714	4.000
<i>MAT (£million)</i>	2038.475	29548.780	11.000	739900	0.600	5.750	29.000
<i>LN_MAT</i>	2.772	1.720	2.398	13.514	0.511	1.749	3.367
<i>Bsize</i>	9.252	2.192	9.000	25.000	4.000	8.000	10.000
<i>NEX</i>	64.818	10.931	66.667	100.000	0.000	61.389	70.769
<i>Duality</i>	0.017	0.128	0.000	1.000	0.000	0.000	0.000
<i>CEOT</i>	5.642	4.812	5.16	0.167	39.500	2.250	6.830
<i>NWCH</i>	0.152	0.359	0.000	1.000	0.000	0.000	0.000
<i>NFB</i>	1.921	1.007	2.000	8.000	0.000	1.000	2.283
<i>Active</i>	4.811	1.638	4.290	14.000	1.000	4.000	5.620
<i>IAC</i>	3.910	0.942	5.000	8.000	1.000	4.000	4.038
<i>NCsize</i>	4.874	1.612	3.721	13.000	0.000	4.000	6.000
<i>IDNC</i>	90.782	13.288	3.812	100.000	0.000	85.432	100.000
<i>Fsize</i>	83.723.630	298.473.700	3.304.400	3.542.695.000	34.151	1199.668	13323
<i>ROA</i>	0.067	0.141	0.048	2.229	-0.606	0.024	0.090
<i>COM</i>	2401.650	22829.880	138.300	641943	-6482	52.300	471.000
<i>PPE</i>	19249.900	60929.400	1568.300	792176.000	5.381	418.515	6697.000
<i>Growth</i>	10.469	20.020	7.511	155.000	-42.593	0.945	15.832
<i>INVE_RI</i>	0.102	0.227	0.021	2.563	0.000	0.001	0.118
<i>RICE_RI</i>	0.121	0.278	0.065	4.034	0.000	0.015	0.129
<i>LEV</i>	6.609	14.751	2.723	175.740	1.001	1.849	5.877
<i>COMLX</i>	1.200	3.520	466.000	58.500	95566.000	205.000	1.080
<i>OUT_SR</i>	305.050	187.696	276.000	1160.000	21.000	166.000	397.000
<i>IN_SR</i>	9.891	3.850	9.260	26.000	0.000	8.000	12.000

This table presents the descriptive statistics of all variables in this study model. It also reports mean, standard deviation, 25 percentile and 75 percentile for the main proxies of RMM and firms characteristics variables. The definition of variables is provided in Table 4.1.

Table 5.2 shows, for each year, the number of words in RMM disclosures, and the materiality amounts set by auditors. Table 5.2 shows – as expected – a negative association between the mean (median) number of words in RMM disclosures, and the mean (median) amounts of materiality set by auditors. It shows that the mean (median) number of words in RMM disclosures increased gradually from 939.0807 (853.782) in 2014 to 1169.360 (1063.500) in 2016. Over the same period, the mean (median) amounts of materiality level decreased from £3.109.139 (£10.900) in 2014 to £1.326.438.000 (£11.100) in 2016. This suggests that as RMM disclosures increase, the materiality level increases. This shows that as auditors decrease their materiality, RMM disclosures increase. This is consistent with Auditing Standard ISA 320 that is “the higher the materiality level, the lower the audit risk and vice versa” (IAASB, 2004). Another explanation could be that firms listed on London Stock Exchange with a premium

listing of equity shares have effective internal controls resulting in lower audit risk. With such assessment, auditors are required to extend tests of controls via reducing the amount of materiality from £3.109.139 in 2014 to £1.326.438 in 2016 (increasing audit scope). However, as discussed previously, the amount of audit materiality is based on auditor's judgment where such judgment could vary among auditors (Iskandar, 1996; Pinsker, Pitre, and Daigle, 2009).

Table 5. 2 Sample distribution by year

Year	Panel A: Length of RMM Disclosures				Panel B: Materiality Level (£ million)			
	Obs.	Mean	Std. Dev.	Median	Obs.	Mean	Std. Dev.	Median
2014	322	939.0807	572.2954	853.782	322	3.109.139	41.885.830	10.900
2015	322	1130.868	650.2575	995.3125	322	1.679.847	21.028.800	11.185
2016	322	1169.360	599.8286	1063.500	322	1.326.438	20.649.710	11.100
Total	966				966			

The sample consists of 966 firm-year observations from 2014 to 2016. Panel A shows the number of words in RMM disclosures of sample firms by year. Panel B shows materiality amounts set by auditors of sample firms by year in million.

Figure 5.1 shows, for all the observations, the percentages of the risks of material misstatement disclosures based on the type of risk. It shows that most of the risks of material misstatement disclosures are related to impairment testing (18.41%), followed by revenue recognition (14.55%), and value of assets (11.67%).

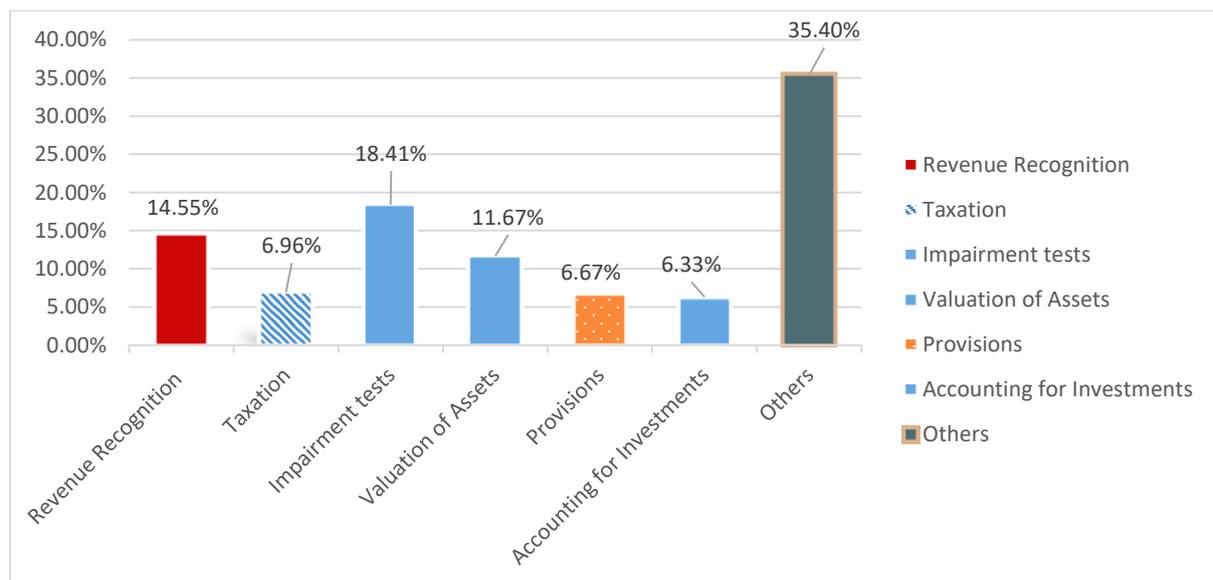


Figure 5.1 Proportions of risk types

Table 5.3 shows the number of firms in each year with high RMM disclosures, low RMM disclosures, high materiality level, and low materiality level. Firms are classified as firms with high/ low RMM disclosures based on the median number of risks reported by the auditors. If firm-year observations are above the median firm's number of risks of the sample, they are classified as firms with high RMM disclosures. Other firm-year observations are classified as firms with low RMM disclosures.

Based on this, this table shows that auditors in firms with high RMM disclosures and in high materiality increased the length of RMM disclosures from 7.234 in 2014 to 7.302 in 2016. This table also shows that the mean log transform H. RMM disclosures firm-year observations is about 7. On the other hand, the mean log transform L. RMM disclosures firm-year observations is about 6 but under 7. In actual numbers, these high and low RMM disclosures would translate into 1385 and 515 words. With regards to the materiality level, the mean amounts of H. materiality level firm-year observations range from £3.945 million in 2014 to £4.015 million in 2015. On the other hand, for L. materiality level firm-year observations, the mean amounts of L. materiality level stay around £1.600 million. As it can be seen in Table 5.3, these judgments applied by auditors show little change through the sample period.

Table 5. 3 Sample distribution by year

Year	H. RMM Disclosures				L. RMM Disclosures			
	Obs.	Mean	S.D.	Median	Obs.	Mean	S.D.	Median
<i>Panel A. Sample distribution by year with respect to length of RMM (log transformed)</i>								
2014	125	7.234	0.314	7.167	197	6.245	0.726	6.485
2015	174	7.284	0.323	7.234	148	6.361	0.661	6.513
2016	184	7.302	0.289	7.249	138	6.423	0.415	6.548
Total	483				483			

Year	H. Materiality Level (£ million)				L. Materiality Level (£ million)			
	Obs.	Mean	S.D.	Median	Obs.	Mean	S.D.	Median
<i>Panel B. Sample distribution by year with respect to materiality level</i>								
2014	161	3.945	1.839	3.332	161	1.615	0.549	1.758
2015	164	4.015	1.775	3.408	158	1.591	0.562	1.732
2016	166	3.738	1.523	3.238	156	1.618	0.542	1.609
Total	491				475			

Table 5.3 shows a sample distribution of the log of number of words in RMM disclosures, and the amounts of materiality set by auditors in firms with high/low risk in each year. Firms are classified as “firms with high risk” if firm’s number of risks is greater than the median firm’s number of risks of the sample and “firms with low number of risks” otherwise.

Table 5.4 displays the industry distribution by Global Industry Classifications Standards (GICS). Across the selected sectors, the mean (median) number of words in RMM disclosures range from 919.133 (930.000) in information technology to 1478.519 (1412.000) words in the energy sector, followed by telecommunication services sector with a mean (median) of 1422.200 (1373.000) words. This table also shows that real estate has low mean (median) number of words in RMM disclosure, with 921.128 (757.000) words followed by financials which have the lowest mean (median) number of words in RMM disclosure, with 994.389 (907.000) words. Consumer staples and utilities are in the middle of the range with a mean (median) of 1221.071 (915.000) and 1251.167 (994.000) words, respectively.

In regards to the materiality level (represented in millions), the energy sector achieved the highest amounts set by auditors with a mean (median) of £58697.430 (£23.900), followed by the financials sector with a mean (median) of £624.847 (£12.200), while information technology achieved the lowest amounts set by auditors with a mean (median) of £6.599 (£5.600). Other sectors, such as consumer discretionary, and health care are in the middle of the range with a mean (median) of £127.087 (£9.000) and £40.818 (£6.000), respectively.

Table 5.4 Statistic description by sectors

Code	Sector	Length of RMM Disclosures				Materiality Level (£ million)			
		Obs.	Mean	S.D.	Median	Mean	S.D.	Median	Percentage
10	Energy	30	1478.519	521.968	1412.000	58697.430	159664.200	23.900	3.11%
15	Materials	87	1045.519	416.956	979.000	58.819	126.688	12.000	8.90%
20	Industrials	174	1176.902	673.174	965.500	87.523	659.194	8.500	18.12%
25	Consumer Discretionary	183	1058.673	509.637	914.000	127.087	840.232	9.000	18.94%
30	Consumer Staples	51	1221.071	795.673	915.000	65.293	97.862	16.850	5.28%
35	Health Care	39	1154.665	639.269	1003.000	40.818	66.578	6.000	4.04%
40	Financials	249	994.389	667.114	907.000	624.847	3824.958	12.200	25.67%
45	Information Technology	42	919.133	388.215	930.000	6.599	4.535	5.600	4.45%
50	Telecommunication Services	15	1422.200	558.961	1373.000	72.520	88.050	10.000	1.55%
55	Utilities	18	1251.167	811.888	994.000	37.392	38.897	19.000	1.86%
60	Real Estate	78	921.128	550.588	757.000	26.842	27.871	16.300	8.07%
	Total	966							

Table 5.4 displays the industry a sample distribution across industry classifications according to Global Industry Classifications Standards (GICS) of the number of words in RMM disclosures, and the amounts of materiality set by auditors in millions.

In data analysis, it is very important to carefully study the data structure including the distribution of the measured variables (Reimann & Filzmoser, 2000). Measured variables can have a negative skewness or a positive skewness (Harvey & Siddique, 1999). A log-normal distribution could be used to minimize skewness (Reimann & Filzmoser, 2000). Figures 5.2 and 5.3 display the descriptions of the measured variables (RMM disclosures and materiality level), by sectors, respectively. In these figures, sectors are grouped based on the GICS of the firm from 2014 to 2016. In general, for the full sample size, Figure 5.2 shows that taking the logarithm greatly minimizes the negative skewness in the length of RMM distribution of the sample firms, while Figure 5.3 presents that the positive skewness in the materiality level distribution is minimized. In terms of the disclosures of RMM distribution, Figure 5.2 shows that most of the sectors are distributed in the range of 6 to 8. However, the materiality level is distributed diversely among the sectors. Specifically, the description in energy and financials sectors range from 0 to around 10, while the description in information technology range from 0.5 to 3. The remaining sectors, including materials, industrials, consumer discretionary, consumer staples, health care, telecommunication services, utilities, and real estate are distributed in the range of 0 to 6.

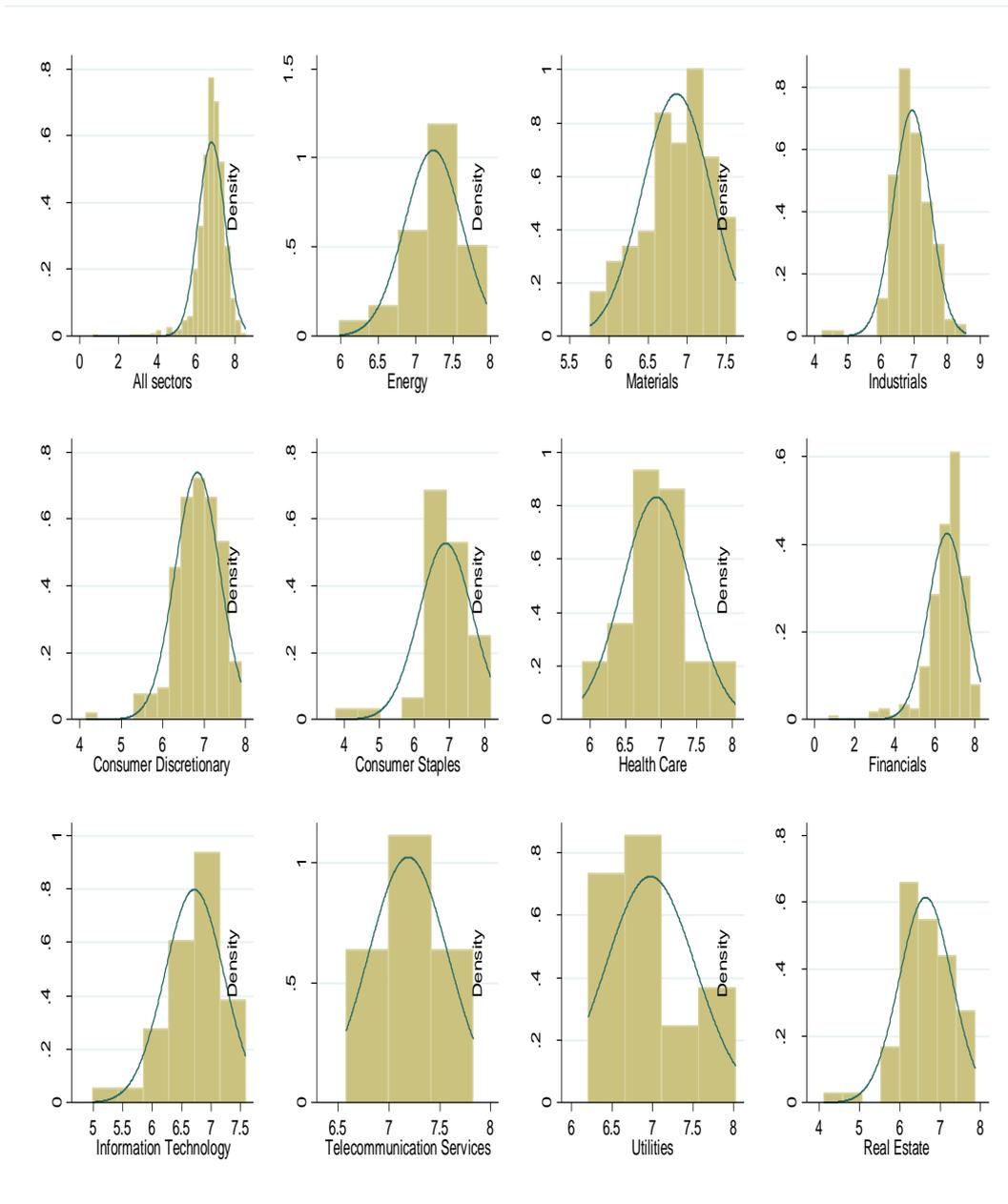


Figure 5.2 The logarithm of length of RMM distribution of sample firms by sectors

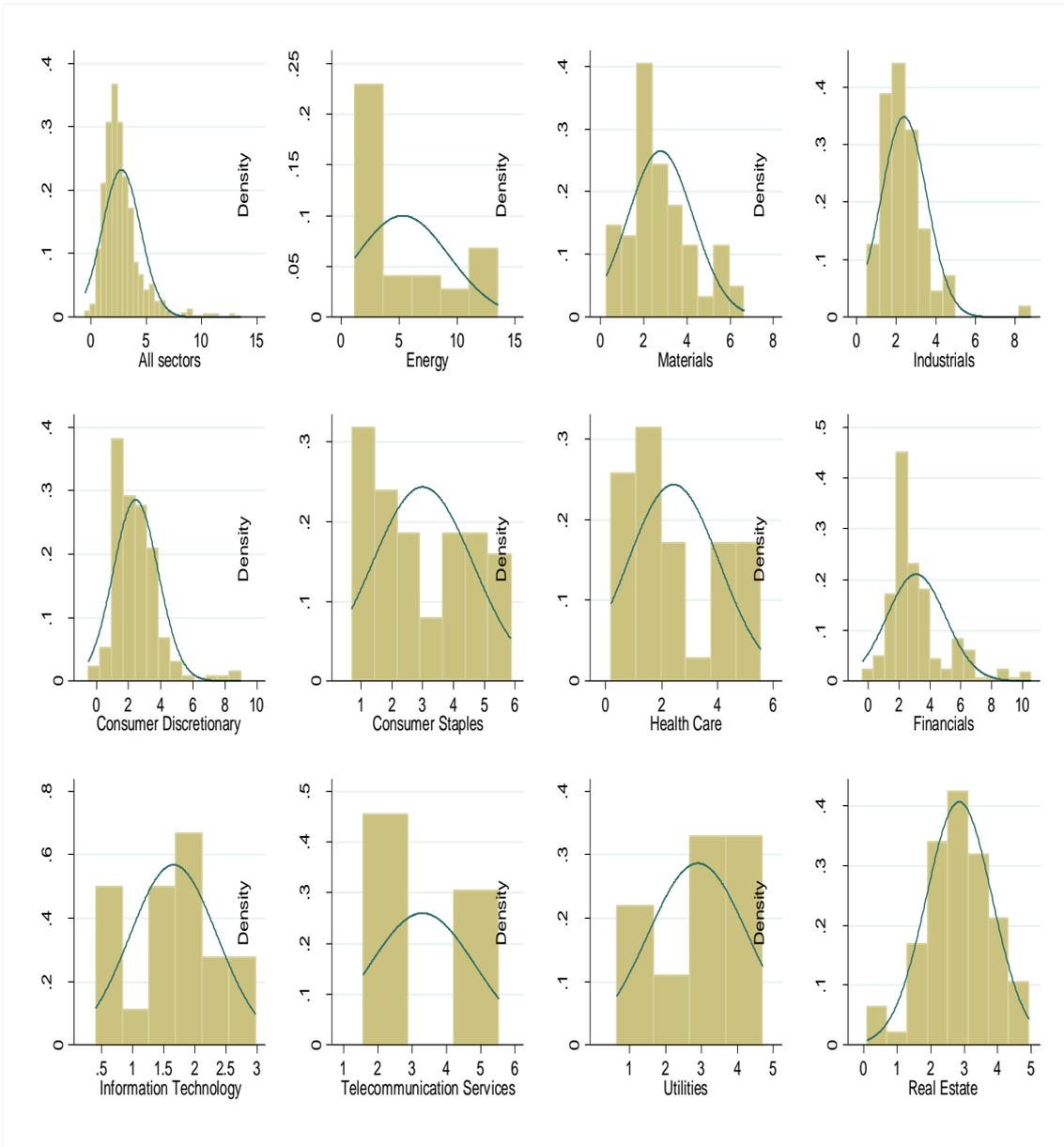


Figure 5.3 The logarithm of materiality level distribution of sample firms by sectors

5.3 Univariate analysis

As mentioned previously, it is important to study the data and to understand the linkage between the measured variables (i.e., internal and external corporate governance including firm characteristics and the risks of material misstatement variables). This includes examining whether there is a significant difference between the mean scores of 966 H. RMM disclosures and L. RMM disclosures firms at the 1% level in all the measured variables. Therefore, this study conducts a univariate analysis of firms with high RMM disclosures and firms with low RMM disclosures in auditor's report using a related sample *t*-test. As can be seen in Table 5.5, the differences in the means for logarithm of RMM disclosures (*LN_WORDS*), per risk (*PER_RISK*), number of risks (*NM_RISK*), and the logarithm of the materiality level (*LN_MAT*) between firms with high RMM disclosures and firms with low RMM disclosures are statistically significant at the 1% level. The means of these variables of firms with high RMM disclosures are larger than that of firms with low RMM disclosures.

In terms of internal and external corporate governance elements, board size (*Bsize*), CEO tenure (*CEOT*), woman as chair (*NWCH*), female on the board (*NFB*), activity of audit committee (*Active*), independence of audit committee (*IAC*), size of nomination committee (*NCsize*), independent directors on nomination committee (*IDNC*), levels of institutional shareholders (*OUT_SR*), and inside ownership (*IN_SR*) are statistically significant at the 1% level, and larger than that of firms with low RMM disclosures. However, the differences in the percentage of non-executive directors (*NEX*), CEO duality (*Duality*), and proportion of independent directors on nomination committee (*IDNC*) are not significant at conventional levels.³⁸

³⁸ All *t*-tests in this research are two-tailed.

Table 5.5 shows that firms with high RMM disclosures have a relatively larger firm size (*Ln_Fsize*), larger tangible assets (*PPE*), lower financial performance (*ROA*, *LN_COM*), larger inventory and receivable accounts (*INVE_RI* & *RICE_RI*), and are more complex (*COMLX*). Differences in these variables between firms with high RMM disclosures and low RMM disclosures are statistically significant at the 1% level, except for firm growth (*Growth*), and firm leverage (*LEV*).

These results indicate that the levels of information environment including information asymmetry could be influenced by the strength of a firm corporate governance (Holm & Schøler, 2010; Lin, You, & Lin, 2008; Pawlina & Renneboog, 2005). Furthermore, these results indicate larger firms, firms with lower financial performance, and firms with larger inventory and receivable accounts are riskier for auditors, and auditors tend to increase audit effort and, therefore disclosures.

Table 5.5 Univariate analysis of firms with high/low RMM disclosures in auditor's report

Variable	H. RMM			L. RMM			Difference	
	N	Mean	STD	N	Mean	STD	Mean Diff	t-stat
<i>LN_WORDS</i>	483	7.278	0.308	483	6.331	0.634	-0.946***	-29.508
<i>PER_RISK</i>	483	595.794	287.497	483	244.288	119.213	-351.506***	-24.821
<i>LN_MAT</i>	483	2.974	1.702	483	2.570	1.715	-0.404***	-3.673
<i>Bsize</i>	483	9.690	2.145	483	8.814	2.153	-0.876***	-6.331
<i>NEX</i>	483	64.756	12.455	483	64.879	9.169	0.123	0.175
<i>Duality</i>	483	0.031	0.174	483	0.050	0.218	0.019	1.471
<i>CEOT</i>	483	1.273	0.972	483	1.488	0.855	0.216***	3.658
<i>NWCH</i>	483	0.106	0.308	483	0.199	0.399	0.093***	4.061
<i>NFB</i>	483	2.086	1.059	483	1.756	0.925	-0.330***	-5.164
<i>Active</i>	483	5.001	1.807	483	4.621	1.428	-0.380***	-3.625
<i>IAC</i>	483	4.002	1.005	483	3.819	0.866	-0.183***	-3.028
<i>NCsize</i>	483	5.070	1.694	483	4.677	1.501	-0.393***	-3.820
<i>IDNC</i>	483	91.418	12.652	483	90.145	13.879	-1.273	-1.490
<i>Ln_Fsize</i>	483	8.854	2.009	483	8.363	2.327	-0.491***	-3.512
<i>ROA</i>	483	0.045	0.088	483	0.089	0.176	0.045***	4.993
<i>LN_COM</i>	483	4.670	2.480	483	5.327	2.169	0.657***	4.380
<i>PPE</i>	483	24314.970	79671.030	483	14184.830	32149.570	-10130.140**	-2.591
<i>Growth</i>	483	9.876	22.597	483	11.062	17.062	1.186	0.921
<i>INVE_RI</i>	483	4.285	2.391	483	3.474	2.200	-0.811***	-5.484
<i>RICE_RI</i>	483	5.870	1.746	483	5.091	2.183	-0.779***	-6.121
<i>LEV</i>	483	7.079	13.836	483	6.139	15.613	-0.940	-0.990
<i>COMLX</i>	483	1.630	4.840	483	775.000	1.020	-855.000***	-3.795
<i>OUT_SR</i>	483	349.648	210.875	483	260.452	148.587	-89.196***	-7.599
<i>IN_SR</i>	483	10.239	4.021	483	9.543	3.642	-0.696***	-2.818

Notes: The main dependent variables are *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosures, and *LN_MAT* which refers to natural logarithm of the total amount or amounts set by the auditors. Other dependent variable that is, *PER_RISK* which refers to number of words per risk, is used in the sensitive regressions. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *Ln_Fsize*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. The definition and measurements of all these variables are given in Table 4.1. This table provides a paired sample *t*-test of total number of words in RMM disclosures and the total amount or amounts set by the auditors of firms with high-RMM and firms with low-RMM. Firms are classified as “firms with high risk” if firm’s number of risks is greater than the median firm’s number of risks of the sample and “firms with low number of risks” otherwise. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.4 Correlation analysis

Table 5.6 shows the Pearson's correlation matrix between the variables used in the analysis. In the relationship between corporate governance elements and RMM disclosures, board size (*Bsize*), female on the board (*NFB*), activity of audit committee (*Active*), the size of nomination committee (*NCsize*), independent directors on nomination committee (*IDNC*), institutional shareholders (*OUT_SR*), and inside ownership (*IN_SR*) have a significant positive correlation with *LN_WORDS* at the 1% level, whereas independence of audit committee (*IAC*) has a significant positive correlation with *LN_WORDS* at the 5% level. In addition, CEO tenure (*CEOT*), and woman as the board chair (*NWCH*) are negatively correlated with (*LN_WORDS*) at the 1% level, while the proportion of non-executive directors (*NEX*), and CEO duality (*Duality*) do not correlate with *LN_WORDS*. These correlations indicate that internal and external corporate governance elements are associated with RMM disclosures. The positive correlations of the disclosures of RMM (*LN_WORDS*) with board size (*Bsize*), female on the board (*NFB*), activity of audit committee (*Active*), independence of audit committee (*IAC*), the size of nomination committee (*NCsize*), independent directors on nomination committee (*IDNC*), institutional shareholders (*OUT_SR*), and inside ownership (*IN_SR*) are not surprising. This is because corporate governance elements are viewed as monitoring mechanisms over managerial opportunism and such mechanisms used to strengthen a firm's internal control (e.g., Abbott et al., 2000; Gorkittisunthorn et al., 2006; Jensen & Meckling, 1976; Lehn et al., 2009; Naiker et al., 2012).

In terms of firm characteristics, the ratios of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*) and complexity (*COMLX*) are found to have a statistically positive correlation with *LN_WORDS* at the 1% level, while *LEV* is negatively correlated with *LN_WORDS* at the 5% level. In addition, the financial performance of firms such as *ROA* and *LN_COM* are seen to have a significant negative correlation with *LN_WORDS* at the 1% level.

Table 5.6 also displays the Pearson's correlation matrix between corporate governance elements of the firm, firm characteristics (*FC*), and auditor's judgment in terms of materiality level. Firm size (*Ln_Fsize*), women on the board (*NFB*), activity of audit committee (*Active*), independence of audit committee (*IAC*), the size of nomination committee (*NCsize*), independent directors on nomination committee (*IDNC*), and institutional shareholders (*OUT_SR*) have a significant positive correlation with *LN_MAT* at the 1% level, whereas the proportion of non-executive directors (*NEX*) has significant positive correlation with audit materiality (*LN_MAT*) at the 5% level. This indicates that auditors increase the materiality level in better governed firms.³⁹ In addition, firm characteristics such as firm size (*Fsize*), tangible assets (*PPE*), the proportions of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*), firm leverage (*LEV*), and firm complexity (*COMLX*) are found to have a statistically positive correlation with audit materiality (*LN_MAT*) at the 1% level. On the contrary, a statistically negative correlation between profitability (*ROA*), firm complexity (*COMLX*), and materiality (*LN_MAT*) at the 1% level suggests that auditors reduce the materiality levels in firms with high growth and low financial performance.

Field (2009) suggests that multicollinearity problems among the variables of the model occur when correlation coefficients are 0.8 or above. Apart from correlation between the ratio of

³⁹ SAS No. 47 requires auditors to consider materiality when designing the nature, timing, and extent of audit procedures and in evaluating the results of those procedures. However, no rules or standards exist for assessing materiality or explaining materiality judgments to constituent groups (DeZoort et al., 2003). SAS No. 10 recommends auditors to apply their professional judgment when setting materiality. This could suggest that auditors increase (decrease) their materiality when there is high (low) audit risk. This is supported by Bell et al. (2001) who find that the number of audit hours are increased (decreased in materiality) in business risk. In addition, they argue that auditors adopt less extent of tests of details (increase materiality) in better governed clients.

receivable (*RICE_RI*) and firm size (*Ln_Fsize*) equals 0.7119, all of the other correlation coefficients are below 0.56. Furthermore, variance inflation factors (VIF) are used (but not reported) to check if the independent variables suffer from multicollinearity. It shows that (not tabulated) the largest variance inflation factors from the different regressions equal 5.6 with a mean of 1.71 for all the independent variables, well below the 10.00, suggesting that multicollinearity is unlikely to be a serious threat in the research results recommended by Neter, Kutner, Nachtsheim, and Wasserman (1996).

Table 5.6 Pearson's correlation matrix of variables

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1. <i>LN_WORDS</i>	1.000							
2. <i>LN_MAT</i>	0.131***	1.000						
3. <i>Bsize</i>	0.190***	0.416***	1.000					
4. <i>NEX</i>	-0.031	0.059*	0.072**	1.000				
5. <i>Duality</i>	-0.040	-0.068**	-0.023	-0.084***	1.000			
6. <i>CEOT</i>	-0.109***	-0.048	-0.061*	-0.032	0.067**	1.000		
7. <i>NWCH</i>	-0.261***	0.037	0.033	0.114***	0.192***	0.106***	1.000	
8. <i>NFB</i>	0.173***	0.331***	0.564***	0.191***	-0.094***	-0.098***	0.090***	1.000
9. <i>Active</i>	0.103***	0.275***	0.292***	0.085***	-0.053*	-0.009	0.117***	0.202***
10. <i>IAC</i>	0.077**	0.237***	0.385***	0.167***	-0.008	-0.004	0.039	0.328***
11. <i>NCsize</i>	0.158***	0.151***	0.201***	0.111***	-0.085***	-0.074**	-0.050	0.186***
12. <i>IDNC</i>	0.089***	0.110***	0.068**	0.148***	-0.050	0.022	0.013	0.142***
13. <i>Ln_Fsize</i>	-0.010	0.510***	0.482***	0.189***	-0.097***	0.020	0.430***	0.406***
14. <i>ROA</i>	-0.146***	-0.081**	-0.077**	-0.012	0.021	0.017	-0.030	0.015
15. <i>LN_COM</i>	-0.226***	0.288***	0.246***	0.175***	-0.030	0.099***	0.407***	0.289***
16. <i>PPE</i>	-0.029	0.319***	0.351***	0.132***	-0.060*	-0.041	0.149***	0.267***
17. <i>Growth</i>	-0.030	-0.097***	-0.064*	0.051	0.031	0.110***	0.116***	-0.087***
18. <i>INVE_RI</i>	0.236***	0.154***	0.105***	-0.018	-0.015	-0.020	-0.188***	0.135***
19. <i>RICE_RI</i>	0.097***	0.400***	0.407***	0.107***	-0.064**	0.015	0.184***	0.371***
20. <i>LEV</i>	-0.083**	0.106***	0.197***	0.092***	-0.030	-0.011	0.115***	0.133***
21. <i>COMLX</i>	0.174***	0.299***	0.273***	0.076**	-0.045	-0.008	0.036	0.226***
22. <i>OUT_SR</i>	0.263***	0.562***	0.518***	0.106***	-0.072**	-0.065**	-0.053*	0.543***
23. <i>IN_SR</i>	0.093***	0.0025	0.0012	-0.0157	-0.061*	-0.007	-0.050	0.040

	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
9. <i>Active</i>	1.000							
10. <i>IAC</i>	0.068**	1.000						
11. <i>NCsize</i>	-0.012	0.389***	1.000					
12. <i>IDNC</i>	0.047	0.095***	0.091***	1.000				
13. <i>Ln_Fsize</i>	0.397***	0.297***	0.123***	0.032	1.000			
14. <i>ROA</i>	-0.085***	-0.023	-0.039	0.053*	-0.264***	1.000		
15. <i>LN_COM</i>	0.191***	0.252***	0.050	0.045	0.579***	0.180***	1.000	
16. <i>PPE</i>	0.242***	0.111***	0.052	0.023	0.553***	-0.101***	0.196***	1.000
17. <i>Growth</i>	-0.012	-0.024	-0.083***	-0.013	-0.016	0.077**	0.170***	-0.041
18. <i>INVE_RI</i>	0.017	0.095***	0.166***	0.019	-0.025	-0.001	-0.07***	-0.114***
19. <i>RICE_RI</i>	0.359***	0.289***	0.146***	0.067**	0.711***	-0.191***	0.410***	0.365***
20. <i>LEV</i>	0.156***	0.063**	0.015	-0.022	0.366***	-0.076***	0.126***	0.353***
21. <i>COMLX</i>	0.253***	0.229***	0.056*	0.081**	0.393***	-0.065***	0.157***	0.257***
22. <i>OUT_SR</i>	0.248***	0.335***	0.290***	0.205***	0.490***	-0.013	0.323***	0.290***
23. <i>IN_SR</i>	0.001	-0.014	0.029	0.012	0.020	-0.027	-0.011	-0.033

	[17]	[18]	[19]	[20]	[21]	[22]	[23]
17. <i>Growth</i>	1.000						
18. <i>INVE_RI</i>	-0.106***	1.000					
19. <i>RICE_RI</i>	-0.030	0.100***	1.000				
20. <i>LEV</i>	-0.007	-0.147***	0.220***	1.000			
21. <i>COMLX</i>	-0.075**	0.002	0.259***	0.137***	1.000		
22. <i>OUT_SR</i>	-0.130***	0.371***	0.471***	0.106***	0.387***	1.000	
23. <i>IN_SR</i>	-0.037	0.083***	0.012	-0.006	-0.013	0.013	1.000

This table reports correlation matrix of all dependent and independent variables. The definition and measurements of all these variables are given in Table 3.1. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.5 Main results

5.5.1 Determinants of auditor's disclosures – the risks of material misstatement disclosures

This section presents and discusses the results of the empirical analysis for determinants of the risks of material misstatement disclosures for the entire sample of 966 listed firms on the LSE over the 2014 to 2016 period. To examine these determinants, this research employs random-effects estimation for each model and presents the results in Panel A of Table 5.7. This model is estimated based on a panel data using Stata 13 statistical data analysis. The regression model is a good fit, with approximately 37% of the variation in *LN_WORDS* explained by variation in the independent variables.

In addition, this research uses the OLS approach for pooled data for each model and presents the results in Panel B of Table 5.7. This research uses OLS method with attempts to compare the results of RE with OLS. Overall, the model is suitable for investigating these determinants of the risks of material misstatement disclosures across groups (adjusted $R^2 = 29\%$). Moreover, as part of robustness checks, Study One re-runs the results (not reported) using fixed-effect (FE) method for each model.⁴⁰ However, FE may not be suitable for data with a relatively short time period (Ali et al., 2017; Baltagi, 2008).

Unlike existing literature on corporate governance elements and auditor's judgment (e.g., Cohen et al., 2007; Messier & Austen, 2000; Sharma et al., 2008) who conduct their research

⁴⁰ The author does not discuss the results of fixed-effect method as well as ordinary least squares in Study One in the interest of brevity.

based on experiment research design, this study is the first to demonstrate the relationship between corporate governance elements and auditor's judgment (the risks of material misstatement disclosures, and materiality) in the new auditor's report. Furthermore, this is the first study that provides evidence associated with RMM disclosures and corporate governance elements based on random-effects estimation. Study One documents (Table 5.7 in Panel B) that board size (*Bsize*), CEO tenure (*CEOT*) woman as chair (*NWCH*), female on the board (*NFB*), activity of audit committee (*Active*), the size of nomination committee (*NCsize*), and institutional shareholders (*OUT_SR*) are all statistically significant with the disclosures of risks of material misstatement (*LN_WORDS*).

The results, as anticipated in H1 (a), confirm that corporate governance elements are statistically significant determinants of RMM disclosures. Specifically, the coefficient of 0.031 on board size (*Bsize*) in Panel A (t -statistic=2.710) shows that an increase of one member in the board (*Bsize*) increased the disclosures of risks of material misstatement by 3.1%.⁴¹ This coefficient is statistically significant at the 1% level. This would mean that if the median board size (*Bsize*) increases from 9 to 10, the median *logarithm* of RMM disclosures (*LN_WORDS*) will increase from 6.866 to 7.078 words. Matolcsy, Stokes, and Wright (2004) find that when the boards are large, the higher the number of non-executive directors is and, in contrast these

⁴¹ It is worth reminding that the interpretation of linear regression models depends on the value of Y and/or the value of X. For example, if it is a "level-level"; that is, linear - linear: $\mathbf{Y} = \mathbf{b}_0 + \mathbf{b}_1\mathbf{X} + \mathbf{e}$, β_1 interprets as a 1 unit up in X leads to b_1 unit change in Y. Similarly to this case, if it is a "log-level"; that is, log - linear: $\mathbf{log}(\mathbf{Y}) = \mathbf{b}_0 + \mathbf{b}_1\mathbf{X} + \mathbf{e}$, β_1 interprets as a 1 unit up in X leads to $100b_1$ % change in Y. If it is a "log-log"; that is, log - log: $\mathbf{log}(\mathbf{Y}) = \mathbf{b}_0 + \mathbf{b}_1\mathbf{log}(\mathbf{X}) + \mathbf{e}$, β_1 interprets as a 1% up in X leads to b_1 % change in Y. For more information (see e.g., Benoit, 2011).

non-executive directors are associated with an increase in RMM disclosures (Donnelly & Mulcahy, 2008).

In addition, the coefficient of activity of audit committee (*Active*) is 0.028 with the *t*-statistic equals to 2.490 (significant at the 5% level) suggests that an increase in one meeting in audit committee board increased the disclosures of risks of material misstatement by 2.8%. This would mean that if a firm audit committee increases the number of meetings from 4.290 to 5.290, the median logarithm of RMM disclosures (*LN_WORDS*) will increase from 6.866 to 7.058 words.

The coefficient on the size of the nomination committee (*NCsize*) is positive and statistically significant at the 10% level. This coefficient indicates that a 1% increase in the size of nominating committee increased the disclosures of risks of material misstatement by 2.8% (significant at the 5% level). This shows that the median logarithm of RMM disclosures (*LN_WORDS*) will increase from 6.866 to 7.058 words when a firm increases the size of nominating committee from 3.721 to 4.721. In a similar vein, Karamanou and Vafeas (2005) expect boards with independent and expert directors, larger boards, and audit committee meeting will provide better monitoring performance over management. They find that firms with an effective corporate governance including these mechanisms put up higher financial disclosures.

Table 5.7 Determinants of auditor’s disclosures – the risks of material misstatement

Variable	Panel A: Random-effects			Panel B: Pooled OLS		
	Coef.	Robust S.E.	t-ratio	Coef.	Robust S.E.	t-ratio
<i>Bsize</i>	0.031***	(0.012)	2.710	0.035***	(0.011)	3.290
<i>NEX</i>	0.0004	(0.001)	0.260	0.0004	(0.002)	0.220
<i>Duality</i>	0.069	(0.095)	0.730	0.084	(0.100)	0.840
<i>CEOT</i>	-0.029	(0.021)	-1.410	-0.043**	(0.021)	-2.030
<i>NWCH</i>	-0.283***	(0.090)	-3.150	-0.251***	(0.080)	-3.140
<i>NFB</i>	0.011	(0.025)	0.440	0.040*	(0.023)	1.760
<i>Active</i>	0.028**	(0.011)	2.490	0.032**	(0.012)	2.570
<i>IAC</i>	-0.038	(0.031)	-1.250	-0.030	(0.023)	-1.330
<i>NCsize</i>	0.028*	(0.015)	1.810	0.033**	(0.015)	2.220
<i>IDNC</i>	0.001	(0.002)	0.720	0.001	(0.002)	0.790
<i>Ln_Fsize</i>	0.005	(0.038)	0.140	-0.004	(0.026)	-0.170
<i>ROA</i>	-0.384***	(0.106)	-3.620	-0.445***	(0.108)	-4.130
<i>LN_COM</i>	-0.064***	(0.012)	-5.130	-0.079***	(0.011)	-6.870
<i>PPE</i>	-1.40×10 ⁻⁶ ***	(-1.41×10 ⁻⁶)	-1.000	-1.10×10 ⁻⁶	(-7.8×10 ⁻⁶)	-1.400
<i>Growth</i>	0.003***	(0.001)	4.840	0.003***	(0.001)	3.830
<i>INVE_RI</i>	0.080	(0.114)	0.710	0.126	(0.101)	1.240
<i>RICE_RI</i>	-0.037	(0.089)	-0.420	-0.068	(0.076)	-0.890
<i>LEV</i>	-0.003**	(0.002)	-1.430	-0.004	(0.005)	-0.800
<i>COMLX</i>	2.55×10 ⁻¹¹ ***	(4.8×10 ⁻¹¹)	5.270	2.24×10 ⁻¹¹ ***	(0.40×10 ⁻¹¹)	5.580
<i>OUT_SR</i>	0.0006***	(0.0002)	3.460	0.001***	(0.0001)	4.080
<i>IN_SR</i>	0.004	(0.004)	0.870	0.004	(0.004)	0.890
Intercept	6.105***	(0.313)	19.500	6.050***	(0.255)	23.710
Year	Yes			Yes		
Industry	Yes			Yes		
R ² (Between)	0.367			0.261		
Obs.	966			966		

Panel A reports the main results of RE estimation of Equation 4.1 on the relationship between RMM proxied number of words in RMM disclosures and firm characteristics. Panel B reports the results of OLS of Equation 4.1 for comparison with RE estimation. The dependent variable is *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosures. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *Ln_Fsize*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

In addition, Study One finds that firms with higher levels of institutional ownership (*OUT_SR*) have a 0.06% higher level of the risks of material misstatement disclosures (statistically significant at the 1% level) with the *t*-statistic of 3.460. This finding is consistent with the similar work of Karamanou and Vafeas (2005) who find higher ownership by institutions has a positive influence on the level of financial disclosures via better monitoring over management. Based on data from the Singapore Exchange, Cheng and Courtenay (2006) also find that firms with external governance mechanisms have significantly higher levels of disclosures. On the contrary, woman as the board chair (*NWCH*) are found to significantly and negatively affect the disclosures of risks of material misstatement at the 1% level. As seen in Panel A, in a firm with females acting as the chair, auditors decrease the disclosures of risks of material misstatement by 28.3%.⁴² This strong relationship is similar to those of Donnelly and Mulcahy (2008) who find a strong linkage between firms with non-executive chairperson and the level of disclosures in Ireland setting.

The above results are consistent with prior studies that suggest that corporate governance elements increase the level of financial information released to investors (Beekes & Brown, 2006; Beekes et al., 2015; Lim, et al., 2014; Liu, 2012) and that find corporate governance is linked to audit planning judgments, and audit effort (Cohen et al., 2007; Sharma et al., 2008). The results of this study also suggest that auditors of such firms extended tests of controls procedure because of the effectiveness of these firms' controls and this is consistent with a

⁴² To interpret a coefficient of a dummy variable, let x_{3i} : a dummy variable that equals 1 if yes; and 0 otherwise, and let $\ln(y_{1i})$: the natural log of a continuous variable. Hence, $\ln(y_{1i}) = \beta_0 + x_{1i}\beta_1 + \ln(x_{2i})\beta_2 + x_{3i}\beta_3 + \varepsilon_i$. Here, β_3 = the movement of x_{3i} from 0 to 1 produced a $100 \times \beta_3$ percent change in y_{1i}

number of auditing standards including International Standards on Auditing No. 330 (IAASB, 2009a).

In terms of firm characteristics, the coefficient of 0.003 on rate of sales growth (*Growth*) in Panel A (t -statistic=4.840) shows that a 1% increase in rate of sales growth (*Growth*) increased the disclosures of risks of material misstatement by 0.003 percentage points. This coefficient is statistically significant at the 1% level. The coefficient on firm complexity (*COMLX*) is statistically significant at the 1% level with the t -statistic of 5.270. Such a strong relationship between firm complexity (*COMLX*) and the level of the risks of material misstatement disclosures (*LN_WORDS*) confirms that complex firms are more risky. The coefficient of 0.080 on the ratio of inventory accounts (*INVE_RI*) in Panel A (t -statistic= 0.710) shows that a 1% increase in inventory accounts led to increasing the risks of material misstatement disclosures by 0.080 percentage points. This coefficient is insignificant.⁴³

In addition, in leveraged firms, the risks of material misstatement disclosures (*LN_WORDS*) are reduced by 0.003 percentage points (statistically significant at the 5%) with the t -statistic of 1.430. This could indicate that auditors of such firms have relatively limited information environment, and hence, auditors reduce disclosures of RMM. In a similar manner and using data from Hong Kong and Singapore stock markets, Chau and Gray (2002) indicate that the level of information disclosed is likely to be more in firms with a higher level of leverage to minimize legal risk. The coefficient on tangible assets (*PPE*) equals -1.40×10^{-6} (statistically

⁴³ Since Study One investigates the *determinants* of the risks of material misstatement disclosures, the author does not discuss the factors that are found to have an insignificant effect on the levels of RMM disclosures in detail. The factors that provide an insignificant impact on *LN_WORD* are *NEX*, *CEO Duality*, *CEOT*, *NFB*, *IAC*, *IDNC*, *Ln_Fsize*, *INVE_RI*, and *RICE_RI*.

significant at the 1% level with the t -statistic of 1.000) and indicates that firms with larger tangible assets are less risky in terms of risks of material misstatement than those with larger intangible assets accounts.

In terms of firm performance, return on assets (ROA) is found to significantly and negatively affect risks of material misstatement level. As can be seen in Table 5.7, a 1% increase of return on assets (ROA) leads to decrease the risks of material misstatement disclosures (LN_WORDS) by 0.384 percentage points (statistically significant at the 1% level with the t -statistic of 3.620). This relationship shows that firms with low profits are more closely associated with errors in financial statements, and as return on assets (ROA) increases, the levels of risks of material misstatement disclosures (LN_WORDS) decrease. This finding is similar to the finding by Camfferman and Cooke (2002) who point out that comprehensiveness of disclosure by the U.K. listed corporations varies based on a number of firm-specific factors including return on assets. The net income variable (LN_COM) shows that as the net income increases by 1%, the disclosures of risks of material misstatement decreased by 0.064 percentage points. This coefficient is statistically significant at the 1% level with t -statistic equal to 5.130.

Consistent with H2, the results confirm that firm characteristics and performance are statistically significant determinants of the risks of material misstatement disclosures. The findings of this study are consistent with the findings of, for example, Blokdiik et al. (2003), Elliott (1983), Warren and Elliot (1986), and Whittington and Margheim (1993) that audit client characteristics influence auditor's judgment.

5.5.2 Determinants of auditor's disclosures – materiality level

In the case of materiality level, Study One finds six variables – board size (*Bsize*), institutional shareholders (*OUT_SR*), firm size (*Ln_Fsize*), rate of sales growth (*Growth*), return on assets (*ROA*), and net income (*LN_COM*) – have statistically significant impacts on the amounts of materiality (*LN_MAT*). The impact of these variables on the materiality is generally highlighted by Paragraph 10 of International Standards on Auditing No. 320 that auditors are expected to increase the materiality level when the audit risk is lower and vice versa (IAASB, 2004). Table 5.8 reports that board size (*Bsize*) has a significant and positive relationship with materiality level at the 5% significance level, suggesting that the larger the board, the higher the materiality level. Specifically, an increase of one member in the board leads to a 6.6% increase of the materiality level. This would mean that if the median board size (*Bsize*) increases from 9 to 10, the median *logarithm* of materiality level (*LN_MAT*) will increase from £2.398 to £2.556 million. This result also indicates that auditors consider the board size when performing their judgment in relation to risk assessment and determination, and the extent of tests of details (fewer tests more materiality).

The finding is consistent with the findings of Cohen et al. (2007) who find that control risk assessment increases when the board plays a weak agency role and weak resource dependence role. However, few writers are able to draw on any systematic research into the link between the role of the board and auditor's judgment, such as including risk assessment and determination of audit scope. Therefore, this research highlights the influence of the board size on firm performance to support the results. Based on dependence theory, larger firm board increases ability to bring a pool of available resources and expertise to the firm (Dalton et al., 1999). Larger boards have higher performance because of their greater collective information

(Dalton & Dalton, 2005; Dalton et al., 1999), and this leads to a greater monitoring function (Lehn et al., 2009).

In addition, while ownership is a factor of corporate governance, Study One also finds that, for firms with a higher level of institutional shareholders (*OUT_SR*), auditors increase the amounts of materiality by 0.2% with the *t*-statistic of 5.920. This is statistically significant at the 1% level. This is understandable because institutional ownership, for example, reduces (1) agency problems between agents and shareholders (e.g., Gillan & Starks, 2000); (2) the likelihood of abnormal accruals (e.g., Mitra & Cready, 2005), and (3) the likelihood of going concern opinion (e.g., Abbott et al., 2000) resulting in lower audit risk. Therefore, auditors increase the amounts of materiality in firms with a higher level of institutional ownership. The significant and positive impacts of board size (*Bsize*) and institutional ownership (*OUT_SR*) on the amounts of materiality (*LN_MAT*) confirm that corporate governance elements are statistically significant determinants of the materiality level.

Likewise, firm size positively affects the materiality level at the 1% level of significance. As shown, a 1% increase of assets results in 0.0275 percentage point's increase of materiality level. This shows that auditors use fewer tests of details (increase materiality) with larger firms. The result is not in line with evidence that larger firms have a lesser element for monitoring (Cho, 2002), auditor's report is more conservative for large firms (Reynolds & Francis, 2000), and larger firms are associated with more risk (Subramaniam et al., 2009). However, Sharma (2004) finds no relationship between a firm that has experienced fraud and firm size.

As predicted in H2 (h), the rate of sales growth (*Growth*) is found to significantly and negatively affect materiality level. As Table 5.8 shows, a 1% increase of the rate of growth (*Growth*) leads to decrease the materiality level by 0.003 percentage points (statistically significant at the 5% level with the *t*-statistic equal to -1.980). This indicates that auditors

increase their tests of details (decrease materiality) in such firms. This is because audit failure and audit litigation risk are linked with client-specific factors including a client's growth (Carcello & Palmrose, 1994; Pratt & Stice, 1994), and most of the errors discovered by auditors come from the rate of a client's growth (Hylas & Ashton, 1982).

Consistent with H2 (h), return on assets (*ROA*) is found to significantly and positively affect the amounts of materiality. As can be seen, a 1% increase of *ROA* leads to increase the amounts of materiality by 0.449 percentage points (statistically significant at the 5% level with the *t*-statistic of 2.090). This strong relationship shows that auditors are less likely to find accounting errors (Kinney & McDaniel, 1989), and litigation risks (Pratt & Stice, 1994; Stice, 1991) in firms with good financial conditions. Consistent with the influence of return on assets (*ROA*) on the auditor's judgment of RMM disclosures, net income (*LN_COM*) confirms the relationship between profit of firms and the auditor's judgment. It shows that as the net income increases by 1%, the amounts of materiality increased by 0.055 percentage points. This coefficient is statistically significant at the 5% level with *t*-statistic equal to 2.490.

Table 5.8 Determinants of auditor’s disclosures – materiality level

Variable	Panel A: Random-effects			Panel B: Pooled OLS		
	Coef.	Robust S.E.	t-ratio	Coef.	Robust S.E.	t-ratio
<i>Bsize</i>	0.066**	(0.028)	2.360	0.060***	(0.022)	2.710
<i>NEX</i>	0.016	(0.010)	1.590	0.014**	(0.007)	1.960
<i>Duality</i>	0.308	(0.277)	1.110	0.183	(0.277)	0.660
<i>CEOT</i>	-0.049	(0.043)	-1.150	-0.063	(0.039)	-1.630
<i>NWCH</i>	-0.272	(0.201)	-1.360	-0.557***	(0.166)	-3.360
<i>NFB</i>	-0.056	(0.050)	-1.130	-0.018	(0.049)	-0.360
<i>Active</i>	0.029	(0.026)	1.140	0.058	(0.035)	1.640
<i>IAC</i>	0.014	(0.043)	0.320	0.011	(0.039)	0.280
<i>NCsize</i>	0.043	(0.036)	1.190	0.005	(0.024)	0.200
<i>IDNC</i>	0.001	(0.002)	0.260	0.004	(0.002)	1.640
<i>Ln_Fsize</i>	0.257***	(0.053)	4.840	0.277***	(0.044)	6.280
<i>ROA</i>	0.449**	(0.215)	2.090	0.406**	(0.162)	2.500
<i>LN_COM</i>	0.055**	(0.022)	2.490	0.047*	(0.026)	1.810
<i>PPE</i>	7.04×10^{-07}	(4.68×10^{-07})	1.500	6.27×10^{-07}	(7.11×10^{-07})	0.880
<i>Growth</i>	-0.003**	(0.002)	-1.980	-0.003	(0.002)	-1.490
<i>INVE_RI</i>	0.411	(0.238)	1.730	0.458*	(0.218)	2.100
<i>RICE_RI</i>	0.065	(0.191)	0.340	-0.159	(0.164)	-0.970
<i>LEV</i>	-0.007	(0.004)	-1.590	-0.005	(0.003)	-1.550
<i>COMLX</i>	1.51×10^{-11}	(1.15×10^{-11})	1.310	8.19×10^{-12}	(7.46×10^{-12})	1.100
<i>OUT_SR</i>	0.002***	(0.0003)	5.920	0.003***	(0.000)	8.590
<i>IN_SR</i>	-0.005	(0.007)	-0.620	-0.004	(0.010)	-0.450
Intercept	0.144	(0.753)	0.19	-0.065	(0.680)	-0.100
Year	Yes			Yes		
Industry	Yes			Yes		
<i>R</i> ² (Between)	0.556			0.473		
Obs.	966			966		

Panel A reports the main results of RE estimation of Equation 4.2 on the relationship between materiality level and firm characteristics. Panel B reports the results of OLS estimation of Equation 4.2 for comparison with RE estimation. The dependent variable is *LN_MAT* which refers to Natural logarithm of the total amounts set by the auditors. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *Ln_Fsize*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.6 Sensitivity analysis

In this section, this author reports results of several sensitivity tests to ensure that the empirical regression results are robust and not sensitive to the particular procedure used or to alternative proxies of explanatory variables; this research uses five approaches: (1) changing the measurement of variables; (2) splitting the sample; (3) Two-Stage-Least-Squares (2SLS), (4) Poisson regressions, and (5) Two-limit Tobit model.

5.6.1 Changing measurement of variables

The first test replaced the measurement of the dependent variable *WORDS* with *PER_RISK*. As discussed previously, *WORDS* is measured by the total number of words in RMM disclosures, while *PER_RISK* is measured by the number of words used in per risk. Changing the measurement of variables as a method of robustness checks is not new (e.g., Ahmed et al., 2017; Ali et al., 2017; Gorodnichenko & Schnitzer, 2013; Wintoki, Linck, & Netter, 2012). Table 5.9 Panel A shows that replacing the measurement of the dependent variable does not make any significant change to the results obtained from previous regression. For example, an increase of one member in the board (*Bsize*) increased the disclosures of risks of material misstatement by 8.475 words. Panel A also shows when the audit committee increases the number of meetings by one, the disclosures of risks of material misstatement increased by 12.343 words. However, the use of this approach resulted in a reduction in R-squared (between) from 0.373 to 0.325.

The second robustness test excluded variables related to firm characteristics and governance variable. The omitted firm characteristics variables are firm size (*Ln_Fsize*) and asset structure (*INVE_RI*, *RICE_RI*). These variables are omitted because it is possible that the direction of level of auditor's disclosures is directed by specific firm factors (Stanley, 2011). Furthermore, according to Ball and Foster (1982) and Marston and Shrikes (1996), firm size is used as a

proxy for many influences which recommends that the meaning of firm size cannot be clearly expounded. In addition, firm size and industry composition are used as a proxy for exogenous volatility in economic income (Ball & Shivakumar, 2005). The omitted governance variable is managerial ownership (*IN_SR*). This is omitted because a concern can be raised that the corporate governance elements that are found in this study to have an impact on the levels of auditor's disclosures are driven by some other governance elements, hence multicollinearity problems can arise (Ali et al., 2017).

To check the robustness of the main results on the economic condition of the firm, as in Panel B of Table 5.9, Study One re-run model 4.1 after excluding these independent variables. The results are consistent with main findings; i.e., the coefficient of 0.033 on board size (*Bsize*) in Panel B (t -statistic=2.410) shows that an increase of one member in the board increased the disclosures of risks of material misstatement by 3.3%. This confirms that the independent variables are not influenced by other independent variables used in this study model. In addition, R^2 (between) decreases after excluding these variables from 37.3 percent to 36.4 percent, suggesting that (as a general rule of thumb) these excluded variables should remain in the model.

As a further check on the robustness of the previous results, Study One re-run this study model (4.1) without controlling for year and industry effects to ensure that this study's results are not influenced by time and industry. Panel A of Table 5.10 presents the results. Again, results in Table 5.10 (Panel A) are consistent with the previous results except for board. Lastly, Raghunandan and Rama (2006) delete outlier observations in a disclosure study. In this study, observations in Energy sector achieve the highest RMM disclosures with a mean of 1478.519 words, while the lowest RMM disclosures are for Information Technology sector with a mean of 919.133. This may lead a concern that Energy sector influences Study One results. Therefore and following Raghunandan and Rama (2006), this research excluded Energy sector from this

study data and re-run the model. Table 5.10 in Panel B presents results after excluding Energy sector and reducing the size of the sample. It shows that this approach does not make any significant change to this study's results.

Table 5.9 Determinants of auditor’s disclosures – the risks of material misstatement: Alternative measure of dependent variable and exclusion of independent variables

Variable	Panel A: <i>PER_RISK</i>				Panel B: <i>LN_WORDS</i>			
	Coef.	S.E.	t-ratio	P> Z	Coef.	S.E.	t-ratio	P> Z
<i>Bsize</i>	8.475*	(5.023)	1.690	0.092	0.033**	(0.014)	2.410	0.016
<i>NEX</i>	-0.155	(0.690)	-0.220	0.814	0.000	(0.002)	-0.070	0.942
<i>Duality</i>	-4.134	(41.578)	-0.100	0.923	0.076	(0.108)	0.700	0.482
<i>CEOT</i>	-16.411**	(8.652)	-1.900	0.032	-0.027	(0.021)	-1.270	0.203
<i>NWCH</i>	-82.139***	(36.494)	-2.250	0.009	-0.283***	(0.075)	-3.750	0.000
<i>NFB</i>	2.427	(12.780)	0.190	0.834	0.015	(0.030)	0.500	0.620
<i>Active</i>	12.343**	(5.021)	2.460	0.012	0.030**	(0.014)	2.160	0.030
<i>IAC</i>	-0.622	(11.855)	-0.050	0.944	-0.035	(0.027)	-1.280	0.202
<i>NCsize</i>	9.217	(7.831)	1.180	0.155	0.029*	(0.016)	1.820	0.069
<i>IDNC</i>	0.982	(0.626)	1.570	0.115	0.001	(0.002)	0.560	0.578
<i>Ln_Fsize</i>	12.632	(13.270)	0.950	0.254				
<i>ROA</i>	-114.263	(64.195)	-1.780	0.180	-0.409**	(0.185)	-2.210	0.027
<i>LN_COM</i>	-21.027***	(6.192)	-3.400	0.000	-0.060***	(0.011)	-5.280	0.000
<i>PPE</i>	0.0001	(0.001)	0.760	0.287	-0.000***	(0.000)	-3.530	0.000
<i>Growth</i>	1.242***	(0.252)	4.920	0.000	0.003***	(0.001)	3.630	0.000
<i>INVE_RI</i>	-9.487	(43.998)	-0.220	0.829				
<i>RICE_RI</i>	47.741	(35.642)	1.340	0.180				
<i>LEV</i>	-0.770	(0.337)	-2.280	0.171	-0.003**	(0.002)	-2.110	0.035
<i>OUT_SR</i>	5.775**	(0.090)	2.290	0.013	0.001***	(0.000)	4.190	0.000
<i>COMLX</i>	6.08×10 ⁻⁹	(2.45×10 ⁻⁹)	2.480	0.106	0.000***	(0.000)	3.000	0.003
<i>IN_SR</i>	1.058	(1.722)	0.610	0.521				
Intercept	219.162	(162.448)	1.350	0.060	6.400	0.264	24.230	0.000
Year	Yes				Yes			
Industry	Yes				Yes			
R ² (Between)	0.325				0.364			
Obs.	966				966			

Panel A reports the results of RE estimation of Equation 4.1 on the relationship between RMM and firm characteristics using alternative measure of RMM, while Panel B reports the results of RE estimation of Equation 4.1 after excluding independent variables including *Ln_Fsize*, *INVE_RI*, *LN_RICS*, and *IN_SR*. Dependent variables are *PER_RISK* which refers to number of words per risk, and *LN_WORDS* which refers to natural logarithm of the total number of words in RMM disclosures. The rest are independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 5.10 Determinants of auditor’s disclosures – the risks of material misstatement: Dropping the effects of industry and year and the excluding of Energy sector

Variable	Panel A: <i>LN_WORDS</i>				Panel B: <i>LN_WORDS</i>			
	Coef.	S.E.	t-ratio	P> Z	Coef.	S.E.	t-ratio	P> Z
<i>Bsize</i>	0.016	(0.013)	1.230	0.219	0.034**	(0.014)	2.490	0.013
<i>NEX</i>	-0.001	(0.002)	-0.590	0.552	0.001	(0.003)	0.510	0.613
<i>Duality</i>	0.054	(0.108)	0.500	0.620	0.079	(0.109)	0.720	0.469
<i>CEOT</i>	-0.027	(0.021)	-1.250	0.211	-0.024	(0.022)	-1.120	0.264
<i>NWCH</i>	-0.320***	(0.079)	-4.060	0.000	-0.294***	(0.082)	-3.600	0.000
<i>NFB</i>	0.056**	(0.028)	2.010	0.044	0.007	(0.030)	0.230	0.819
<i>Active</i>	0.024*	(0.014)	1.800	0.072	0.033**	(0.014)	2.360	0.018
<i>IAC</i>	-0.034	(0.027)	-1.260	0.207	-0.039	(0.028)	-1.410	0.159
<i>NCsize</i>	0.029	(0.015)	1.860	0.063	0.030	(0.016)	1.870	0.062
<i>IDNC</i>	0.003	(0.002)	1.530	0.127	0.001	(0.002)	0.650	0.517
<i>Ln_Fsize</i>	0.008	(0.024)	0.310	0.755	-0.001	(0.026)	-0.050	0.959
<i>ROA</i>	-0.383**	(0.194)	-1.970	0.048	-0.358*	(0.201)	-1.780	0.075
<i>LN_COM</i>	-0.071***	(0.012)	-5.680	0.000	-0.068***	(0.013)	-5.170	0.000
<i>PPE</i>	-0.000***	(0.000)	-3.130	0.002	-0.0001***	(0.000)	-3.360	0.001
<i>Growth</i>	0.004***	(0.001)	4.260	0.000	0.003***	(0.001)	3.310	0.001
<i>INVE_RI</i>	0.023	(0.012)	1.940	0.052	0.029*	(0.017)	1.700	0.089
<i>RICE_RI</i>	0.024	(0.018)	1.350	0.177	0.021	(0.020)	1.090	0.276
<i>LEV</i>	-0.003**	(0.002)	-2.000	0.045	-0.003**	(0.002)	-2.030	0.042
<i>OUT_SR</i>	0.001***	(0.000)	2.880	0.004	0.001***	(0.000)	3.200	0.001
<i>COMLX</i>	0.0003***	(0.000)	3.320	0.001	0.0006***	(0.000)	3.290	0.001
<i>IN_SR</i>	0.013***	(0.005)	2.830	0.005	0.004	(0.005)	0.850	0.396
Intercept	6.115	(0.248)	24.680	0.000	6.400	(0.264)	24.230	0.000
Year effects	No				Yes			
Industry effects	No				Yes			
<i>R</i> ² (Between)	0.368				0.385			
Obs.	966				936			

Panel A reports the results of RE estimation of Equation 4.1 on the relationship between RMM and firm characteristics after dropping the effects of industry and year, while Panel B reports the results of RE estimation of Equation 4.1 after excluding Energy sector. Dependent variable is *LN_WORDS* which refers to natural logarithm of the total number of words in RMM disclosures. The rest are independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.6.2 Splitting the sample

The second approach used in Study One to reduce the possibility that the main results are sensitive to the size of the sample is to split the sample. This is because, for example, some type of firms (1) is in a category that discloses more information (Ali et al., 2017) and (2) has different levels of pressure put by capital providers (Alshammari, 2014). Some researchers split the sample based on the value of Y (dependent variable) or value of X (independent variable). However, a number of problems will occur if one divides a sample based on the value of Y, unless the decomposition of the regression coefficients by the levels of Y is (lower levels), neutral (middle), and enhanced values (upper levels) (Lipovetsky, 2012). Therefore, this study splits the sample based on the value of X. Dividing a sample based on firm characteristics is not new. For instance, Fazzari, Hubbard, and Petersen (1987) divide the sample based on their degree of financial constraints, while Whited (1992) divides the sample based on whether the firm has a bond rating at the beginning of the sample period.

Study One, therefore, divides the sample based on the value of X; that is, firm size (large firms and non-large firms). Firm size is one of the main characteristics of a firm. Firm size influences (1) agency cost and internal audit budget (Carcello et al., 2005); (2) auditor's judgment (Wright & Wright, 1997); (3) going concern audit opinion (Krishnan & Krishnan, 1996); (4) audit fees (Simunic, 1980); and (5) the length of the cash conversion cycle (Moss & Stine, 1993). Hence, it is reasonable to argue that larger firms have complex transactions affecting the level of RMM disclosures compared to non-large firms in the sample. Firm size in this section is calculated by the number of employees. According to the Business Population Estimates of the U.K. Department for Business, Energy and Industrial Strategy, large business is any business with greater than 250 employees, while small and medium-sized companies (non-large) are any business with fewer than 250 employees (BIS, 2017, p. 3). Hence, this study classifies a firm as a large firm if the firm has 250 employees and a firm as a non-large firm if the firm has less

than 250 employees. Table 5.11 presents the random-effect regression results of the model (4.1). For large firms (n=918), corporate governance elements are significantly positively associated with auditor's disclosures (Panel A). Again, the results are similar to those reported in Table 5.7.

For non-large firms (n=147), corporate governance elements of medium and small firms do not seem to be associated with auditor's disclosures of RMM (reported in Panel B). This is more likely to be because of unequal sample size. Hence, this study further split the sample based on the median rate of sales growth (high growth firms = 483, low growth firms =483). Splitting the sample based on the type of risks (high risk/low risk) is not new (e.g., Raghunandan & Rama, 2006). Moreover, sales growth is a risk factor to auditors. This is because, as argued by, Hylas and Ashton (1982) sales growth is positively associated with transaction errors and audit failure and risk. Hence, the sample is partitioned on the basis of sales growth to ensure that the results in the main results are not driven by the rate of sells growth. As indicated in Table 5.12, the results show that corporate governance elements are significantly positively associated with auditor's disclosures of the risks of material misstatement and these results are similar to those reported in Table 5.7.

Table 5.11 Determinants of auditor’s disclosures – the risks of material misstatement: Split sample regression

Variable	Large Firms				Non-Large firms			
	Panel A: Random-effects				Panel B: Random-effects			
	Coef.	Std. Err.	Z	P>z	Coef.	Std. Err.	z	P>z
<i>Bsize</i>	0.028	(0.015)	1.870	0.062*	0.038	(0.032)	1.180	0.239
<i>NEX</i>	-0.001	(0.002)	-0.360	0.717	0.002	(0.004)	0.470	0.638
<i>Duality</i>	0.074	(0.116)	0.640	0.525	0.120	(0.398)	0.300	0.762
<i>CEOT</i>	-0.049	(0.024)	-2.040	0.041**	0.100	(0.048)	2.070	0.038**
<i>NWCH</i>	-0.279	(0.080)	-3.500	0.000***	-0.425	(0.322)	-1.320	0.187
<i>NFB</i>	0.015	(0.033)	0.450	0.655	0.021	(0.073)	0.290	0.774
<i>Active</i>	0.031	(0.015)	2.120	0.034**	0.011	(0.038)	0.290	0.771
<i>IAC</i>	-0.032	(0.030)	-1.080	0.279	-0.081	(0.069)	-1.170	0.241
<i>NCsize</i>	0.029	(0.018)	1.670	0.094*	0.092	(0.041)	2.220	0.027**
<i>IDNC</i>	0.000	(0.002)	0.240	0.808	0.003	(0.004)	0.690	0.490
<i>Ln_Fsize</i>								
<i>ROA</i>	-0.380	(0.194)	-1.960	0.050**	0.958	(1.017)	0.940	0.346
<i>LN_COM</i>	-0.077	(0.013)	-5.870	0.000***	-0.039	(0.033)	-1.200	0.230
<i>PPE</i>	-1.51E-06	(4.18E-07)	-3.610	0.000***	-1.69E-06	(1.36E-06)	-1.24	0.214
<i>Growth</i>	0.004	(0.001)	3.310	0.001***	0.002	(0.002)	1.000	0.316
<i>INVE_RI</i>	0.022	(0.017)	1.280	0.201	0.036	(0.037)	0.990	0.325
<i>RICE_RI</i>	0.025	(0.019)	1.340	0.181	-0.040	(0.042)	-0.950	0.341
<i>LEV</i>	-0.003	(0.002)	-1.970	0.049**	0.032	(0.023)	1.380	0.167
<i>COMLX</i>	0.000	(0.000)	3.040	0.002***	0.000	(0.000)	-0.020	0.985
<i>OUT_SR</i>	0.001	(0.000)	2.990	0.003***	0.001	(0.001)	1.800	0.072*
<i>IN_SR</i>	0.004	(0.005)	0.750	0.453	-0.012	(0.010)	-1.190	0.234
Intercept	6.214	(0.315)	19.700	0.000***	6.348	(0.647)	9.81	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
R ² (Between)	0.385				0.447			
Obs.	918				147			

Panel A and B report the robustness results of RE estimation of Equation 4.1 on the relationship between RMM and firm characteristics using split a sample approach based on firm size. Firms are classified as “large firms” if firm’s number of employees is greater than 250 and firms classified as “non-large firms” otherwise. Note that the independent variable that is firm size (*Ln_Fsize*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosure. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. Standard errors are in parentheses *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 5.12 Determinants of auditor’s disclosures – the risks of material misstatement: Restricted sample regression

Variable	Random-effects			
	Coef	Std. Err.	Z	P>z
<i>Bsize</i>	0.061	(0.023)	2.710	0.007***
<i>NEX</i>	0.001	(0.004)	0.270	0.786
<i>Duality</i>	-0.013	(0.152)	-0.090	0.931
<i>CEOT</i>	-0.025	(0.037)	-0.660	0.510
<i>NWCH</i>	-0.302	(0.104)	-2.900	0.004***
<i>NFB</i>	-0.011	(0.046)	-0.250	0.802
<i>Active</i>	0.021	(0.021)	1.000	0.318
<i>IAC</i>	-0.017	(0.046)	-0.360	0.717
<i>NCsize</i>	0.041	(0.025)	1.660	0.098
<i>IDNC</i>	0.003	(0.002)	1.070	0.287
<i>Ln_Fsize</i>	-0.015	(0.044)	-0.350	0.729
<i>ROA</i>	-0.398	(0.266)	-1.500	0.135
<i>LN_COM</i>	-0.078	(0.030)	-2.570	0.010***
<i>PPE</i>	-7.26E-07	(9.35E-07)	-0.78	0.438
<i>Growth</i>				
<i>INVE_RI</i>	0.011	(0.026)	0.440	0.659
<i>RICE_RI</i>	0.007	(0.026)	0.260	0.793
<i>LEV</i>	0.001	(0.002)	0.270	0.790
<i>COMLX</i>	0.001	(0.002)	0.270	0.729
<i>OUT_SR</i>	0.001	(0.000)	2.340	0.019**
<i>IN_SR</i>	0.001	(0.008)	0.090	0.925
Intercept	6.284	(0.577)	10.890	0.000
Year	Yes			
Industry	Yes			
R ² (Between)	0.348			
Obs.	483			

This table reports the robustness results of RE estimation of Equation 4.1 on the relationship between RMM and firm characteristics using a restricted sample approach based on the rate of firm’s sales growth. Firms are classified as “high rate of growth” if firm’s sales growth is greater than the median firm’s sales growth of the sample and “firms with low sales growth” otherwise. Note that the independent variable that is rate of sales growth (*Growth*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosures. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *LN_Fsize*, *ROA*, *LN_COM*, *PPE*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.6.3 Two-Stage-Least-Squares (2SLS)

This study argues that corporate governance elements affect auditor's disclosure of RMM. However, one may raise a concern about endogeneity between these variables arguing that the disclosures of RMM can actually affect corporate governance. In other words, one may argue that when auditors disclose the risks of material misstatement in their reports, firms respond to

his/her disclosures and improve their internal controls and governance, hence reverse causality (if any). It is important to mention that it is difficult to eliminate endogeneity completely (Ali, Liu, & Su, 2018). However, a number of tests could be used including the use of 2SLS analysis to minimize the effect of any endogeneity (Adams & Ferreira, 2009). In applying Two-Stage-Least-Squares (2SLS), the challenge in determinants studies including this study is that they treat all independent variables equally, while 2SLS assumption is to focus on particular independent variables. To this end, this section focuses on two independent variables that are the size of the nomination committee (*NCsize*) and the board size (*Bsize*). The reason behind this is that (as it can be seen in Panel A of Table 5.13), board size (*Bsize*) and the size of nomination committee (*NCsize*) have the greatest impact on the dependent variable. This is because *t*-values of board size (*t*= 2.638) and the nomination committee (*t*= 2.272) are greater than other corporate governance variables *t*-values. This indicates that these variables are the most important variables in the model. In addition, standardized coefficients of board size (coded coefficients = 0.080) and the nomination committee (coded coefficients = 0.061) are greater than other corporate governance variables (Panel B). Again, this shows that these variables are the most important independent variables in the regression model. Therefore, this study focuses on the size of nomination committee (*NCsize*) first then the second independent variable that is board size (*Bsize*).

Table 5.13 Determinants of auditor’s disclosures – the risks of material misstatement: T-values and standardized coefficients tests

Variable	T-values test				Standardized coefficients test			
	Panel A: Random-effects				Panel B: Random-effects			
	Coef. Std.	Err.	t	P>z	Coded. Coef.	Err.	z	P>z
<i>Bsize</i>	0.036	0.014	2.638	0.008	0.080	0.030	2.640	0.008
<i>NEX</i>	0.000	0.002	0.244	0.807	0.000	0.002	0.240	0.807
<i>Duality</i>	0.086	0.112	0.769	0.442	0.086	0.112	0.770	0.442
<i>CEOT</i>	-0.020	0.022	-0.920	0.357	-0.020	0.022	-0.920	0.357
<i>NWCH</i>	-0.383	0.077	-4.944	0.000	-0.383	0.077	-4.940	0.000
<i>NFB</i>	0.028	0.029	0.946	0.344	0.028	0.029	0.950	0.344
<i>Active</i>	0.037	0.014	2.651	0.008	0.061	0.023	2.650	0.008
<i>IAC</i>	-0.024	0.028	-0.844	0.399	-0.024	0.028	-0.840	0.399

<i>NCsize</i>	0.038	0.017	2.272	0.023	0.061	0.027	2.270	0.023
<i>IDNC</i>	0.002	0.002	1.109	0.267	0.002	0.002	1.110	0.267
Intercept	6.221	0.276	22.502	0.000	6.922	0.255	27.120	0.000
Year	Yes				Yes			
Industry	Yes				Yes			
<i>R</i> ² (Between)	0.258				0.447			
Obs.	966				147			

Panels A and B report the robustness results of RE estimation of Equation 4.1 on the relationship between RMM and firm characteristics. The dependent variable is *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosures. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, and *IDNC* are the firm characteristics independent variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Finding an instrument (*X*) that is correlated with the endogenous variable that is the size of nomination committee (*NCsize*) but uncorrelated with the dependent variable that is *LN_WORD* is not challenging in this case because the size nomination committee can be converted to a percentage. Therefore, following Ahmed et al. (2017) and Liu, Wei, and Xie (2014), the instrumental variable (*X*) of *NCsize* in this research is the percentage of directors in nomination committee calculated as the number of directors in nomination committee minus total the number of directors in nomination committee in the firm's industry divided by the number of board members minus the total number of board members in the firm's industry. This instrument includes the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), independence of audit committee (*IAC*), and firm size (*Ln_Fsize*); these are mainly from previous research (Alford & Berger, 1999; Hail, 2002; Hope, 2003; Lang & Lundholm, 1996). The estimated model is as follows:

$$NCsize_{it} = \partial_0 + \partial_1 X + \partial_2 NEX_{it} + \partial_3 Duality_{it} + \partial_4 NFB_{it} + \partial_5 IAC_{it} + \partial_6 Ln_Fsize_{it} + \zeta_{1it} \quad (5.1)$$

where *NCsize* is size of the nomination committee. *X*, *NEX*, *Duality*, *NFB*, *IAC*, *Ln_Fsize*, *ROA*, and *LEV* are instruments variables. These variables are previously described in Table 4.1. Panel A of Table 5.14 presents results from estimation Equation 5.1 that is the results of the first stage regression, where the size of the nomination committee (*NCsize*) is replaced by the fitted

values from the first-stage regression. As can be seen in Panel A of Table 5.14, all the instruments variables are correlated with the endogenous variable that is the size of nomination committee (*NCsize*) but uncorrelated with the dependent variable that is natural log of total number of words in RMM disclosures in the new auditor's report *LN_WORD* in model 4.1. This supports that instruments variables meet the exogenous requirement.

Before applying Two-Stage-Least-Squares (2SLS), a number of tests should be adopted to demonstrate whether instruments are weak, whether instruments are valid, and whether endogeneity problem takes place. As it can be seen in endogeneity test (Table 5.14 of Panel B), F value is 94.327. This is much larger than any of critical values shown in the Table. Therefore, the null hypothesis is rejected that instruments used in this study are weak. In addition, the null hypothesis is that the size of the nomination committee is an exogenous variable. The p-value of Durbin test is 0.834 and p-value of Wu-Hausman test is 0.835 which is larger than 0.05. As a result, the null hypothesis is not rejected that the size of the nomination committee is an exogenous variable. This indicates that endogeneity problem from simultaneity bias is not present in this study.

However, Durbin and Wu-Hausman tests may not fit well in this study because this study uses panel data. Hence, this study uses more appreciate tests like Sargan test. Panel C presents the result of the endogeneity test using Sargan. The results show that the size of the nomination committee is not an endogenous variable to the auditor's disclosures in the extended auditor's report because p-value of endogeneity test equals 0.472. This is larger than the critical value of (0.05). As a result, the null hypothesis is not rejected that the size of the nomination committee (*NCsize*) is an exogenous variable. This indicates that the endogeneity problem from simultaneity bias is not a threat in this study. In addition, p-value of Sargan statistic equals 0.637 which supports the null hypothesis that is the instrument set is valid and the model is correctly specified and p-value of Underidentification test equals 0.000 which rejects the null

hypothesis that instruments are weak. Again, this test shows that there is no endogeneity problem in the size of the nomination committee (*NCsize*).

Table 5.14 Estimation the size of the nomination committee (*NCsize*)

Panel A: First stage regression of the size of nomination committee (<i>NCsize</i>)				
	Coef.	Std. Err.	Z	P> Z
<i>X</i>	6.965	(0.164)	42.530	0.000***
<i>NEX</i>	-0.005	(0.002)	-2.500	0.012**
<i>Duality</i>	0.256	(0.111)	2.300	0.021**
<i>NFB</i>	0.254	(0.031)	8.310	0.000***
<i>IAC</i>	0.359	(0.028)	12.800	0.000***
<i>Ln_Fsize</i>	0.153	(0.023)	6.550	0.000***
Intercept	-1.764	(0.339)	-5.200	0.000***
Year	Yes			
Industry	Yes			
R-squared	0.771			
Obs.	966			

Panel A reports the robustness results of RE estimation of Equation 5.1. Dependent variable is the size of the nomination committee (*NCsize*). The instrument variables are the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), independence of audit committee (*IAC*), and firm size (*Ln_Fsize*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B: Endogeneity test of *NCsize*

Variable	R-sq.	R-sq.	R-sq.	F(1,963)	Prob>F
<i>INSV</i>	0.126	0.125	0.089	94.327	0.000
Minimum eigenvalue statistic = 94.3266					
Critical Values # of endogenous					
Ho: Instruments are weak					
	10%	15%	20%	25%	10%
2SLS relative bias	(not available)				
2SLS Size of nominal 5% Wald test	16.38	8.96	6.66	5.53	16.38
LIML Size of nominal 5% Wald test	16.38	8.96	6.66	5.53	16.38
Tests of endogeneity					
H0: variables are exogenous					
Durbin (score) chi2(1)		0.044		(p = 0.8342)	
Wu-Hausman F(1,962)		0.044		(p = 0.8345)	

Panel C: Endogeneity test of *NCsize*

Underidentification test (Anderson canon. corr. LM statistic):		556.100
	Chi-sq(5) P-val =	0.000
Sargan statistic (Overidentification test of all instruments):		2.539
	Chi-sq(4) P-val =	0.6376
Endogeneity test of endogenous regressors:		0.519
	Chi-sq(1) P-val=	0.4712
Regressors tested:	(<i>NCsize</i>)	
Instrumented:	(<i>NCsize</i>)	
Included instruments:	(<i>Bsize</i>), (<i>CEOT</i>), (<i>NWCH</i>), (<i>Active</i>), (<i>IDNC</i>), (<i>ROA</i>), (<i>LN_COM</i>), (<i>PPE</i>), (<i>Growth</i>), (<i>INVE_RI</i>), (<i>RICE_RI</i>), (<i>LEV</i>), (<i>COMLX</i>), (<i>OUT_SR</i>), and (<i>IN_SR</i>).	
Excluded instruments:	(<i>NEX</i>), (<i>Duality</i>), (<i>NFB</i>), (<i>IAC</i>), and (<i>Ln_Fsize</i>).	

To address potential endogeneity between board size (*Bsize*) and total number of words in RMM disclosures in the extended auditor’s report (*LN_WORDS*), this research estimates the relation between these two variables using a two-stage regression approach. In the first stage, this research estimates board size (*Bsize*) based on a set of instrumental variables that are identified from prior research. Following Chen and Al-Najjar (2012), these instruments include the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), independence of the audit committee (*IAC*), firm size (*Ln_Fsize*), profitability (*ROA*), and firm leverage (*LEV*). The estimated model is as follows:

$$Bsize_{it} = \partial_0 + \partial_1 NEX_{it} + \partial_2 Duality_{it} + \partial_3 NFB_{it} + \partial_4 IAC_{it} + \partial_5 Ln_Fsize_{it} + \partial_6 ROA_{it} + \partial_7 LEV_{it} + \zeta_{1it} \quad (5.2)$$

Where *Bsize* is board size. *NEX*, *Duality*, *NFB*, *IAC*, *Ln_Fsize*, *ROA*, and *LEV* are instruments variables. These variables are previously described in Table 4.1.

Table 5.15 in Panel A presents results from estimating Equation 5.2; that is, the results of the first stage regression. As can be seen in Panel A of Table 5.15, all the instrumental variables are correlated with the endogenous variable that is board size (*Bsize*) except return on assets (*ROA*), and leverage (*LEV*). Panel B of Table 5.15 presents the results of the endogeneity test.

The results show that board size (*Bsize*) is not an endogenous variable to the auditor's disclosures of RMM because p-value of the endogeneity test equals 0.930. This is larger than critical value (0.05). As a result, the null hypothesis is not rejected that is board size (*Bsize*) is an exogenous variable. This indicates that the endogeneity problem from simultaneity bias is not a threat in this study.

Table 5.15 Estimation of board size (*Bsize*)

Panel A: First stage regression of board size (<i>Bsize</i>)				
	Coef.	Std. Err.	Z	P> Z
<i>NEX</i>	-0.011	(0.004)	-2.720	0.006***
<i>Duality</i>	0.846	(0.238)	3.550	0.000***
<i>CEOT</i>				
<i>NWCH</i>				
<i>NFB</i>	0.687	(0.064)	10.680	0.000***
<i>Active</i>				
<i>IAC</i>	0.594	(0.059)	9.990	0.000***
<i>NCsize</i>				
<i>IDNC</i>				
<i>Ln_Fsize</i>	0.317	(0.048)	6.550	0.000***
ROA	0.073	(0.473)	0.150	0.877
<i>LN_COM</i>				
<i>PPE</i>				
<i>Growth</i>				
<i>INVE_RI</i>				
<i>RICE_RI</i>				
LEV	0.006	(0.003)	1.630	0.103
<i>COMLX</i>				
<i>OUT_SR</i>				
<i>IN_SR</i>				
Intercept	4.016	(0.668)	6.020	0.000***
Year	Yes			
Industry	Yes			
<i>R</i> ² (Between)	0.477			
Obs.	966			

Panel A reports the robustness results of RE estimation of Equation 5.2. Dependent variable is board size (*Bsize*). The instrument variables are proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), and independence of audit committee (*IAC*), firm size (*Ln_Fsize*), profitability (*ROA*), and firm leverage (*LEV*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B: Endogeneity test of *Bsize*

Underidentification test (Anderson canon. corr. LM statistic):		112.359
	Chi-sq(7) P-val =	0.000
Sargan statistic (Overidentification test of all instruments):		5.229
	Chi-sq(6) P-val =	0.515

Endogeneity test of endogenous regressors:		0.008
	Chi-sq(1) P-val=	0.930
Regressors tested:	(<i>Bsize</i>).	
Instrumented:	(<i>Bsize</i>).	
	(<i>CEOT</i>), (<i>NWCH</i>), (<i>Active</i>),	
Included instruments:	(<i>NCsize</i>), (<i>IDNC</i>), (<i>LN_COM</i>),	
	(<i>PPE</i>), (<i>Growth</i>) (<i>COMLX</i>),	
	(<i>OUT_SR</i>), and (<i>IN_SR</i>).	
	(<i>NEX</i>), (<i>Duality</i>), (<i>NFB</i>),	
Excluded instruments:	(<i>IAC</i>), and (<i>Ln_Fsize</i>), (<i>ROA</i>),	
	and (<i>LEV</i>).	

However, the instrument variables used in model 5.2 and used in prior research may not be well fitted because return on assets (*ROA*) and leverage (*LEV*) are uncorrelated with the model 5.2 dependent variable that is board size (*Bsize*). To this end, this study re-estimates the instruments and includes only variables that are correlated with board size (*Bsize*) and uncorrelated with model 4.1 dependent variable; that is, total number of words in RMM disclosures (*LN_WORDS*). Panel A of Table 5.16 shows that the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), independence of audit committee (*IAC*), and firm size (*Ln_Fsize*) are correlated with *Bsize* and uncorrelated with *LN_WORDS*. Again, as Panel B of Table 5.16 shows, p-value = 0.868 from the endogeneity test is large which means that board size (*Bsize*) is not an endogenous variable. In addition, p-value of the Sargan statistic equals 0.401 which supports the null hypothesis that is the instrument set is valid and the model is correctly specified. P-value from the Underidentification test equals 0.000 which rejects the null hypothesis that is instruments are weak.

Table 5.16 Estimation of board size (*Bsize*)

Panel A: First stage regression of board size (<i>Bsize</i>)				
	Coef.	Std. Err.	Z	P> Z
<i>NEX</i>	-0.011	(0.004)	-2.750	0.006***
<i>Duality</i>	0.856	(0.238)	3.590	0.000***
<i>NFB</i>	0.689	(0.064)	10.740	0.000***
<i>IAC</i>	0.593	(0.059)	9.980	0.000***
<i>Ln_Fsize</i>	0.325	(0.047)	6.870	0.000***
Intercept	3.961	(0.663)	5.970	0.000***
Year	Yes			

Industry	Yes
R-squared	0.476
Obs.	966

Panel A reports the robustness results of RE estimation of Equation 5.2 after dropping return on assets (*ROA*) and leverage (*LEV*). Dependent variable is board size (*Bsize*). The instrument variables are proportion of non-executive directors (*NEX*), CEO duality (*Duality*), the number of women on the board (*NFB*), and independence of audit committee (*IAC*), and firm size (*Ln_Fsize*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B: Endogeneity test of *Bsize*

Underidentification test (Anderson canon. corr. LM statistic):		111.405
	Chi-sq(5) P-val =	0.000
Sargan statistic (overidentification test of all instruments):		4.031
	Chi-sq(4) P-val =	0.4019
Endogeneity test of endogenous regressors:		0.028
	Chi-sq(1) P-val=	0.868
Regressors tested:	(<i>Bsize</i>).	
Instrumented:	(<i>Bsize</i>).	
	(<i>CEOT</i>), (<i>NWCH</i>), (<i>Active</i>),	
	(<i>NCsize</i>), (<i>IDNC</i>), (<i>LN_COM</i>),	
Included instruments:	(<i>PPE</i>), (<i>Growth</i>) (<i>COMLX</i>),	
	(<i>OUT_SR</i>), and (<i>IN_SR</i>).	
Excluded instruments:	(<i>NEX</i>), (<i>Duality</i>), (<i>NFB</i>), (<i>IAC</i>), and	
	(<i>Ln_Fsize</i>).	

5.6.4 Poisson regression model

As mentioned earlier, the dependent variable used in Study One is the disclosures of risks of material misstatement (*WORDS*) and measured by counting the number of words in the risks of material misstatement paragraph. This indicates that this variable is a count variable and takes only non-negative integer values. A count variable and non-negative integer values could be *the number of* female directors, the number of male directors, and the number of non-executive directors. As such, Poisson regression analysis could be used (Farrell & Hersch, 2005). Following Donnelly and Mulcahy (2008) who provide a positive association between voluntary disclosure and the number of nonexecutive directors on the board, Ghosh (2010) who examines whether ownership structure matters for auditor choice and whether earnings management impinges on auditor behavior, and McKnight and Weir (2009) who study the influence of governance and ownership elements on agency costs, Study One uses Poisson

regression⁴⁴ model as a further check on the robustness of the main results. To provide a full use of this log-linear model, Table 5.17 shows the results on the use of Panel-data random-effects model Poisson regressions, panel-data fixed-effects model Poisson regressions, and panel-data ordinary least squares model Poisson regressions and after restricting the regressions on the factors that are found to influence the dependent variable. The results of these Poisson regressions are consistent with the main results of Study One i.e., corporate governance via controlling opportunistic management behavior affect auditor's judgment of the risks of material misstatement. This concludes that the main results of this study are robust to alternative estimation methods.

⁴⁴ The use of Poisson regression model was recommended by Professor Jeffrey Wooldridge, an American econometrician at Michigan State University, in the field of corporate governance and agency costs.

Table 5.17 Determinants of auditor’s disclosures – the risks of material misstatement: Poisson regression

Variable	Panel A: RE Poisson regression			Panel B: FE Poisson regression			Panel C: OLS Poisson regression		
	Coef.	Std. Err.	z	Coef.	Std. Err.	z	Coef.	Std. Err.	z
<i>Bsize</i>	0.005***	(0.001)	4.090	0.005***	(0.001)	3.690	0.032***	(0.001)	58.120
<i>NWCH</i>	-0.174***	(0.009)	-18.380	-0.172***	(0.010)	-18.040	-0.124***	(0.004)	-35.210
<i>Active</i>	0.014***	(0.001)	13.820	0.014***	(0.001)	13.630	0.021***	(0.001)	34.520
<i>NCsize</i>	0.009***	(0.002)	5.640	0.010***	(0.002)	5.900	0.023***	(0.001)	36.050
<i>ROA</i>	-0.369***	(0.025)	-14.910	-0.370***	(0.025)	-14.830	-0.530***	(0.011)	-48.970
<i>LN_COM</i>	-0.027***	(0.001)	-27.990	-0.027***	(0.001)	-27.560	-0.060***	(0.001)	-113.990
<i>PPE</i>	-1.81E-07***	(2.60E-08)	-6.960	-1.81E-07***	(2.61E-08)	-6.950	-2.81E-07***	(1.65E-08)	-17.060
<i>Growth</i>	0.003***	(0.000)	46.840	0.003***	(0.000)	46.850	0.002***	(0.000)	40.040
<i>INVE_RI</i>	-0.003	(0.002)	-1.480	-0.005**	(0.002)	-2.060	0.022***	(0.001)	33.450
<i>LEV</i>	-0.003***	(0.000)	-19.800	-0.003***	(0.000)	-19.890	0.000	(0.000)	-0.470
<i>COMLX</i>	9.80E-12***	(2.17E-12)	4.510	6.67E-12	(2.36E-12)	2.820	1.76E-11***	(1.93E-13)	91.58
<i>OUT_SR</i>	0.000***	(0.002)	3.540	0.000***	(0.000)	2.380	0.001***	(7.59E-06)	85.100
Intercept	7.145***	(0.140)	50.850				6.324***	(0.008)	768.540
Year	Yes			Yes			Yes		
Industry	Yes			Yes			Yes		
Groups	322			322			322		
log-Likelihood	-37734.287			-34964.415			-110497.480		
Pseudo R2							0.316		
Obs.	966			966			966		

Panel A reports random-effects model Poisson regressions, Panel B reports fixed-effects model Poisson regressions, and Panel C reports ordinary least squares model Poisson regressions on the relationship between RMM proxied number of words in RMM disclosures and firm characteristics. The dependent variable is *WORD* which refers to the total number of words in RMM disclosures. *Bsize*, *NWCH*, *Active*, *NCsize*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *LEV*, *COMLX*, and *OUT_SR* are the firm characteristics independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.6.5 Two-limit Tobit model

Figure 5.4 shows the distribution of the dependent variable used in Study One; that is, the disclosures of risks of material misstatement (*WORDS*). Given this distribution, one might argue that there is a right-censoring in the dependent variable as there are some cases with scores of + 3000. If this is the case, the ordinary least squares regression method is, therefore, an inappropriate method to utilize.

To accommodate the censored dependent variable, this study follows Tobin (1958) and uses the two-limit Tobit model. The results (using two-limit Tobit model) are tabulated in Table 5.18. Table 5.18 shows the estimated coefficient and *t*-statistics with significance level of the two-limit Tobit model. The results of this Tobit model show that *Bsize*, *Active*, *NCsize*, *Growth*, and *OUT_SR* are positively and significantly associated with *LN_WORD*. On the other hand, *NWCH*, *ROA*, *LN_COM*, and *PPE* are negatively and significantly associated with *LN_WORD*, while *INVE_RI*, *RICE_RI*, and *LEV* have insignificant influence on *LN_WORD* in the Tobit model. The results of Tobit model show that this approach does not make any significant change to the main results obtained from previous regression that corporate governance elements have an impact on the levels of auditor's disclosures of RMM. This concludes that the main results are robust to the use of two-limit Tobit model.

The use of Tobit models is not new. For example, Ahmed, Higgs, Ng, and Delaney (2018) use two-limit Tobit models when they study the determinants of women representation on corporate boards. When explaining the linkage between firm characteristics women representation on corporate boards, they argue that the percentage of women on boards as the dependent variable is a censored variable, hence the need to use two-limit Tobit models. Their study finds that two-limit Tobit approach provides the best results compared to the use of OLS.

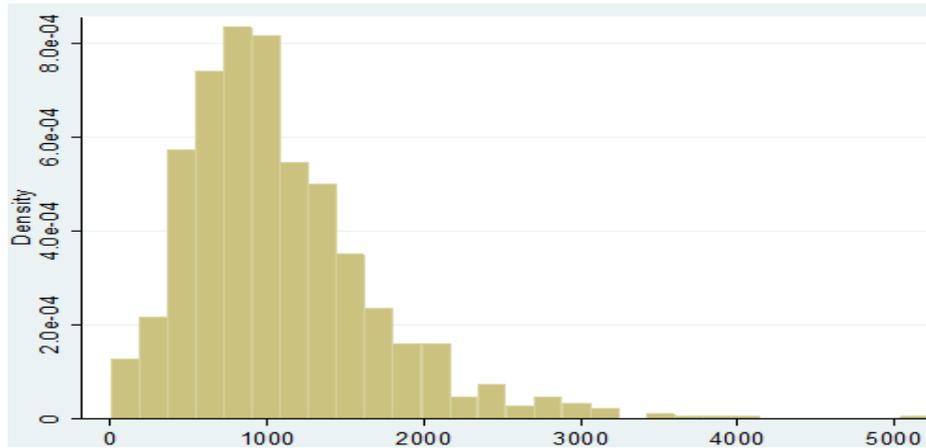


Figure 5.4 The distribution of the dependent variable (*WORDS*)

Table 5.18 Determinants of auditor’s disclosures – the risks of material misstatement: Tobit regression

Variable	Panel A: RE Tobit regression			Panel B: OLS Tobit regression		
	Coef.	Std. Err.	Z	Coef.	Std. Err.	z
<i>Bsize</i>	0.031**	(0.013)	2.390	0.035***	(0.012)	2.980
<i>NEX</i>	0.000	(0.002)	0.060	0.000	(0.002)	0.130
<i>Duality</i>	0.076	(0.104)	0.720	0.086	(0.101)	0.840
<i>CEOT</i>	-0.028	(0.021)	-1.350	-0.041**	(0.021)	-1.990
<i>NWCH</i>	-0.290***	(0.077)	-3.790	-0.255***	(0.068)	-3.770
<i>NFB</i>	0.013	(0.029)	0.440	0.040	(0.026)	1.540
<i>Active</i>	0.027**	(0.013)	2.030	0.030**	(0.013)	2.320
<i>IAC</i>	-0.034	(0.026)	-1.290	-0.028	(0.024)	-1.160
<i>NCsize</i>	0.026*	(0.015)	1.720	0.032**	(0.013)	2.380
<i>IDNC</i>	0.001	(0.002)	0.820	0.002	(0.001)	1.050
<i>Ln_Fsize</i>	-0.004	(0.025)	-0.160	-0.008	(0.021)	-0.390
<i>ROA</i>	-0.377**	(0.193)	-1.960	-0.450***	(0.158)	-2.840
<i>LN_COM</i>	-0.063***	(0.012)	-5.150	-0.077***	(0.012)	-6.420
<i>PPE</i>	-1.15E-06***	(3.95E-07)	-2.92	-9.54E-07**	(3.91E-07)	-2.44
<i>Growth</i>	0.003***	(0.001)	3.660	0.003***	(0.001)	2.950
<i>INVE_RI</i>	0.025	(0.015)	1.640	0.029**	(0.013)	2.300
<i>RICE_RI</i>	0.021	(0.018)	1.150	0.020	(0.015)	1.390
<i>LEV</i>	-0.002	(0.001)	-1.630	-0.003*	(0.001)	-1.860
<i>COMLX</i>	2.45E-11***	(7.92E-12)	3.090	2.19E-11***	(6.13E-12)	3.560
<i>OUT_SR</i>	0.001***	(0.000)	3.130	0.001***	(0.000)	3.650
<i>IN_SR</i>	0.004	(0.005)	0.810	0.004	(0.005)	0.800
Intercept	6.170***	(0.298)	20.700	6.324***	(0.008)	768.540
Year	Yes			Yes		
Industry	Yes			Yes		
Groups	322			322		
log-Likelihood	-771.031			-825.725		
Pseudo R2				0.170		
Obs.	966			966		

Panel A reports the results of RE Tobit regression and Panel B reports the results of OLS Tobit regression on the relationship between RMM and firm characteristics. The dependent variable is *LN_WORD* which refers to natural logarithm of the total number of words in RMM disclosures. *Bsize*, *NEX*, *Duality*, *CEOT*, *NWCH*, *NFB*, *Active*, *IAC*, *NCsize*, *IDNC*, *Ln_Fsize*, *ROA*, *LN_COM*, *PPE*, *Growth*, *INVE_RI*, *RICE_RI*, *LEV*, *COMLX*, *OUT_SR*, and *IN_SR* are the firm characteristics independent variables. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.7 Chapter summary and conclusion

This chapter has presented the results of Study One that investigates the role of corporate governance practices, and auditee characteristics and performance on auditor's judgment relating to the risks assessments disclosures, and materiality set by auditors. As predicted in Chapter 3, the results, based on a sample of 966 U.K. public firms over the period 2014 to 2016, reveal a significant positive relation between the strength of corporate governance and auditor's judgment. More specifically, board size, number of meetings held by audit committee, size of nomination committee, and institutional ownership have a positive relationship with the levels of RMM disclosures. In addition, board size, and institutional ownership are found to significantly and positively affect the materiality level.

Results also indicate that auditee characteristics including the rate of growth, and complexity, increase the disclosures of risks of material misstatement, while leveraged firms and firms with larger tangible assets accounts have a negative relationship with such RMM disclosures. With the materiality level, firm size has a positive influence on the amounts of materiality, while the rate sales of growth have a negative influence on the materiality. Lastly, firm financial performance including *ROA* has a negative association with the disclosures of RMM, while the amounts of materiality increase in firms with better financial performance. The findings of this research have implications for investors, auditors, researchers, and regulators. In particular, these findings may increase investors' understanding of what drives the level of auditor's disclosures (the disclosures of risks of material misstatement and materiality level) in the extended auditor's report. This is done by providing evidence on the association between key firm internal and external governance including characteristics and auditor's disclosures of the risks of material misstatement and materiality level.

Since auditors are required to identify business risks, advise on weaknesses of internal control, and report irregularities (IAASB, 2009c), auditors could use the findings of this study as this

study highlights factors that are associated with the risks of material misstatement. For researchers, the results of this study show that not only manager's disclosures (e.g., voluntary disclosures) have a linkage with corporate governance but also auditor's disclosures (the disclosures of RMM and materiality level). Hence, regulators may wish to monitor smaller U.K. entities and secondary listing(s) entities via requiring auditors of smaller U.K. entities and secondary listing(s) entities to disclose the risks of material misstatement in their reports.

These findings are robust to alternative variables, alternative sample specifications, to endogeneity bias, and alternative estimation methods. Collectively, this study's results provide evidence suggesting that audit strategies are responsive to the strength of a client's corporate governance, characteristics, and performance. Chapters 6 and 7 present the results of Study Two and Study Three using pooled ordinary least squares (OLS) and random-effects (RE) models that were developed in Chapter 4.

CHAPTER 6: STUDY TWO RESULTS: Audit fees, non-audit fees, and the extended auditor's report on U.K. listed companies: Evidence from the risks of material misstatement

6.1 Introduction

This chapter presents the results of Study Two. The purpose of this study is to examine how audit and auditee firms respond to the risks of material misstatement. Specifically, this study asks, do the risks of material misstatement in the extended auditor's reports affect audit and non-audit services fees over a period time?

Study Two uses two dependent variables: audit fees (*LN_AUDFEE*) and non-audit services fees (*LN_NASFEE*). Study Two also uses (1) two explanatory variables namely number of risks reported for each firm (*N_RISK*), and the number of words used in per risk factor (*P_RISK*), and (2) a number of control variables namely the ratios of inventory and accounts receivable total assets (*INVE_RI* & *RICE_RI*), sales growth (*GROWTH*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), total accruals (*ACCR*), return on assets (*ROA*), leverage (*LEV*), current ratio (*CURNT*), return volatility (*VOL*), audit opinion (*OPNI*), audit firm type (*BIG4*), Z-Score (*ZSCORE*), business subsidiaries (*SUB*), merger (*MERG*), loss (*LOSS*), year dummies, and industry effects.

This study regresses balanced panel data for the period 2014-2016 to test the hypothesis developed in Chapter 3. To test the hypothesis with regard to the relationships among variables, Study Two runs random-effects (RE) regression and presents the results in Section 6.5. In Section 6.6, the author of this thesis has checked the robustness of the results by (1) changing measurement of variables; (2) splitting the sample; and (3) implementing (a) Feasible Generalized Least Squares (FGLS); (b) Two-Stage-Least-Squares (2SLS), and (c) Bootstrapping approach.

6.2 Descriptive statistics

Table 6.1 presents descriptive statistics for variables used in the study. The statistics in Table 6.1 show that the mean (median) amount of annual audit fees (*AUDFEE*) across the sample are £2.369 million (£0.900 million), with a maximum of £51.000 million. The mean (median) amount of annual non-audit services fees (*NASFEE*) are £1.539 million (£0.6106896 million). Comparing the mean of amount paid for auditing service and fees paid for non-audit service, shows that fees paid for auditing service is larger than fees paid for non-audit service. This is understandable because existing regulation in the EU provides a list of non-audit services that cannot be provided by the auditor of a public interest entity (PWC, 2014). This is also consistent with Sarbanes-Oxley Act of 2002 (SOX) which prohibits an auditor from providing most non-audit services to an audit client (Riesenberg, 2002).

For Study Two sample of the risks of material misstatement variables, auditors report about four risks of material misstatement (*N_RISK*) for each firm (mean=3.587, median=3.384, maximum=9, and minimum=1). In addition, auditors have a mean (median) number of words used in per risk section of the auditor's report (*P_RISK*) of 421.733 words (376.410 words). Among other control variables, on average, each firm has total assets (*Fsize*) of £43770.250 million, ranging from £43.151.000 to £2634139.000 million with a mean (median) number of business subsidiaries (*SUB*) of 239.911 (150.024) firms. These descriptive statistics show that the firms in this study sample are large, make profit measured as *ROE* 7.091%, and far away from going bankrupt as a mean of *Z-Score* equals 5.118. In addition, large amounts of firms in this sample are audited by Big 4 (*BIG4*) with a mean of 0.835. About 2% of observations in this study had received going concern audit opinion with a few firms make net loss (mean=0.103 and median= 0.000, respectively).

Table 6.1 Descriptive statistics

Variable	Mean	Std. Dev.	Median	Max	Min	25p	75p
<i>AUDFEE</i> (£million)	2.639	5.648	0.900	51.000	0.005	0.379	2.567
<i>LN_AUDFEE</i>	-0.076	1.466	-0.105	3.932	-5.298	-0.972	0.943
<i>NASFEE</i> (£million)	1.539	4.037	0.610689	97.1	.001	.200	1.700
<i>LN_NASFEE</i>	-0.592	1.552	-.493	4.575	-6.907	-1.609	0.530
<i>N_RISK</i>	3.587	1.446	3.384	9.000	1.000	2.981	4.000
<i>LN_N_RISK</i>	1.189	0.441	1.219	2.197	0.000	1.092	1.386
<i>P_RISK</i>	421.733	276.008	376.410	2833.000	7.000	236.500	533.000
<i>LN_P_RISK</i>	5.841	0.690	5.931	7.949	1.946	5.466	6.279
<i>RICE_RI</i>	0.027	0.170	0.085	0.013	0.000	0.084	0.139
<i>INVE_RI</i>	0.014	0.013	0.015	0.009	0.000	0.006	0.029
<i>GROWTH</i>	10.510	44.209	5.233	975.867	-87.017	-1.204	13.892
<i>FOROPS</i>	0.645	0.477	1.000	1.000	0.000	0.000	1.000
<i>Fsize</i> (£million)	43770.250	178234.600	2799.600	2634139.000	43.151	1038.200	10011.300
<i>Ln_Fsize</i>	8.321	1.956	7.937	14.784	3.765	6.945	9.211
<i>TAN</i>	1982.598	5359.949	518.450	60171.710	0.000	91.000	1573.208
<i>LN_TAN</i>	5.871	2.223	6.256	11.005	-1.704	4.575	7.361
<i>ACCR</i>	-0.018	0.113	-0.002	1.436	-1.519	-0.008	0.000
<i>ROE</i>	7.091	15.126	5.646	235.464	-60.760	2.422	9.743
<i>LEV</i>	5.793	29.788	2.650	175.740	1.001	1.797	5.538
<i>CURNT</i>	2.850	4.342	1.513	54.714	0.030	1.003	3.129
<i>VOL</i>	27.404	13.267	24.753	123.008	7.947	19.397	30.579
<i>OPNI</i>	0.025	0.156	0.000	1.000	0.000	0.000	0.000
<i>BIG4</i>	0.835	0.371	1.000	1.000	0.000	1.000	1.000
<i>ZSCORE</i>	5.118	5.385	4.337	86.354	-2.692	2.564	6.093
<i>SUB</i>	239.911	367.779	150.024	4048.000	1.000	54.000	287.000
<i>MERG</i>	0.275	0.447	0.000	1.000	0.000	0.000	1.000
<i>LOSS</i>	0.103	0.304	0.000	1.000	0.000	0.000	0.000

This table presents the descriptive statistics of all variables in this study model. It also reports mean, standard deviation, 25 percentile and 75 percentile for the main proxies of RMM and audit fees control variables. The definition of variables is provided in Table 4.2.

Table 6.2 shows, for each year, the amounts of fees paid for audit service (*AUDFEE*), the amounts of fees paid for non-audit services (*NASFEE*), number of risks found by auditors (*N_RISK*), and the number of words used in per risk (*P_RISK*). Table 6.2 of Panel A shows that mean of audit fees were £2.736 in 2014 to £2.496 in 2016. Over the same period, the mean amounts of non-audit services were £1.022 in 2014 to £2.090 in 2016. This recommends that auditors charge more in the first year of adopting the new auditing standard, and eventually, reduced amounts over time. This flow can also be seen in Panel B that the mean (median) number of risks reported for each firm were 3.713 (4) in 2014 to 3.482 (3) in 2016. However, mean (median) the number of words used in per risk were 359.055 (318.500) in 2014 to 461.042 (427.000) in 2016.

Table 6.2 Sample distribution by year

Year	Panel A: Fees (£ million)				Non-Audit Fees (£ million)			
	Obs.	Mean	Std. Dev.	Median	Obs.	Mean	Std. Dev.	Median
2014	336	2.736	5.770	0.800	336	1.022	1.722	0.611
2015	336	2.685	5.816	0.900	336	1.508	2.507	0.900
2016	336	2.496	5.360	0.975	336	2.090	6.259	0.581
Total	1008				1008			

Year	Panel B: Number of Risks				Number of words used in Per Risk			
	Obs.	Mean	Std. Dev.	Median	Obs.	Mean	Std. Dev.	Median
2014	336	3.713	1.430	4.000	336	359.055	262.548	318.500
2015	336	3.565	1.471	3.071	336	445.100	281.184	406.500
2016	336	3.482	1.432	3.000	336	461.042	273.791	427.000
Total	1008				1008			

The sample consists of 1008 firm-year observations from 2014 to 2016. Panel A shows audit fees of sample firms by year, and shows non-audit services fees of sample firms by year, while Panel B shows number of risks and number of words used in per risk of sample firms by year.

Panels A, B, and C of Table 6.3 show the distribution of audit fees, non-audit services fees, and number of words used in per risk in firms with high/low risk in each year. As it can be seen in Panel A, auditors in firms with high RMM increase audit fees from a mean of £3.181 in 2014 to a mean of £3.294 in 2015 with a slight change in 2016. Non-audit services fees also increase

in firms with high RMM from a mean of £1.168 in 2014 to a mean of £2.467 in 2016. In addition, the mean (median) amount of total annual audit fees and non-audit fees in firms with high RMM are £9.603 million and £5.305 million, respectively. This is larger than the mean total audit fees in firms with low RMM (see Panel B). Panel C shows that number of words used in per risk increase in 2014 from a mean of 400.783 words to a mean of 533.145 words in 2016 in firms with high RMM.

Table 6.3 Sample distribution by year

Year	Firms with High RMM				Firms with Low RMM			
	Obs.	Mean	S.D.	Median	Obs.	Mean	S.D.	Median
<i>Panel A: Sample distribution by year with respect to audit fees</i>								
2014	266	3.181	6.375	1.001	70	1.044	1.367	0.318
2015	245	3.294	6.675	1.061	91	1.045	1.173	0.411
2016	245	3.129	6.138	1.400	91	0.792	0.872	0.416
Total	756	9.603	19.188	3.462	252	2.881	3.412	1.144

Year	Firms with High RMM				Firms with Low RMM			
	Obs.	Mean	S.D.	Median	Obs.	Mean	S.D.	Median
<i>Panel B: Sample distribution by year with respect to non-audit fees</i>								
2014	266	1.168	1.889	0.611	70	0.469	0.541	0.394
2015	245	1.669	2.758	1.000	91	1.072	1.585	0.800
2016	245	2.467	7.229	0.755	91	1.073	1.643	0.300
Total	756	5.305	11.876	2.366	252	2.614	3.768	1.494

Year	Firms with High RMM				Firms with Low RMM			
	Obs.	Mean	S.D.	Median	Obs.	Mean	S.D.	Median
<i>Panel C: Sample distribution by year with respect to number of words in per risk</i>								
2014	266	400.783	274.233	350	70	200.487	116.708	175
2015	245	525.202	280.344	472	91	229.439	129.335	188
2016	245	533.145	272.878	492	91	266.921	157.777	227
Total	756	1459.13	827.455	1314	252	696.847	403.82	590

Table 6.3 shows a sample distribution of audit fees, non-audit services fees, and number of words used in per risk in firms with high/low risk in each year. Firms are classified as “firms with high risk” if firm’s number of risks is greater than the median firm’s number of risks of the sample and “firms with low number of risks” otherwise.

Table 6.4 displays the industry distribution by GICS industry classification. Panel A shows the mean (median) the amount of fees paid for audit service (*AUDFEE*) ranges from £0.387 (£0.335) million in real estate to £17.211 (£4.000) million in energy sector. This table also shows that Information Technology has low mean (median) fees paid for audit service, with

£0.686 (£0.442) million. In million, the mean (median) of audit fees in other sectors include materials £3.872 (£1.232), consumer staples £3.361 (£0.700), health care £3.316 (£20.905), and financials £2.562 (£2.206) are in the middle of the range.

With non-audit services fees (*NASFEE*) in Panel B, the mean (median) fees paid for *NASFEE* range from £0.666 (£0.424) in real estate to £2.654 (£2.100) in energy sector followed by the health care sector with a mean (median) of £2.491 (£0.609) million. Fees paid for non-audit service in financials, services, and utilities are in the middle of the range with a mean (median) of £2.474 (£0.755), £2.389 (£2.000), £1.578 (£0.600), £2.491 (£0.609) million, respectively.

In regards to the number of risks (*N_RISK*), Panel C shows telecommunication services registered the highest number of risks with a mean (median) of 6.067 (6.000), followed by the utilities sector with a mean (median) of 4.722 (6.000), while real estate registered the lowest number of risks set by auditors with a mean (median) of 2.769 (3.000). With number of words used in per risk (*P_RISK*), the mean (median) of *P_RISK* range from 333.452 (347.500) words in information technology to 743.552 (579.000) words in energy sector. Utilities, services, and industrials are in the middle of the range with a mean (median) of 555.944 (473.000), 520.933 (522.000) and 459.848 (411.000) words, respectively. This is reported in Panel D.

Table 6.4 Statistic description by sectors

Code	Sector	Panel A: Fees (£ million)				Panel B: Non-audit fees (£ million)			
		Obs.	Mean	S.D.	Median	Mean	S.D.	Median	%
10	Energy	33	17.211	19.370	4.000	2.654	2.997	2.100	3%
15	Materials	89	3.872	6.210	1.232	1.778	2.833	0.613	9%
20	Industrials	193	1.874	1.846	1.300	0.884	1.204	0.400	19%
25	Consumer Discretionary	189	1.326	2.511	0.600	1.060	2.037	0.500	19%
30	Consumer Staples	54	3.361	3.838	0.700	1.509	2.198	0.600	5%
35	Health Care	42	3.316	6.554	0.905	2.491	4.142	0.609	4%
40	Financials	239	2.562	3.712	2.206	2.474	7.220	0.755	24%
45	Information Technology	52	0.686	0.849	0.442	0.676	0.983	0.270	5%
50	Telecommunication Services	15	5.179	5.391	2.900	2.389	2.019	2.000	1%
55	Utilities	21	2.712	3.678	0.600	1.578	2.820	0.600	2%
60	Real Estate	81	0.387	0.286	0.335	0.666	1.578	0.424	8%
	Total	1008	42.487	54.246	15.220	18.158	30.030	8.870	100%

Code	Sector	Panel C: Number of Risk				Panel D: Number of words used in Per Risk		
		Obs.	Mean	S.D.	Median	Mean	S.D.	Median
10	Energy	33	4.578	1.384	4.000	743.552	614.995	579.000
15	Materials	89	3.567	1.248	3.607	403.753	201.803	372.000
20	Industrials	193	4.097	1.237	3.607	459.848	267.975	411.000
25	Consumer Discretionary	189	3.524	1.385	3.638	415.202	218.768	391.000
30	Consumer Staples	54	4.014	1.433	4.000	445.320	299.029	346.000
35	Health Care	42	3.598	1.370	3.231	452.765	263.306	408.000
40	Financials	239	3.161	1.479	3.000	370.058	259.327	325.000
45	Information Technology	52	2.927	0.959	3.000	333.452	153.727	347.500
50	Telecommunication Services	15	6.067	1.580	6.000	520.933	212.350	522.000
55	Utilities	21	4.722	1.223	6.000	555.944	351.109	473.000
60	Real Estate	81	2.769	1.129	3.000	358.962	241.304	309.000
	Total	1008	43.024	14.426	43.083	5059.789	3083.693	4483.500

Table 6.4 displays a sample distribution across industry classifications according to Global Industry Classifications Standards (GICS) of audit fees, non-audit services fees, number of risks and number of words used in per risk, respectively.

Because firm-level data is expected to be with positive or negative skewness (e.g., profit, total assets, audit fees), log-transformed of the firm level data moderates the skewness. Based on the GICS of the firm from 2014 to 2016, Figures 6.1, 6.2 and 6.3 display the distributions of audit fees, non-audit fees, and number of words used in per risk after log-transformed, respectively, by all sectors.

Figures 6.1, 6.2 and 6.3 show that taking the logarithm greatly minimizes negative/positive skewness in audit fees, non-audit fees, and number of words used in per risk, and makes distributions of all sectors more symmetrical bell-shaped. Specifically, audit fees distribution shows that sectors are distributed in the range of -4 and 4. With non-audit fees distribution, it is shown that sectors are distributed in the range of -4 and 4. In regards to number of words used in per risk, it is shown that sectors are distributed in the range of 4 and 8.

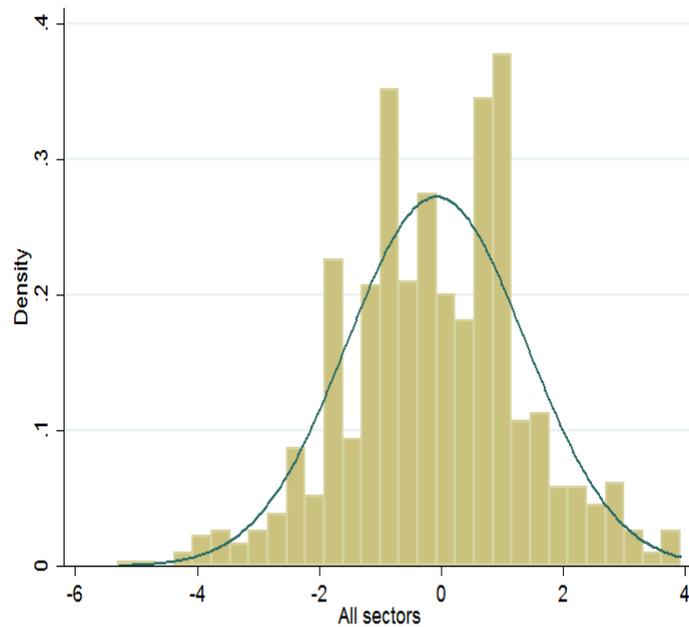


Figure 6.1 Sample distribution of the logarithm of audit fees

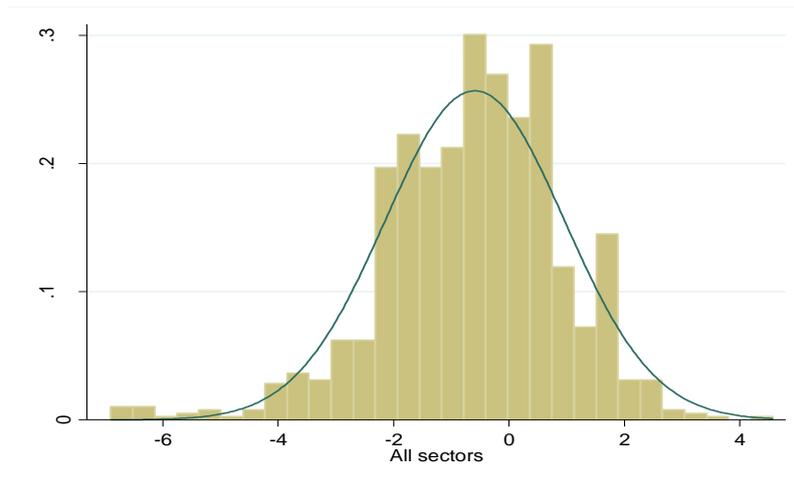


Figure 6.2 Sample distribution of the logarithm of non-audit service fees

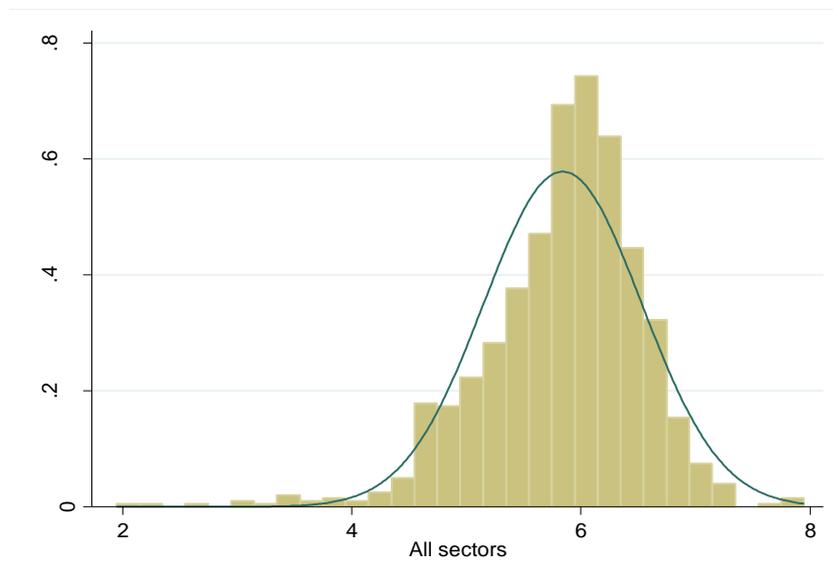


Figure 6.3 Sample distribution of the logarithm of number of words used in per risk

6.3 Univariate analysis

Table 6.5 provides a univariate analysis of firm-year observations with high number of risks and firms with low number of risks using a related sample *t*-test. The average audit fees are around £3.200 million for firms with higher number of risks, £0.953 million for firms with low number of risks. The differences of the means for audit fees between firms with high number of risks and firms with low number of risks are statistically significant at 1% level. In addition,

auditors in firms with higher number of risks tend to provide more information about the RMM disclosures than in firms with low number of risks (mean difference = -249.066, statistically significant at 1% level). These differences of the means for audit fees (*AUDFEE*) and the number of words per risk (*P_RISK*) suggest that auditors tend to extend their effort, and fees in risky firms.

The average fees for non-audit services are approximately £1.752 million for firms with higher number of risks, and £0.905 million for firms with low number of risks. The mean of non-audit services fees (*NASFEE*) of firms with higher number of risks is greater than that of firms with low number of risks. This difference is significant at 1% level.

Table 6.5 Univariate analysis of firms with high/low number of risks in auditor's reports

Variable	H. Number of Risk			L. Number of Risk			Difference		
	N	Mean	STD	N	Mean	STD	Mean Diff	t-stat	t
<i>AUDFEE</i>	504	3.200	6.391	504	0.953	1.138	-2.247***	-5.551	0.000
<i>LN_AUDFEE</i>	504	0.202	1.345	504	-0.909	1.498	-1.11155***	-11.034	0.000
<i>NASFEE</i>	504	1.752	4.570	504	0.905	1.422	-0.847	-2.893	0.004
<i>LN_NASFEE</i>	504	-0.384	1.387	504	-1.218	1.838	-0.833	-7.582	0.000
<i>P_RISK</i>	504	484.000	282.197	504	234.933	139.216	-249.066***	-13.472	0.000
<i>LN_P_RISK</i>	504	6.028	0.597	504	5.279	0.642	-0.749***	-16.923	0.000
<i>INVE_RI</i>	504	776.763	2560.173	504	172.179	541.578	-604.584***	-3.720	0.000
<i>RICE_RI</i>	504	1320.593	3351.418	504	762.535	1047.061	-558.057***	-2.601	0.009
<i>GROWTH</i>	504	9.168	47.468	504	14.538	32.276	5.370*	1.671	0.095
<i>FOROPS</i>	504	0.719	0.447	504	0.423	0.494	-0.296***	-8.859	0.000
<i>Ln_Fsize</i>	504	8.514	1.911	504	7.742	1.978	-0.772***	-5.510	0.000
<i>LN_TAN</i>	504	6.168	2.101	504	4.981	2.340	-1.186***	-7.543	0.000
<i>ACCR</i>	504	-0.022	0.130	504	-0.005	0.016	0.017**	2.097	0.036
<i>ROA</i>	504	5.832	8.317	504	10.869	26.282	5.037***	4.624	0.000
<i>LEV</i>	504	5.305	33.018	504	7.258	16.666	1.952	0.901	0.368
<i>CURNT</i>	504	2.483	3.600	504	3.950	5.920	1.466***	4.692	0.000
<i>VOL</i>	504	27.901	13.452	504	25.911	12.604	-1.989**	-2.065	0.039
<i>OPNI</i>	504	0.028	0.164	504	0.016	0.125	-0.011	-1.052	0.293
<i>BIG4</i>	504	0.824	0.381	504	0.869	0.338	0.044*	1.668	0.096
<i>ZSCORE</i>	504	5.101	5.676	504	5.169	4.409	0.069	0.176	0.861
<i>SUB</i>	504	256.134	388.351	504	191.240	292.985	-64.894**	-2.432	0.015
<i>MERG</i>	504	0.280	0.450	504	0.258	0.438	-0.022	-0.692	0.489
<i>LOSS</i>	504	0.116	0.321	504	0.063	0.244	-0.052**	-2.396	0.017

Notes: Dependent variables are *AUDFEE* which refer to audit fees and *NASFEE* which refer to non-audit services fees. *LN_AUDFEE* is the natural logarithm of *AUDFEE*, while *LN_NASFEE* is the natural logarithm of *NASFEE*. *P_RISK* is the independent variable which refers to number of words used in per risk. The rest of variables are audit fees control variables. The definition and measurements of all these variables are given in Table 4.2. This table provides a paired sample *t*-test of total audit fees behavior of firms with high-RMM and firms with low-RMM. Firms are classified as “firms with high risk” if firm’s number of risks is greater than the median firm’s number of risks of the sample and “firms with low number of risks” otherwise. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6.4 Correlation analysis

Table 6.6 reports the Pearson's correlation matrix between the dependent, independent, and control variables. In the relationship between audit fees and RMM proxies, the number of risks and the number of words used in per risk are positively correlated with each other at the 1% level. The variables number of risks and number of words used in per risk are positively correlated with audit fees at the 1% level. These correlation coefficients are below 0.43. The correlations between the audit fees regression control variables ratios of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), and leverage (*LEV*) and audit fees are less 0.7. These control variables are positively correlated with audit fees at the 1% level. However, the control variables sales growth (*GROWTH*), total accruals (*ACCR*), and return on assets (*ROA*) are negatively correlated with audit fees at the 1% level.

In regards to the relationship between non-audit service fees and RMM proxies, the variables the number of risks reported for each firm (*N_RISK*) and the number of words used in per risk factor (*P_RISK*) have a significant positive correlation with non-audit service fees (*LN_NASFEE*) at the 1% level. In addition, the control variables the ratios of inventory and accounts receivable to total assets (*INVE_RI* & *RICE_RI*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), leverage (*LEV*), and business subsidiaries (*SUB*) are found to have a significant positive correlation with *LN_NASFEE* at the 1% level. Among the variables of the models in this study, the correlation coefficients never exceed 0.67, below 0.8, suggesting that multicollinearity is unlikely to be a serious threat in this study's results (Field, 2009).

Table 6.6 Pearson's correlation matrix of variables

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]
1. <i>LN_AUDFEE</i>	1.000						
2. <i>LN_NASFEE</i>	0.612***	1.000					
3. <i>N_RISK</i>	0.421***	0.291***	1.000				
4. <i>LN_P_RISK</i>	0.324***	0.236***	0.588***	1.000			
5. <i>RICE_RI</i>	0.395***	0.277***	0.202***	0.106***	1.000		
6. <i>INVE_RI</i>	0.385***	0.219***	0.239***	0.160***	0.679***	1.000	
7. <i>GROWTH</i>	-0.099***	0.003	-0.112***	-0.031	0.017	-0.092***	1.000
8. <i>FOROPS</i>	0.269***	0.158***	0.346***	0.286***	0.035	0.090***	-0.1386***
9. <i>Ln_Fsize</i>	0.698***	0.565***	0.285***	0.173***	0.507***	0.315***	0.019
10. <i>LN_TAN</i>	0.574***	0.398***	0.341***	0.162***	0.333***	0.275***	-0.030
11. <i>ACCR</i>	-0.236***	-0.190***	-0.150***	-0.085***	-0.438***	-0.482***	0.050
12. <i>ROA</i>	-0.182***	-0.203***	-0.176***	-0.145***	-0.108***	-0.061**	0.022
13. <i>LEV</i>	0.096***	0.104***	-0.001	-0.007	0.066	-0.015	0.056*
14. <i>CURNT</i>	-0.034	0.032	-0.133***	-0.074**	0.092***	-0.081***	0.1397***
15. <i>VOL</i>	0.039	0.012	0.028	0.091***	-0.020	0.087***	-0.0954***
15. <i>OPNI</i>	0.050	0.059*	-0.026	0.040	0.088***	-0.043	0.1825***
16. <i>BIG4</i>	-0.055*	-0.036	-0.154***	-0.103***	-0.056*	0.026	-0.023
17. <i>ZSCORE</i>	-0.050	-0.002	-0.021	-0.028	-0.049	-0.036	0.076**
18. <i>SUB</i>	0.328***	0.283***	0.173***	0.131***	0.359***	0.184***	0.056*
19. <i>MERG</i>	0.056*	0.026	0.090***	0.114***	-0.024	-0.013	-0.020
20. <i>LOSS</i>	0.034	0.006	0.105***	0.109***	0.009	0.045	0.007
	[8]	[9]	[10]	[11]	[12]	[13]	[14]
8. <i>FOROPS</i>	1.000						
9. <i>Ln_Fsize</i>	-0.011	1.000					
10. <i>LN_TAN</i>	0.133***	0.537***	1.000				
11. <i>ACCR</i>	-0.040	-0.230***	-0.161***	1.000			
12. <i>ROA</i>	-0.085***	-0.271***	-0.262***	0.107***	1.000		
13. <i>LEV</i>	-0.030	0.187***	0.075**	-0.011	-0.047***	1.000	
14. <i>CURNT</i>	-0.177***	0.168***	-0.024	-0.029	-0.056*	0.060*	1.000

15. <i>VOL</i>	0.040	-0.040	-0.054*	-0.036	-0.097***	0.029	-0.011
15. <i>OPNI</i>	-0.002	0.117***	0.027	0.025	-0.048	0.073**	0.077**
16. <i>BIG4</i>	0.006	-0.084***	-0.080**	-0.011	0.012	-0.013	0.023
17. <i>ZSCORE</i>	0.036	-0.038	-0.057*	0.032	-0.017	-0.018	0.007
18. <i>SUB</i>	0.086***	0.491***	0.260***	-0.210***	-0.103***	0.090***	0.081***
19. <i>MERG</i>	0.088***	-0.001	-0.003	0.020	-0.010	0.019	0.042
20. <i>LOSS</i>	0.092***	0.032	0.086***	-0.076**	-0.313***	-0.050	0.051

	[15]	[16]	[17]	[18]	[19]	[20]	[21]
15. <i>VOL</i>	1.000						
15. <i>OPNI</i>	-0.057*	1.000					
16. <i>BIG4</i>	0.053*	-0.050	1.000				
17. <i>ZSCORE</i>	0.074**	0.048	0.039	1.000			
18. <i>SUB</i>	-0.040	0.167***	-0.043	0.010	1.000		
19. <i>MERG</i>	0.010	0.045	-0.086***	0.063**	0.036	1.000	
20. <i>LOSS</i>	0.236***	0.009	0.001	-0.012	-0.031	0.003	1.000

This table reports correlation matrix of all dependent and independent variables. The definition and measurements of all these variables are given in Table 4.2. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6.5 Main results

Table 6.7 presents the results of Study Two. To examine the association between the fees (audit fees and non-audit service fees) and the risks of material misstatement for the sample of 1008 firm-year observations over the 2014 to 2016 period, Study Two employs random-effects estimation for each model and presents the results in Panels A and B. The use of variance components model may be suitable for this study because the data is a relatively short period of time (e.g., Ali et al., 2017; Baltagi, 2008) and the random-effects estimation coefficients model is appropriate for panel data (Podestà, 2002).

In Table 6.7, Panel A reports the results of the relationship between audit fees and RMM in model 4.3. The results indicate that the model 4.3 explains 70% of the variations in audit fees (*LN_AUDFEE*). The results are consistent with H1 (a) that audit fees and the risks of material misstatement are positively associated. Specifically, the coefficient of 0.054 on the number of risks reported for each firm (*N_RISK*) in Panel A (z -statistic=2.460) shows that an increase of one risk item increased the audit fees on average by 5.4%. This coefficient is statistically significant at the 5% level. This finding is consistent with a number of recent studies investigating the potential effect of CAMs on audit fees. For example, Carcello and Li (2013) find that audit fees increase by approximately 13% with the new auditor's report. Ferreira (2018) also find a positive association between KAMs and audit fees. In France, Bédard et al. (2014) provide a similar result; that is, justification of assessments (*JOAs*) affect audit fees. However, some studies find no linkage between the new auditing standard (ISA 700) and audit fees. In New Zealand, Bradbury and Almulla (2018) find no association between the disclosure of KAMs and audit fees. Similarly, Pros and Scott (2018) find that audit fees in Australia do not increase with the new auditing standard in relation to KAMs. Since these studies use smaller sample size, one may raise a concern around such sample.

In addition, the coefficient of the *log* of number of words used in per risk factor (*LN_P_RISK*) is 0.070 with the *z*-statistic of 1.780 (significant at the 10% level). This result suggests that a 1% increase in RMM disclosures, increased audit fees by 0.070 percentage points. The findings provide evidence that audit fees are a function of client size, complexity, and risk. This is supported by Hogan and Wilkins (2008), Hoitash et al. (2008), Kinney et al. (2004), Li and Lin (2005), Raghunandan and Rama (2006), and Stanley and DeZoort, (2007).

In Table 6.7, Panel B reports the results of the relationship between non-audit service fees and RMM in model 4.4. The model has an R-squared (between) of 0.473. The results suggest that non-audit service fees are significantly and positively associated with the number of risks. The coefficient of 0.077 on the number of risks reported for each firm (*N_RISK*) (statistically significant at the 10% level with the *z*-statistic equal to 1.930) shows that an increase of one risk item increased non-audit service fees on average by 7.7%. This indicates that risky firms pay more for non-audit services than those with fewer number of risks. This result is contrary to the expectation in H1 (b) and suggest that non-audit service fees do not put auditor independence at risk as argued by Harris (2014) and Wines (1994). This also can be seen in the relationship between non-audit service fees (*LN_NASFEE*) and the number of words used in per risk (*LN_P_RISK*) which indicate insignificant relationship. However, this finding is consistent with previous findings (e.g., DeFond et al., 2002; Geiger & Rama, 2003) that going concern audit opinion and non-audit service fees do not influence auditor's independence.

Table 6.7 Relation of the risks of material misstatement with audit fees and non-audit service fees

	Panel A: <i>LN_AUDFEE</i>				Panel B: <i>LN_NASFEE</i>			
	Coef.	Std. Err.	Z	P> Z	Coef.	Std. Err.	Z	P> Z
<i>N_RISK</i>	0.054	(0.022)	2.460	0.014**	0.077	(0.040)	1.930	0.054*
<i>LN_P_RISK</i>	0.070	(0.039)	1.780	0.075*	0.099	(0.073)	1.360	0.175
<i>INVE_RI</i>	0.000	(0.000)	2.280	0.023**	0.000	(0.000)	-0.560	0.574
<i>RICE_RI</i>	-0.000	(0.000)	-1.710	0.088*	0.000	(0.000)	0.290	0.774
<i>GROWTH</i>	-0.001	(0.000)	-1.760	0.078*	0.001	(0.001)	1.790	0.073*
<i>FOROPS</i>	0.261	(0.079)	3.300	0.001***	0.350	(0.120)	2.910	0.004***
<i>Ln_Fsize</i>	0.485	(0.031)	15.670	0.000***	0.372	(0.043)	8.560	0.000***
<i>LN_TAN</i>	0.074	(0.023)	3.190	0.001***	0.036	(0.035)	1.030	0.302
<i>ACCR</i>	-0.144	(0.159)	-0.900	0.3660	-0.954	(0.315)	-3.030	0.002***
<i>ROA</i>	0.002	(0.002)	1.050	0.2960	-0.003	(0.004)	-0.770	0.443
<i>LEV</i>	0.001	(0.001)	1.650	0.099*	0.002	(0.001)	1.740	0.082
<i>CURNT</i>	-0.005	(0.007)	-0.760	0.4460	0.007	(0.011)	0.580	0.560
<i>VOL</i>	0.001	(0.002)	0.630	0.5300	0.001	(0.003)	0.450	0.650
<i>OPNI</i>	0.236	(0.256)	0.920	0.3550	-0.306	(0.360)	-0.850	0.395
<i>BIG4</i>	0.053	(0.116)	0.450	0.6490	0.129	(0.154)	0.830	0.405
<i>ZSCORE</i>	0.003	(0.005)	0.590	0.5520	0.007	(0.009)	0.860	0.392
<i>SUB</i>	0.000	(0.000)	-0.470	0.6410	0.000	(0.000)	0.790	0.427
<i>MERG</i>	0.048	(0.051)	0.930	0.3500	0.127	(0.092)	1.380	0.168
<i>LOSS</i>	-0.054	(0.072)	-0.750	0.4530	-0.180	(0.134)	-1.350	0.177
Intercept	-4.687	(0.424)	-11.050	0.000***	-5.271	(0.627)	-8.410	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
R ² (Between)	0.703				0.473			
Obs.	1008				1008			

Panel A reports the results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees. Panel B reports the results of RE estimation of Equation 4.4 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on non-audit service fees. Dependent variables are log of *AUDFEE* and *NASFEE*. The independent variable is RMM measured by number of risks and number of words used in per risk. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6.6 Sensitivity analysis

To address a possible concern that the empirical regression results of this study are not robust and sensitive to particular procedures used or to alternative proxies of explanatory variables, this study employs several robustness tests. These tests include (1) changing the measurement of variables and excluding some sectors from the main analysis; (2) splitting the sample; and (3) implementing (a) Feasible Generalized Least Squares (FGLS), (b) Two-Stage-Least-Squares (2SLS), and (c) Bootstrapping techniques.

6.6.1 Changing measurement of variables

Although it is not necessary to take natural logarithm of the main variable of interest in this study (number of risks) as this variable has a normal distribution, the first test dropped the main independent variables *N_RISK* and the variable of *LN_P_RISK*, and employed natural logarithm of total number of risks found by auditors at fiscal year-end (*LN_N_RISK*). This is done to make the errors term homoscedastic (Sargan, 1964). This approach is widely accepted in social sciences. For example, Godfrey and Wickens (1981) use the log of a likelihood ratio statistics as a robustness test. They argue that this approach (parametric bootstrap) gives more robust results than other relative approaches.

Panel A in Table 6.8 shows that dropping these two main independent variables and taking natural logarithm of total number of risks do not make any significant change to the results obtained from previous regression. Consistent with the work of Godfrey and Wickens (1981), taking natural logarithm of number of risks resulted in a stronger correlation coefficient; i.e., the coefficient of 0.054 on *N_RISK* (z -statistic=2.460) to the coefficient of 0.310 on *LN_N_RISK* (z -statistic=4.910). This coefficient on *LN_N_RISK* indicates that a 1% increase in *LN_N_RISK*, audit fees increased by 0.310 percentage points.

Panel B in Table 6.8 shows robustness test results after excluding the two main independent variables *LN_N_RISK* and *N_RISK* and after excluding financial firms sector as such firms have different regulatory environment (Simpson & Kohers, 2002). This exclusion reduced the sample size to 769 firm-year observations. These approaches, however, do not make any significant change to this study's main results reported in Panel A of Table 6.7. This confirms that the positive association between the independent variable *LN_P_RISK* and the dependent variable *LN_AUDFEE* is not driven by other independent variables *LN_N_RISK* and *N_RISK*.

Table 6.8 Relation between the risks of material misstatement and audit fees: Excluding independent variables, alternative measures of independent variables, and restricting the sample

	Panel A: <i>LN_AUDFEE</i>				Panel B: <i>LN_AUDFEE</i>			
	Coef.	Std. Err.	Z	P> Z	Coef.	Std. Err.	Z	P> Z
<i>LN_N_RISK</i>	0.310	(0.063)	4.910	0.000***				
<i>N_RISK</i>								
<i>LN_P_RISK</i>					0.117	(0.035)	3.330	0.001***
<i>INVE_RI</i>	0.000	(0.000)	2.280	0.022**	0.000	(0.000)	0.180	0.857
<i>RICE_RI</i>	-0.003	(0.000)	-1.750	0.081*	0.000	(0.000)	0.510	0.609
<i>GROWTH</i>	-0.001	(0.000)	-1.770	0.076*	-0.001	(0.001)	-1.790	0.073*
<i>FOROPS</i>	0.242	(0.079)	3.060	0.002***	0.061	(0.079)	0.770	0.441
<i>Ln_Fsize</i>	0.485	(0.031)	15.580	0.000***	0.511	(0.041)	12.470	0.000***
<i>LN_TAN</i>	0.071	(0.023)	3.060	0.002***	0.081	(0.024)	3.340	0.001***
<i>ACCR</i>	-0.146	(0.157)	-0.930	0.352	-0.292	(0.216)	-1.350	0.177
<i>ROA</i>	0.002	(0.002)	1.070	0.284	0.002	(0.002)	0.750	0.451
<i>LEV</i>	0.001	(0.001)	1.670	0.095*	0.001	(0.001)	2.380	0.017**
<i>CURNT</i>	-0.005	(0.007)	-0.760	0.448	-0.009	(0.012)	-0.820	0.414
<i>VOL</i>	0.001	(0.002)	0.780	0.436	0.002	(0.001)	1.510	0.131
<i>OPNI</i>	0.256	(0.257)	0.990	0.320	0.166	(0.361)	0.460	0.646
<i>BIG4</i>	0.066	(0.117)	0.560	0.575	-0.053	(0.128)	-0.410	0.679
<i>ZSCORE</i>	0.003	(0.005)	0.550	0.579	-0.004	(0.006)	-0.580	0.560
<i>SUB</i>	0.000	(0.000)	-0.370	0.708	0.000	(0.000)	0.710	0.480
<i>MERG</i>	0.044	(0.051)	0.870	0.387	0.018	(0.047)	0.380	0.703
<i>LOSS</i>	-0.054	(0.071)	-0.760	0.447	-0.057	(0.064)	-0.890	0.374
Intercept	-4.466	(0.389)	-11.490	0.000***	-5.029	(0.461)	-10.920	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
R ² (Between)	0.698				0.703			
Obs.	1008				769			

Panel A reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after excluding the independent variables that are *N_RISK* and *LN_P_RISK* and after using an alternative measure of the independent variable. The independent variable in Panel A is RMM measured by the natural logarithm of total number of risks found by auditors (*LN_N_RISK*). Panel B reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after excluding financial firms. Dependent variable is the log of *AUDFEE*. The independent variable in Panel B is RMM measured by the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Further, there is a possibility that audit fees are affected by the client economic condition (Stanley, 2011). Raghunandan and Rama (2006), who examine the association between audit fees and material disclosures, also share this concern and check if particular clients in their sample drive the results. To assess this possibility, this study excluded a number of variables related to client's economic conditions. A benefit to this approach is that it controls for unobserved client factors that are likely to influence audit fees (Stanley, 2011). Table 6.9, Panel A presents results after excluding a number of control variables including current ratio (*CURNT*), return volatility (*VOL*), audit opinion (*OPNI*), audit firm type (*BIG4*), Z-Score (*ZSCORE*), business subsidiaries (*SUB*), merger (*MERG*), and loss (*LOSS*) to ensure that the results of Study Two are not influenced by these control variables. Again, the results of this approach are consistent with the previous results reported in Panel A of Table 6.7.

6.6.2 Splitting the sample

There is a concern that the level of pressure put by capital providers on managers differ based on the type of firms (financial and non-financial firms), hence the levels of disclosures. Specifically, non-financial firms face less pressure from capital providers (Alshammari, 2014), and hence the levels of disclosures. To rule out this possibility, this study uses a split sample strategy to check whether the type of the firms (financial and non-financial firms) have an impact on the main results of Study Two. Therefore – as a further check on the robustness of the previous results – Study Two re-runs model 4.3 using only financial firms (*GICS 40 = 239*). Panel B of Table 6.9 presents results after excluding all sectors except financials. It shows that this approach does not make any significant change to the results obtained from previous regression in Table 6.7.

Table 6.9 Relation between the risks of material misstatement and audit fees: Excluding some variables and restricting the sample

	Panel A: <i>LN_AUDFEE</i>				Panel B: <i>LN_AUDFEE</i>			
	Coef.	Std. Err.	Z	P> Z	Coef.	Std. Err.	Z	P> Z
<i>N_RISK</i>	0.052	(0.022)	2.390	0.017***	0.122	(0.060)	2.020	0.043**
<i>LN_P_RISK</i>	0.070	(0.039)	1.790	0.073*	-0.001	(0.094)	-0.010	0.993
<i>INVE_RI</i>	0.000	(0.000)	2.340	0.019**	-0.008	(0.012)	-0.670	0.500
<i>RICE_RI</i>	-0.000	(0.000)	-1.750	0.080*	-0.000	(0.000)	-1.810	0.071*
<i>GROWTH</i>	-0.001	(0.000)	-1.980	0.047**	0.000	(0.001)	-0.460	0.646
<i>FOROPS</i>	0.262	(0.078)	3.340	0.001***	0.736	(0.201)	3.660	0.000***
<i>Ln_Fsize</i>	0.483	(0.030)	16.040	0.000***	0.573	(0.048)	11.830	0.000***
<i>LN_TAN</i>	0.072	(0.023)	3.090	0.002***	-0.035	(0.053)	-0.670	0.505
<i>ACCR</i>	-0.119	(0.156)	-0.760	0.447	-0.055	(0.304)	-0.180	0.857
<i>ROA</i>	0.003	(0.002)	1.340	0.179	0.002	(0.008)	0.200	0.844
<i>LEV</i>	0.001	(0.001)	1.850	0.064*	-0.015	(0.005)	-3.240	0.001***
<i>CURNT</i>					0.000	(0.010)	-0.030	0.976
<i>VOL</i>					-0.001	(0.006)	-0.200	0.840
<i>OPNI</i>					0.431	(0.315)	1.370	0.171
<i>BIG4</i>					0.371	(0.240)	1.540	0.123
<i>ZSCORE</i>					0.005	(0.010)	0.480	0.634
<i>SUB</i>					0.000	(0.000)	-1.610	0.107
<i>MERG</i>					0.068	(0.144)	0.470	0.635
<i>LOSS</i>					-0.293	(0.245)	-1.200	0.230
Intercept	-4.593	0.398	-11.540	0.000***	-5.597	(0.679)	-8.250	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
<i>R</i> ² (Between)	0.699				0.703			
Obs.	1008				239			

Panel A reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after excluding control variables including *CURNT*, *VOL*, *OPNI*, *BIG4*, *ZSCORE*, *SUB*, *MERG*, and *LOSS* while Panel B reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after excluding all sectors except financials. Dependent variable is the log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Furthermore, it is reasonable to assume that large firms are more likely to have more number of risks in the extended auditor's report compared to non-large firms in the sample. Thus, large firms may influence the results of this study. To this end, following Raghunandan and Rama (2006), this study partitions the sample into two groups based on total assets (below or above the median) and re-estimates the Equation 4.3 only on non-large firms in the sample (n=504). After restricting the sample to non-large firms, the results (reported in Table 6.10 Panel A) are qualitatively similar to the main results of this study.

In addition, this study follows Raghunandan and Rama (2006) who delete firms audited by non-Big 4 firms as further sensitivity tests for examining the relationship between audit fees and material disclosures. Panel B of Table 6.10 shows the results after restricting the sample to clients of the Big 4 firms and after deleting 166 firm-year observations audited by non-Big 4 firms. The results with the subsample of Big 4 clients are similar to those reported in Table 6.7.

Table 6.10 Relation between the risks of material misstatement and audit fees: Restricting the sample based on total assets and audit firm type

	Panel A: <i>LN_AUDFEE</i>				Panel A: <i>LN_AUDFEE</i>			
	Coef.	Std. Err.	Z	P> Z	Coef.	Std. Err.	Z	P> Z
<i>N_RISK</i>	0.116	(0.041)	2.840	0.005***	0.054	(0.026)	2.100	0.036***
<i>LN_P_RISK</i>	0.140	(0.071)	1.980	0.047**	0.073	(0.047)	1.550	0.121
<i>INVE_RI</i>	0.000	(0.000)	2.520	0.012**	0.000	(0.000)	1.250	0.212
<i>RICE_RI</i>	-0.000	(0.000)	-3.530	0.000***	-0.000	(0.000)	-0.560	0.575
<i>GROWTH</i>	-0.002	(0.001)	-1.700	0.089*	-0.001	(0.000)	-1.720	0.085*
<i>FOROPS</i>	0.130	(0.131)	1.000	0.319	0.250	(0.088)	2.840	0.005***
<i>Ln_Fsize</i>					0.476	(0.035)	13.540	0.000***
<i>LN_TAN</i>	0.096	(0.035)	2.770	0.006***	0.078	(0.026)	3.030	0.002***
<i>ACCR</i>	-5.956	(3.706)	-1.610	0.108	-0.060	(0.205)	-0.290	0.769
<i>ROA</i>	-0.002	(0.003)	-0.640	0.523	0.003	(0.002)	1.420	0.156
<i>LEV</i>	0.001	(0.001)	1.670	0.094*	0.001	(0.001)	1.550	0.122
<i>CURNT</i>	-0.015	(0.011)	-1.380	0.169	-0.005	(0.007)	-0.690	0.491
<i>VOL</i>	0.000	(0.003)	0.140	0.888	0.002	(0.002)	0.850	0.396
<i>OPNI</i>	0.362	(0.473)	0.770	0.443	0.423	(0.329)	1.290	0.198
<i>BIG4</i>	0.008	(0.192)	0.040	0.965				
<i>ZSCORE</i>	0.003	(0.007)	0.380	0.704	0.004	(0.005)	0.680	0.494
<i>SUB</i>	0.000	(0.001)	0.450	0.652	0.000	(0.000)	-0.320	0.751
<i>MERG</i>	0.167	(0.091)	1.840	0.066*	0.060	(0.059)	1.020	0.309
<i>LOSS</i>	-0.349	(0.126)	-2.780	0.005***	-0.036	(0.085)	-0.430	0.671
<i>Intercept</i>	-1.576	(0.747)	-2.110	0.035**	-4.508	(0.460)	-9.790	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
<i>R</i> ² (Between)	0.401				0.710			

Panel A reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after restricting the sample to only non-large firms. Note that the control variable that is firm size (*Ln_Fsize*) is omitted from this estimation as this variable is used to partition the sample. Firms are classified as “large firms” if firm total assets is greater than the median firm total assets of the sample and “non-large firms” if firm total assets is below the median firm total assets of the sample. Panel B presents the results (using RE method) between auditor’s risks reported in the extended auditor’s report and audit fees after restricting the sample to only clients of the Big 4 firms. Note that the control variable that is audit firm type (*BIG4*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is the log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Moreover, a concern may arise that the main independent variable in this study number of risks (*N_RISK*) would become bias and the main results of Study Two may not hold if this study restricted the sample to only firms with good financial performance. This is because firms with good financial performance⁴⁵ attract more investors which in turn place a pressure on the auditor affecting his/her judgment on the risks of material misstatement. Ashton (1990) states that “increases in arousal or pressure can result in either better or worse performance, depending on whether the task is easy or difficult”. On the other hand, a pressure is recognized by auditors. For example, Lu, Wu, and Yu (2017) provide evidence suggesting that auditors see market pressure as a risk factor when there is market pressure.

If this is the case, the positive linkage between the risks of material misstatement and audit fees as predicted in this study, therefore, becomes insignificant. As a further check on the robustness of Study Two’s main results – this thesis re-runs model 4.3 using only firms with good financial

⁴⁵ One can argue that not only profitable firms face market pressure but also low profitable firms. For example, managers of low profitable firms may make the firm’s financial reports position look better than it is (Gay & Simnett, 2015), and in turn, place pressure on the auditor due to the possibility of issuing going concern audit opinion. However, in the interest of brevity, the author restricted the sample to only firms with good financial performance.

performance (n= 507) measured by *ROA*. Table 6.11 presents results after restricting the sample to only profitable firms. It shows that number of the risks of material misstatement is positively associated with audit fees. Specifically, the coefficient of 0.100 on the number of risks reported for each firm (*N_RISK*) (*z*-statistic = 2.680) shows that an increase of one risk item increased audit fees by 10%. This coefficient is statistically significant at the 1% level. The results of Table 6.11 hold and are similar to those reported in the main results of Study Two. This suggests that firms with good financial conditions do not put a pressure on the auditor's judgment on the risks of material misstatement.

Table 6.11 Relation between the risks of material misstatement and audit fees: Restricting the sample based on financial performance

Panel A: LN_AUDFEE				
	Coef.	Std. Err.	z	P> z
<i>N_RISK</i>	0.100***	(0.037)	2.680	0.007
<i>LN_P_RISK</i>	0.016	(0.068)	0.240	0.811
<i>INVE_RI</i>	2.59E-05	(0.000)	0.350	0.726
<i>RICE_RI</i>	0.000**	(9.15E-05)	-2.120	0.034
<i>GROWTH</i>	-0.005***	(0.001)	-4.170	0.000
<i>FOROPS</i>	0.201*	(0.112)	1.790	0.074
<i>Ln_Fsize</i>	0.560***	(0.050)	11.120	0.000
<i>LN_TAN</i>	0.050*	(0.030)	1.680	0.093
<i>ACCR</i>	-0.318	(0.677)	-0.470	0.638
<i>ROA</i>				
<i>LEV</i>	0.000	(0.002)	-0.140	0.889
<i>CURNT</i>	-0.005	(0.012)	-0.460	0.648
<i>VOL</i>	-0.001	(0.003)	-0.480	0.632
<i>OPNI</i>	-0.277	(0.606)	-0.460	0.647
<i>BIG4</i>	0.063	(0.154)	0.410	0.681
<i>ZSCORE</i>	0.009	(0.006)	1.330	0.184
<i>SUB</i>	0.000	(0.000)	0.760	0.445
<i>MERG</i>	0.061	(0.081)	0.750	0.450
<i>LOSS</i>				
Intercept	-4.019	(0.809)	-4.970	0.000
Year	Yes			
Industry	Yes			
<i>R</i> ² (Between)	0.672			
Obs.	507			

This table reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after restricting the sample to only profitable firms. Firms are classified as “profitable firms” if firm *ROA* is greater than the median firm *ROA* of the sample. Note that the control variable that is *ROA* is omitted from this estimation as this variable is used to partition the sample and the control variable that is *LOSS* due to collinearity in this regression. The dependent variable is the log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Likewise, Raghunandan and Rama (2006) who study the linkage between material weakness and audit fees consider the type of risks. They consider the type of risks because there is an argument that the association between audit fees and the presence of a material weakness disclosure varies based on the type of material weakness: systemic or non-systemic (Fitch, 2005). Based on this argument, it is expected that the positive relationship between the risks of material misstatement and audit fees as predicted in this study should become stronger if the sample is restricted to only firms with systemic risks (e.g., bankruptcy risk). Hence, Study Two, to increase the robustness of the main results, re-runs the model (4.3) using only firms with a higher likelihood of going bankrupt.

In Table 6.12, Panel A reports the results after restricting the sample to only firms with a higher likelihood of going bankrupt. The new results confirm the positive association between audit fees and the RMM. Specifically, the coefficient of the number of risks reported for each firm (*N_RISK*) is 0.124 with the *z*-statistic of 3.440 (significant at the 1% level). This suggests that an increase of one risk item increased audit fees 12.4%. As anticipated, the coefficient of *N_RISK* became stronger after restricting the sample to only higher bankruptcy risk firms compared to the coefficient of 0.054 on *N_RISK* (*z*-statistic=2.460, significant at the 5% level) reported in Table 6.7.

Besides, a high rate of sales growth is a significant risk to the auditors as many errors come from this factor (Hylas and Ashton, 1982), and this factor is linked to audit failure, audit risk, and fraud cases (Hylas & Ashton, 1982; Pratt & Stice, 1994; Sharma, 2004). Hence, this study expects that if the sample is restricted to only firms with a high rate of sales growth, the association between audit fees and the RMM should become stronger. Panel B in Table 6.12 shows that in firms with a high rate of sales growth, an increase of one risk item increased audit fees 9.9% (*z*-statistic=2.600, significant at the 1% level) compared to the coefficient of 0.054 on *N_RISK* (*z*-statistic=2.460, significant at the 5% level) (see Table 6.7). The above analysis

indicates that restricting the sample to only firms with systematic risks provides a stronger relationship between audit fees and the risks of material misstatement which may increase the confidence that the results are robust.

Table 6. 12 Relation between the risks of material misstatement and audit fees: Restricting the sample based on systemic risks

	Panel A: <i>LN_AUDFEE</i>				Panel B: <i>LN_AUDFEE</i>			
	Coef.	Std. Err.	Z	P>z	Coef.	Std. Err.	Z	P>z
<i>N_RISK</i>	0.124	(0.036)	3.440	0.001***	0.099	(0.038)	2.600	0.009***
<i>LN_P_RISK</i>	-0.024	(0.068)	-0.360	0.718	0.026	(0.064)	0.410	0.679
<i>INVE_RI</i>	7.65E-06	(0.000)	0.180	0.856	0.000	(0.000)	1.290	0.197
<i>RICE_RI</i>	-1.71E-06	(0.000)	-0.050	0.961	-0.000	(0.000)	-1.460	0.143
<i>GROWTH</i>	-0.001	(0.001)	-0.470	0.636				
<i>FOROPS</i>	0.135	(0.107)	1.270	0.205	0.531	(0.105)	5.040	0.000***
<i>Ln_Fsize</i>	0.467	(0.045)	10.400	0.000***	0.478	(0.039)	12.140	0.000***
<i>LN_TAN</i>	0.112	(0.032)	3.460	0.001***	0.105	(0.029)	3.570	0.000***
<i>ACCR</i>	-0.107	(0.328)	-0.330	0.744	1.495	(2.010)	0.740	0.457
<i>ROA</i>	0.005	(0.003)	1.530	0.127	0.005	(0.003)	1.670	0.095*
<i>LEV</i>	0.000	(0.001)	-0.200	0.844	-0.001	(0.002)	-0.530	0.599
<i>CURNT</i>	-0.009	(0.010)	-0.930	0.351	-0.012	(0.012)	-1.030	0.302
<i>VOL</i>	0.000	(0.002)	0.190	0.853	0.002	(0.003)	0.570	0.570
<i>OPNI</i>	0.324	(0.383)	0.850	0.397	0.082	(0.285)	0.290	0.775
<i>BIG4</i>	-0.061	(0.147)	-0.420	0.678	0.073	(0.137)	0.530	0.595
<i>ZSCORE</i>					0.004	(0.006)	0.730	0.467
<i>SUB</i>	0.000	(0.000)	-0.140	0.890	0.000	(0.000)	-0.190	0.849
<i>MERG</i>	0.072	(0.079)	0.910	0.362	0.078	(0.088)	0.890	0.375
<i>LOSS</i>	-0.032	(0.105)	-0.310	0.757	-0.236	(0.146)	-1.620	0.106
Intercept	-4.102	(0.589)	-6.960	0.000***	-5.069	(0.681)	-7.440	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
R ² (Between)	0.712				0.663			
Obs.	504				504			

Panel A reports the robustness results of RE estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees after restricting the sample to only higher bankruptcy risk firms. Note that the control variable that is Z-Score (*ZSCORE*) is omitted from this estimation as this variable is used to partition the sample. Firms are classified as “higher bankruptcy risk firms” if firm’s Z-Score is below the median firm Z-Score of the sample. Panel B presents the results (using RE method) between auditor’s risks reported in the extended auditor’s report and audit fees after restricting the sample to only firms with high rates of sales growth. Firms are classified as “high rate of growth” if firm’s sales growth is greater than the median firm’s sales growth of the sample. Note that the control variable that is the rate of sales growth (*GROWTH*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is the log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively

6.6.3 Feasible Generalized Least Squares (FGLS)

The challenge with the audit fees model is that it includes many control variables as there are many audit fee determinants (Simunic, 1980). This may result in over-controlling for variables correlated with audit fees (Ball et al., 2012) which may increase the likelihood of

heteroscedasticity⁴⁶ problems. To rule out this possibility, following Ball et al. (2012), who examine the linkage between audit fees and disclosures of private information, this study uses an alternative estimation approach that is Feasible Generalized Least Squares (FGLS) estimator. The FGLS estimator is also called a Weighted Least Squares (WLS) estimator. This approach assigns higher weights to better-behaved observations (Baker & Hall, 2004).

The results (using FGLS method) are tabulated in Table 6.13. The coefficients on *N_RISK* and *LN_P_RISK* in the audit fee regressions are positive and significant at the 10% level. Although these results are similar to those obtained in the main regressions of this study, the use of FGLS method provides weaker results on the linkage between audit fees and the risks of material misstatement. This is because p-value of *N_RISK* ($P = 0.027$) in FGLS method is greater than p-value of *N_RISK* ($P = 0.014$) in the main regressions. However, coefficients on *N_RISK* in FGLS and main regressions are positive and significant at the 10% level. These results suggest that the relation between audit fees and auditor's risks reported in the extended auditor's report is robust to using an FGLS regression. In addition, the results (based on FGLS method) indicate that heteroscedasticity and outlier problems do not noticeably affect the estimated relation between audit fees and the risks of material misstatement reported in the extended auditor's report.

⁴⁶ A situation where the variability of a variable is unequal across the range of values of a second variable that predicts it (Bollerslev, 1986).

Table 6.13 Relation between the risks of material misstatement and audit fees: Analysis based on Feasible Generalized Least Squares

	<i>LN_AUDFEE</i>			
	Coef.	Std. Err.	Z	P> Z
<i>N_RISK</i>	0.054	(0.024)	2.210	0.027**
<i>LN_P_RISK</i>	0.125	(0.050)	2.470	0.014**
<i>INVE_RI</i>	0.000	(1.62E-05)	6.390	0.000***
<i>RICE_RI</i>	-4E-05	(1.01E-05)	4.000	0.000***
<i>GROWTH</i>	-0.001	(0.001)	-1.650	0.100
<i>FOROPS</i>	0.538	(0.061)	8.790	0.000***
<i>Ln_Fsize</i>	0.429	(0.019)	23.130	0.000***
<i>LN_TAN</i>	0.159	(0.014)	11.210	0.000***
<i>ACCR</i>	-0.220	(0.163)	-1.350	0.179
<i>ROA</i>	0.006	(0.001)	10.050	0.000***
<i>LEV</i>	-0.002	(0.001)	-1.830	0.068*
<i>CURNT</i>	-0.007	(0.004)	-2.020	0.044**
<i>VOL</i>	0.006	(0.002)	2.540	0.011**
<i>OPNI</i>	0.164	(0.144)	1.150	0.252
<i>BIG4</i>	0.091	(0.078)	1.170	0.241
<i>ZSCORE</i>	-0.005	(0.005)	-1.200	0.232
<i>SUB</i>	0.000	(0.000)	-3.750	0.000***
<i>MERG</i>	0.072	(0.057)	1.250	0.213
<i>LOSS</i>	-0.101	(0.101)	-1.000	0.318
Intercept	-6.008	(0.307)	-19.580	0.000***
Adj. R^2	0.733			
Obs.	1008			

This table reports the robustness results of FGLS estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees. The dependent variable is the log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6.6.4 Two-Stage-Least-Squares (2SLS)

This study hypothesis that RMM in the extended auditor’s report influence positively the levels of audit fees. However, is a chance that the auditors may “choose the reporting strategy” of the number of risks after considering the level of cost and benefits. Specifically, an auditor may consider the level of audit fees when he/she highlights the risks in his/her report. This concern suggests that the main results of the relationship between the RMM in the extended auditor’s report and audit fees might suffer from self-selection bias. In addition, one can argue that audit fees in reality can also drive the number of risks in the extended auditor’s report. The number of risks reported for each firm (*N_RISK*) would be then endogenous to the audit fees and

random-effects estimation of Equation 4.3 is likely to produce inconsistent estimators (Arora, 1996; Hail, 2002). Therefore, although the number of risks in the extended auditor's report occurred before the agreement on audit fees as these risks are evaluated during the audit while the audit fee is agreed on after the audit, this study applies the Two-Stage Least Squares (2SLS) in order to address for the potential endogeneity between audit fees and the number of risks reported by auditors in the extended audit's report.

In applying 2SLS, the challenge is to come up with instrumental variables that are correlated with the endogenous variable; that is, number of risks reported for each firm (N_RISK) (X) but uncorrelated with the dependent variable; that is, audit fees (LN_AUDFEE) (Y). To this end, this study uses instruments that are used in prior research (Alford & Berger, 1999; Hail, 2002; Hope, 2003; Lang & Lundholm, 1996). These instruments include foreign operations ($FOROPS$), firm size (Ln_Fsize), tangible assets (LN_TAN), total accruals ($ACCR$), return on assets (ROA), leverage (LEV), and audit firm type ($BIG4$). The estimated model is as follows:

$$N_RISK_{it} = \epsilon_0 + \epsilon_1 LN_P_RISK_{it} + \epsilon_2 FOROPS_{it} + \epsilon_3 Ln_Fsize_{it} + \epsilon_4 LN_TAN_{it} + \epsilon_5 ACCR_{it} + \epsilon_6 ROA_{it} + \epsilon_7 LEV_{it} + \epsilon_8 BIG4_{it} + \zeta_{it} \quad (6.1)$$

where, N_RISK is number of risks of material misstatement reported in the auditor's report and estimated as the dependent variable. The number of words used in per risk (P_RISK), foreign operations ($FOROPS$), firm size (Ln_Fsize), tangible assets (LN_TAN), total accruals ($ACCR$), return on assets (ROA), leverage (LEV), and audit firm type ($BIG4$) are instrumental variables. These variables are previously described in Table 4.2

Table 6.14 presents the results from estimating Equation 6.1 that is the results of the first stage regression. As can be seen in Table 6.14, all the instrumental variables are correlated with number of risks reported for each firm (N_RISK) except return on assets (ROA), and leverage (LEV). Panel B of Table 6.14 presents the result of the endogeneity test. The results show that

number of risks reported in the extended auditor's report (*N_RISK*) is not an endogenous variable to the audit fees because p-value of the endogeneity test equals 0.1951. This is larger than critical value of 0.05. As a result, the null hypothesis that number of risks of material misstatement reported in the auditor's report (*N_RISK*) is an exogenous variable is not rejected. This indicates that the endogeneity problem from simultaneity bias is not a threat in this study.

Table 6.14 Estimation of number of risks (*N_RISK*)

Panel A: First stage regression of number of risks (<i>N_RISK</i>)				
	Coef.	Std. Err.	Z	P> Z
<i>LN_P_RISK</i>	0.832	(0.051)	16.170	0.000***
<i>FOROPS</i>	0.434	(0.093)	4.650	0.000***
<i>Ln_Fsize</i>	0.113	(0.032)	3.540	0.000***
<i>LN_TAN</i>	0.075	(0.027)	2.770	0.006***
<i>ACCR</i>	-0.578	(0.243)	-2.380	0.017**
<i>ROA</i>	-0.003	(0.003)	-1.070	0.286
<i>LEV</i>	-0.001	(0.001)	-1.150	0.252
<i>BIG4</i>	-0.419	(0.122)	-3.450	0.001***
Intercept	-2.154	0.475	-4.530	0.000***
Year	Yes			
Industry	Yes			
R ² (Between)	0.622			
Obs.	1008			

Panel A reports the robustness results of RE estimation of Equation 4.3. Dependent variable is number of risks (*N_RISK*). The instrument variables are the number of words used in per risk (*LN_P_RISK*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), total accruals (*ACCR*), return on assets (*ROA*), leverage (*LEV*), and audit firm type (*BIG4*). Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B: Endogeneity test *N_RISK*

Underidentification test (Anderson canon. corr. LM statistic):		68.365
	Chi-sq(8) P-val =	0.000
Sargan statistic (Overidentification test of all instruments):		38.614
	Chi-sq(7) P-val =	0.000
Endogeneity test of endogenous regressors:		1.679
	Chi-sq(1) P-val=	0.1951
Regressors tested:	(<i>N_RISK</i>)	
Instrumented:	(<i>N_RISK</i>)	
	(<i>INVE_RI</i> & <i>RICE_RI</i>),	
Included instruments:	(<i>GROWTH</i>), (<i>CURNT</i>), (<i>VOL</i>),	
	(<i>OPND</i>), (<i>ZSCORE</i>), (<i>SUB</i>),	
	(<i>MERG</i>), and (<i>LOSS</i>).	
	(<i>LN_P_RISK</i>) (<i>FOROPS</i>),	
Excluded instruments:	(<i>Ln_Fsize</i>), (<i>LN_TAN</i>), (<i>ACCR</i>),	
	(<i>ROA</i>), (<i>LEV</i>), and (<i>BIG4</i>).	

However, the instrumental variables used in model 6.1 and used in prior research may not be well fitted because return on assets (*ROA*) and leverage (*LEV*) are uncorrelated with the model

(6.1) dependent variable; that is, number of risks reported for each firm (N_RISK). To this end, this study re-estimates the instrumental variables (reported in Table 6.15) and includes only variables that are correlated with number of risks reported for each firm (N_RISK). Panel B in Table 6.15 presents the result of the endogeneity test after including variables that are correlated with number of risks (N_RISK). Again, the results show that the number of risks reported for each firm (N_RISK) is not an endogenous variable (p-value =0.2132).

Table 6.15 Estimation of number of risks (N_RISK)

Panel A: First stage regression of N_RISK				
	Coef.	Std. Err.	Z	P> Z
LN_P_RISK	0.839	(0.052)	16.370	0.000***
$FOROPS$	0.440	(0.093)	4.740	0.000***
Ln_Fsize	0.111	(0.032)	3.510	0.000***
LN_TAN	0.081	(0.027)	2.990	0.003***
$ACCR$	-0.602	(0.243)	-2.480	0.013**
ROA				
LEV				
$BIG4$	-0.415	(0.122)	-3.420	0.001***
Intercept	-2.228	(0.469)	-4.750	0.000***
Year effects	Yes			
Industry effects	Yes			
R^2 (Between)	0.622			
Obs.	1008			

Panel A reports the robustness results of RE estimation of Equation 4.3 after dropping return on assets (ROA) and leverage (LEV). Dependent variable is number of risks (N_RISK). The instrument variables are the number of words used in per risk (LN_P_RISK), foreign operations ($FOROPS$), firm size (Ln_Fsize), tangible assets (LN_TAN), total accruals ($ACCR$), and audit firm type ($BIG4$). Note: ROA and LEV are dropped due to the correlation with N_RISK . Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B Endogeneity test of number of risks (N_RISK)

Underidentification test (Anderson canon. corr. LM statistic):		62.544
	Chi-sq(6) P-val =	0.000
Sargan statistic (Overidentification test of all instruments):		33.708
	Chi-sq(5) P-val =	0.0000
Endogeneity test of endogenous regressors:		1.549
	Chi-sq(1) P-val=	0.2132
Regressors tested:	(N_RISK)	
Instrumented:	(N_RISK)	
Included instruments:	$(INVE_RI \& RICE_RI)$, $(GROWTH)$, $(CURNT)$, (VOL) , $(OPNI)$, $(ZSCORE)$, (SUB) , $(MERC)$, and $(LOSS)$.	
Excluded instruments:	(LN_P_RISK) , $(FOROPS)$, (Ln_Fsize) , (LN_TAN) , $(ACCR)$, and $(BIG4)$	

As a last check, this study runs model 4.3 to examine whether the instrumental variables used in Table 6.15 are correlated with audit fees (*LN_AUDFEE*) (Y). This is done aiming to have a strong instrument (instruments that are correlated with X, but uncorrelated with Y). Table 6.16 shows that the number of words used in per risk (*LN_P_RISK*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), and tangible assets (*LN_TAN*) are correlated with audit fees (*LN_AUDFEE*) (Y) leaving only two instruments that are total accruals (*ACCR*) and audit firm type (*BIG4*). Therefore, this study re-estimates model 6.1 and includes instruments that are correlated with X, but uncorrelated with Y (total accruals and audit firm type). Again, as Panel B of Table 6.16 shows, p-value = 0.5992 of the endogeneity test is large which means that the number of risks reported for each firm (*N_RISK*) is not an endogenous variable. In addition, p-value of Sargan statistic equates to 0.8558 which supports the null hypothesis that is the instrument set is valid and the model is correctly specified. However, instruments are not strong as the p-value of Underidentification test equates to 0.201.

Table 6.16 Relation between the risks of material misstatement and audit fees

Panel A: <i>LN_AUDFEE</i>				
	Coef.	Std. Err.	Z	P> Z
<i>N_RISK</i>				
<i>LN_P_RISK</i>	0.099	(0.035)	2.800	0.005***
<i>FOROPS</i>	0.278	(0.079)	3.530	0.000***
<i>Ln_Fsize</i>	0.491	(0.029)	16.830	0.000***
<i>LN_TAN</i>	0.071	(0.023)	3.070	0.002***
<i>ACCR</i>	-0.101	(0.153)	-0.660	0.512
<i>ROA</i>				
<i>LEV</i>				
<i>BIG4</i>	0.039	(0.117)	0.330	0.741
Intercept	-4.506	(0.411)	-10.970	0.000***
Year	Yes			
Industry	Yes			
R ² (Between)	0.692			
Obs.	1008			

Panel A reports the robustness results of RE estimation of Equation 4.3 after dropping return on assets (*ROA*) and leverage (*LEV*). The dependent variable is the log of audit fees (*LN_AUDFEE*). The independent variable is number of risks (*N_RISK*). The instrument variables are the number of words used in per risk (*LN_P_RISK*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), total accruals (*ACCR*), and audit firm type (*BIG4*). Note: (1) (*ROA*) and (*LEV*) are dropped due to the correlation with (*N_RISK*), and (2) only (*ACCR*) and (*BIG4*) are uncorrelated with Y, but correlated with X. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel B Endogeneity test of *N_RISK*

Underidentification test (Anderson canon. corr. LM statistic):		3.207
	Chi-sq(2) P-val =	0.201
Sargan statistic (overidentification test of all instruments):		0.033
	Chi-sq(2) P-val =	0.8558
Endogeneity test of endogenous regressors:		0.276
	Chi-sq(1) P-val=	0.5992
Regressors tested:	(<i>N_RISK</i>)	
Instrumented:	(<i>N_RISK</i>)	
	(<i>INVE_RI</i> & <i>RICE_RI</i>), (<i>GROWTH</i>)	
Included instruments:	(<i>CURNT</i>), (<i>VOL</i>), (<i>OPNI</i>), (<i>ZSCORE</i>),	
	(<i>SUB</i>), (<i>MERG</i>), and (<i>LOSS</i>).	
Excluded instruments:	(<i>ACCR</i>), and (<i>BIG4</i>)	

6.6.5 Bootstrapping approach

According to Efron and Tibshirani (1986), bootstrap method could be used to assess the measures of statistical errors including terms of the standard error, the sample mean, the estimation of bias, variance, confidence intervals, and prediction error. Within this context, Bernard (1987) argues about the problems in inference that could happen as a result of the bias that exists in OLS-based estimates of coefficient variances. He indicates that one of the approaches to deal with the bias of cross-sectional correlation is the bootstrap method. In using this method, it increases the quality of inference by resampling the sample data and performing inference about a sample from the resampled data, hence the true confidence interval (Efron & Tibshirani, 1986).

Numerous studies use bootstrap method in the area of accounting and financial studies. For example, Bear, Rahman, and Post (2010) study the impact of women in boardrooms on corporate social responsibility. In doing so, they run a small sample size. This may threaten the reliability and credibility of the findings. In response to this threat, Bear et al. (2010) use bootstrapping approach to further confirm mediation findings. In addition, Khaghaany (2015) uses bootstrap standard errors to investigate the determinants of choosing an amortized cost basis over fair value for non-derivative financial instruments in publicly listed IFRS banks.

Furthermore, to determine whether findings are robust to alternative specifications, Bell et al. (2001) apply bootstrap standard error estimation to confirm their findings that auditors charge more for firms with higher business risk.

To further ensure the robustness of Study Two results, this study adopts bootstrapping approach. Table 6.17 presents results based on bootstrap standard error estimation. In running the bootstrapping model, the number of replications underlying each bootstrap distribution for this method is 1000 times. The results confirm the positive association between audit fees and the risks of material misstatement. Consistent with the expectation in H1 (a), the results show that the coefficient on the number of risks reported for each firm (*N_RISK*) equals 0.045 (statistically significant at the 10% level with a standard error of 0.027 compared to 0.002 in the main results). This indicates that an increase of one risk item increased audit fees by 4.5%. The use of this method should increase the confidence that findings are robust to alternative specifications.

Table 6.17 Relation between the risks of material misstatement and audit fees: Bootstrapping approach

	<i>LN_AUDFEE</i>			
	B	Bias	Bootstrap Std. Error	P> Z
<i>N_RISK</i>	0.045	0.000	(0.027)	0.092*
<i>LN_P_RISK</i>	0.206	-0.001	(0.053)	0.001***
<i>INVE_RI</i>	8.772E-	-1.836E-	(1.703E-)	0.001***
<i>RICE_RI</i>	-3.906E-	1.435E-	(1.357E-)	0.002***
<i>GROWTH</i>	-0.001	0.000	(0.001)	0.135
<i>FOROPS</i>	0.575	-0.007	(0.075)	0.001***
<i>Ln_Fsize</i>	0.452	-0.001	(0.023)	0.001***
<i>LN_TAN</i>	0.141	0.000	(0.016)	0.001***
<i>ACCR</i>	-0.360	-0.017	(0.247)	0.096*
<i>ROA</i>	0.006	-1.767E-	(0.002)	0.002***
<i>LEV</i>	-0.001	0.000	(0.001)	0.620
<i>CURNT</i>	-0.018	-4.477E-	(0.009)	0.028**
<i>VOL</i>	0.006	8.829E-	(0.003)	0.032**
<i>OPNI</i>	0.103	-0.015	(0.129)	0.410
<i>BIG4</i>	0.077	-0.001	(0.076)	0.311
<i>ZSCORE</i>	-0.005	-0.001	(0.006)	0.329
<i>SUB</i>	0.000	2.087E-	(9.002E)	0.028**
<i>MERG</i>	0.108	0.000	(0.064)	0.101
<i>LOSS</i>	-0.172	0.003	(0.096)	0.061*
Intercept	-6.555	0.023	(0.358)	0.001***
Year	Yes			
Industry	Yes			
Adj. R ²	0.645			

This table reports the robustness results of bootstrap standard error estimation of Equation 4.3 on the interaction effect of RMM proxied by number of risks and number of words used in per risk on audit fees. The dependent variable is log of *AUDFEE*. The independent variable is RMM measured by total number of risks found by auditors (*N_RISK*) and the natural logarithm of total number of words used in per risk (*LN_P_RISK*). Bootstrap results are based on 1000 bootstrap samples. Standard errors are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6.7 Chapter summary and conclusion

This chapter has reported on the study that examines the impact of regulation changes that is adopting a new auditing standard *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements* on audit and auditee behavior in the context of the risks of material misstatement. Study Two uses a large sample of 1008 firm-year observations over the period from 2014 to 2016 and applies random-effects (RE) regression in examining such relationship.

In the analysis presented, this study finds that both audit fees and non-audit service fees are associated with the risks of material misstatement. Specifically, the number of risks reported for each firm and number of words used in per risk have a positive and significant relationship with audit fees. In addition, this study finds that the number of risks reported for each firm have a positive and significant link with non-audit service fees. This study builds on the literature by providing recent evidence that not only audit fees increased with the new auditor's report but also non-audit service fees.

For robustness checks, the author has used a number of tests including (1) changing the measurement of variables; (2) splitting the sample; and (3) using (i) Feasible Generalized Least Squares (FGLS); (ii) Two-Stage-Least-Squares (2SLS); and (iii) Bootstrapping approach. The results from this study accomplish the second objective of this thesis. Overall, findings support the argument that audit fees are a function of client size, risk, internal controls weakness, and financial restatements.

CHAPTER 7: STUDY THREE RESULTS: Auditing standards, increased accounting disclosures, and information asymmetry in the market for the firm's stock: Evidence from the U.K.

7.1 Introduction

As mentioned in Chapter 1 Section 3, the objective of this thesis is to investigate the determinants and the consequences of auditor's disclosures in relation to the risks of material misstatement. To achieve this aim, Study Three investigates the consequences of auditor's disclosures on the market microstructure (i.e., information asymmetry or stock liquidity). Specifically, how the disclosures of risks of material misstatement affect stock liquidity through eliminating information asymmetry. This study adopts several proxies to measure stock liquidity including bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*).

This study uses balanced panel data to regress a sample of 1047 firm-year observations from the London Stock Exchange with a premium listing of equity shares over the period from 2014 to 2016. This is done to test the hypothesis developed in Chapter 3 with regard to the linkage between the disclosures of risks of material misstatement in the extended auditor's report and the information asymmetry in the market for the firm's stock. In doing so, this study provides evidence that increased accounting disclosures have an influence on the information asymmetry component in the market. Hence, findings from this study achieve the third objective of this thesis. The author of this study has used a number of tests as a check on the robustness of the main results. These include (1) the use of random-effects GLS regression; (2) robustness tests to control for firm conditions effect; (3) splitting the sample; (4) the use of Feasible Generalized Least Squares (FGLS), and (5) the use of Two-Stage-Least-Squares (2SLS).

7.2 Descriptive statistics

Table 7.1 displays descriptive statistics of the linkage between the disclosures of RMM and stock liquidity across a total of 1074 firm-year observations, over the period from 2014 to 2016. On average, auditors disclose 1078.499 words in the auditor's report in relation to RMM with a minimum of 17 and a maximum of 5219 words. In addition, the median number of words disclosed by auditors is 986.910 words. This indicates that some auditors disclose relatively more than others across the sample. These disclosures provide information about why the risks of material misstatement occur, how these risks are dealt with by the auditors, and what the auditors then found. These results are consistent with the findings of similar work of the U.K. Financial Reporting Council (FRC) that finds, in a one-year study, PwC use an average of 1557 words per auditor's report, followed by KPMG (mean = 992), EY (mean = 971), and the lowest is Deloitte (mean= 893 words) (FRC, 2016) in their disclosures of RMM. The FRC says that this large number of discourses may reflect the different levels of complexity between the populations (FRC, 2016).

In terms of stock liquidity proxies, the mean (median) of bid-ask spread (*SPR*) is £2.752 (£1.698) with the 25th (75th) percentile equal to £0.774 (£2.990). This indicates that majority of firms listed on the London Stock Exchange have liquid stocks as mean of the bid-ask spread (*SPR*) is way below £4. The mean (median) liquidity ratio (*LR*) is 1.343 (1.110 trading volume per day) with the 25th (75th) percentile equal to 0.890 (1.250 trading volume per day). This shows that the London Stock Exchange as a market has great depth.

In relation to immediate of shares, the mean (median) stock turnover (*STO*) is 935965.600 (523805.400 times) with the 25th (75th) percentile equal to 383149.800 (707765.700 times). The mean (median) number of trades (*TR*) is 519699 (519579.800 times) with the 25th (75th) percentile equal to 222828.500 (519579.800 times). The mean (median) number level of trade (*LVS*) is 6.962 (3.052) with the 25th (75th) percentile equal to 1.650 (4.695). Lastly, the mean

(median) trading volume (*VOL*) is approximately 8.8 billion (3.2 billion) with the 25th (75th) percentile equal to 1.2 billion (8.6 billion). These proxies that measure immediate of shares indicate that the investor can sell or buy a large block of stock immediately rather than over a long period of time.

In terms of firm characteristics, the sample firms have a large total asset (mean = £48977.790 million, and median = £3770.701 million) with the 25th (75th) percentile equal to £1172.700 million (£15496 million). Accordingly, the firms in this sample represent a wide range of company sizes with a skewed distribution. In addition, the statistics show that firms in this sample have positive financial performance, as the mean (median) of net income (*COM*) is £422.442 (£156.732) with the 25th (75th) percentile equal to £47.500 (£426.986 million). On average, the sample firms have growth (*GROWTH*) of 10.478 with the 25th (75th) percentile equal to -1.131 (14.503).

On average, the sample firms carry £47020.330 million on tangible asset (*PPE*), and 29.961 on return volatility (*VOLA*). The mean (median) share price (*PRC*) is £6.296 (£2.916) with the 25th (75th) percentile equal to £1.563 (£4.444). On average, the sample firms carry 6.847% debt (*LEV*) in their capital structure. In addition, firms in this sample have higher ability to pay for short-term and long-term obligations as the mean (median) current ratio (*CURNT*) is 3.051 (1.548). Furthermore, firms in this study have lower probability to go bankrupt as Z-Score is large (mean = 5.704, and median = 4.858).

Table 7.1 Descriptive statistics

Variables	N	Mean	Std. dev.	Min	Max	25P	Median	75P
<i>WORDS</i>	1074	1078.49	589.51	17.00	5219.00	700.00	986.91	1334.00
<i>SPR</i>	1074	2.75	4.58	0.02	56.11	0.77	1.69	2.99
<i>LR</i>	1074	1.34	1.81	0.09	30.72	0.89	1.11	1.25
<i>STO</i>	1074	935965.60	8653931.00	112.00	2.78E+08	383149.00	523805.00	707765.00
<i>TR</i>	1074	519699	571166.40	207.00	5415341.00	222828.50	519579.80	519579.80
<i>LVS</i>	1074	6.96	46.49	0.46	1352.83	1.65	3.05	4.69
<i>VOL</i>	1074	8.84E+08	2.59E+09	303897.00	4.76E+10	1.22E+08	3.26E+08	8.65E+08
<i>Fsize</i>	1074	48977.79	174452.40	28.81	2634139.00	1172.70	3770.70	15496.00
<i>COM</i>	1074	422.44	2515.46	-6482.00	70259.13	47.50	156.73	426.98
<i>GROWTH</i>	1074	10.47	42.71	-87.01	975.86	-1.13	5.99	14.50
<i>PPE</i>	1074	47020.33	172819.90	28.74	2606562.00	787.50	2735.99	11871.00
<i>LN_PPE</i>	1074	8.24	2.21	3.35	14.77	6.66	7.91	9.38
<i>VOLA</i>	1074	29.96	20.88	6.47	439.82	23.16	26.57	33.04
<i>PRC</i>	1074	6.29	36.93	0.27	914.17	1.56	2.91	4.44
<i>LEV</i>	1074	6.84	16.52	1.00	175.74	1.88	2.85	6.00
<i>CURNT</i>	1074	3.05	6.70	0.05	178.63	1.05	1.54	3.54
<i>ZSCORE</i>	1074	5.70	5.43	-1.93	86.35	2.64	4.85	6.95

This table presents the distribution of variables by showing mean, standard deviation (std. dev), minimum (Min), maximum (Max), 25 percentile, median, and 75 percentile for the main proxy of RMM and the main proxy of stock liquidity with its control variables used in the model. See Table 4.3 for variables definitions.

Table 7.2 displays the industry distribution of RMM disclosures and stock liquidity by GICS industry classification. The highest number of observations in each year is from financials (n=274), followed by consumer discretionary (n=204), industrials (n=201), materials (n= 87), and real estate (n=76). The remaining sectors including consumer staples (n=63), information technology (n=49), health care (n=48), energy (n=33), utilities (n=24), and telecommunication services (n=15) are in the lower range. Among the selected sectors, the mean (median) number of words in RMM disclosures ranges from 918.724 (717.000) words in real estate, to 1478.519 (1419.000) words in the energy sector. Telecommunication services sector and utilities sector have a mean (median) of 1422.200 (1373.000) words and 1251.167 (1173.417) words, respectively. In addition, industrials (mean = 1217.025), health care (mean = 1120.222), consumer discretionary (mean = 1052.797), and consumer staples (mean = 1041.156) have moderate levels of RMM disclosures.

In terms of liquidity, different sectors perform differently. For instance, bid-ask spread (*SPR*) and liquidity ratio (*LR*) are the lowest in telecommunication services with a mean of 0.818 and 0.900, respectively. The highest bid-ask spread (*SPR*) is in information technology (mean = 4.817), and the highest liquidity ratio (*LR*) is in materials (mean = 1.940). In addition, stock turnover (*STO*) is the lowest in information technology with a mean of 457357.700, and is highest in financials followed by industrials with a mean of 1739165.000 and 823530.000, respectively. Number of trades (*TR*) is the lowest in real estate with a mean of 310807.600, and is the highest in energy followed by materials with a mean of 1207658.000 and 771242.300, respectively. This is understandable because real estate firms have a large capital, hence the movement of the shares are lower.

Number of levels (*LVS*) is the lowest in real estate with a mean of 1.263, and is the highest in information technology followed by telecommunication services with a mean of 63.907 and 9.623, respectively. Trading volume (*VOL*) is the lowest in utilities with a mean of 1.05 million,

and is the highest in consumer staples followed by consumer discretionary with a mean of 6.68 million and 5.02 million, respectively. This is expected because when investors seek steady growth, dividends, and low volatility, consumer staples stocks are an option. Firms in this sector are in high demand by customers, hence greater cash flows.

Table 7.2 Sample distribution, and industry-wise RMM disclosures and stock liquidity

Code	Sector	N	WORDS			SPR			LR		
			Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
10	Energy	33	1478.519	498.361	1419.000	1.198	0.845	1.053	1.003	0.240	0.992
15	Materials	87	1048.580	398.344	979.000	1.708	1.432	1.425	1.940	3.323	1.185
20	Industrials	201	1217.025	675.687	1053.500	2.445	3.595	1.545	1.722	3.044	1.420
25	Consumer Discretionary	204	1052.797	489.881	951.000	3.019	5.171	1.597	1.247	0.912	1.244
30	Consumer Staples	63	1041.156	582.051	903.000	2.975	5.015	1.598	1.082	0.469	1.067
35	Health Care	48	1120.222	589.650	1011.077	3.135	2.488	2.310	1.133	1.046	0.965
40	Financials	274	997.254	637.439	940.000	2.718	3.826	2.081	1.236	1.111	1.130
45	Information Technology	49	920.471	383.291	978.000	4.817	5.081	3.302	1.044	0.831	0.930
50	Telecommunication Services	15	1422.200	558.961	1373.000	0.818	0.820	0.723	0.900	0.083	0.930
55	Utilities	24	1251.167	698.157	1173.417	1.435	1.407	1.196	0.993	0.398	0.985
60	Real Estate	76	918.724	558.397	717.000	3.884	9.336	1.312	1.187	0.520	1.081
			STO			TR			LVS		
			Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median
10	Energy	33	821739.300	558737.400	590512.400	1207658.000	1116197.000	519579.800	1.335	0.619	1.153
15	Materials	87	738374.200	406732.600	633260.800	771242.300	1019543.000	519579.800	3.097	2.934	2.483
20	Industrials	201	823530.000	3129358.000	580087.700	421306.600	300019.200	480055.300	5.293	9.395	3.597
25	Consumer Discretionary	204	655353.400	389312.900	691000.400	413981.800	265027.30	501263.100	5.753	8.895	4.170
30	Consumer Staples	63	496509.300	310453.000	431809.700	597202.500	601711.600	519579.800	5.420	5.813	4.362
35	Health Care	48	514586.500	474984.100	457566.000	669435.800	747279.400	519579.800	4.846	2.910	4.438
40	Financials	274	1739165.000	1.69E+07	480551.000	530983.700	566511.200	519579.800	3.187	3.364	3.051
45	Information Technology	49	457357.700	210265.000	422650.400	312289.300	200274.700	298707.000	63.907	209.534	6.185
50	Telecommunication Services	15	538693.600	189781.400	503464.800	750521.600	827770.200	519579.800	9.623	15.102	4.088
55	Utilities	24	679662.700	212815.500	655687.800	693476.500	411752.700	533026.900	4.454	2.898	4.129
60	Real Estate	76	464936.200	180522.000	488918.000	310807.600	200295.700	533026.900	1.263	0.469	1.199
			VOL								
			Mean	Std. Dev.	Median						
10	Energy	33	1.84E+09	2.27E+09	1.45E+09						
15	Materials	87	1.18E+09	2.53E+09	4.40E+08						
20	Industrials	201	4.27E+08	5.19E+08	2.62E+08						
25	Consumer Discretionary	204	5.02E+08	7.22E+08	3.08E+08						

30	Consumer Staples	63	6.68E+08	1.34E+09	2.05E+08
35	Health Care	48	4.10E+08	5.30E+08	2.50E+08
40	Financials	274	1.54E+09	4.39E+09	1.04E+09
45	Information Technology	49	1.66E+08	1.81E+08	1.27E+08
50	Telecommunication Services	15	3.89E+09	5.80E+09	4.09E+08
55	Utilities	24	1.05E+09	1.24E+09	5.71E+08
60	Real Estate	76	2.86E+08	2.23E+08	2.61E+08

Table 7.2 displays a sample distribution across industry classifications according to Global Industry Classifications Standards (GICS) of RMM disclosures (*WORDS*), bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*) for a sample consist of 1074 firm-year observations from 2014 to 2016.

7.3 Correlation analysis

The degree of correlation among the dependent and independent variables is determined by using Pearson's bivariate correlation matrix. With reference to the dependent variable, the results in Table 7.3 indicate that the relationship between the dependent and independent variable is anticipated. The RMM disclosures (*WORDS*) have a significant negative correlation with bid-ask spread (*SPR*) at a level of significance of 0.01. In addition, RMM disclosures (*WORDS*) are positively correlated with the liquidity ratio (*LR*) at the 1% level. This indicates that as auditors increase the disclosures of RMM in auditor's report, the bid-ask spread declines, and the stocks become more liquid. This is consistent with the link between RMM disclosures (*WORDS*) and number of trades (*TR*) which indicates a significant positive correlation at a level of significance of 0.01. Furthermore, RMM disclosures (*WORDS*) have a significant positive correlation with trading volume (*VOL*) at a level of significance of 0.01. However, stock turnover (*STO*) and number of levels (*LVS*) are not correlated with the disclosures of RMM.

In regards to the control variables, firm size (*Fsize*) and asset tangible (*PPE*) have a significant positive correlation with *WORDS* at the 1% level, whereas return volatility (*VOLA*) has a significant positive correlation with *WORDS* at the 10% level. Stock price (*PRC*) and current ratio (*CURNT*) are found to have a statistically negative correlation with the disclosures of RMM (*WORDS*) at the 5% level, while the Z-Score (*ZSCORE*) is negatively correlated with RMM disclosures (*WORDS*) at the 1% level. Other control variables including net income (*COM*), growth (*GROWTH*), and firm leverage (*LEV*) do not correlate with the disclosures of RMM (*WORDS*). Apart from correlation between share price (*PRC*) and number of levels (*LVS*) equals 0.741, none of the correlation coefficients exceeded 0.544 (below 0.8). Hence, no significant multicollinearity issues in the data (Field, 2009).

Table 7.3 Pearson's correlation matrix of variables

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]			
[1] <i>WORDS</i>	1.000									
[2] <i>SPR</i>	-0.144***	1.000								
[3] <i>LR</i>	0.105***	0.001	1.000							
[4] <i>STO</i>	-0.002	-0.008	-0.005	1.000						
[5] <i>TR</i>	0.277***	-0.144***	0.041	0.007	1.000					
[6] <i>LVS</i>	-0.055	0.035	-0.020	-0.004	-0.019	1.000				
[7] <i>VOL</i>	0.342***	-0.128***	0.003	0.011	0.470***	-0.026	1.000			
[8] <i>Fsize</i>	0.234***	-0.082***	0.079***	-0.013	0.388***	-0.029	0.472***	1.000		
[9] <i>COM</i>	0.045	-0.040	0.014	-0.008	0.061**	-0.007	0.174***		1.000	
[10] <i>GROWTH</i>	-0.044	0.028	-0.029	-0.001	-0.055*	0.012	-0.036			1.000
[11] <i>LN_PPE</i>	0.157***	-0.190***	-0.002	-0.048	0.420***	-0.128***	0.377***			
[12] <i>VOLA</i>	0.096*	0.007	0.004	-0.005	0.069**	0.032	0.033			
[13] <i>PRC</i>	-0.061**	0.069**	-0.023	-0.005	-0.011	0.741***	-0.029			
[14] <i>LEV</i>	0.046	-0.046	0.063**	0.008	0.051*	0.021	0.096***			
[15] <i>CURNT</i>	-0.077**	0.009	-0.041	-0.009	-0.011	-0.027	0.041			
[16] <i>ZSCORE</i>	-0.168***	0.127***	-0.056	0.028	-0.076**	0.480***	-0.027			
	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	
[8] <i>Fsize</i>	1.000									
[9] <i>COM</i>	0.206***	1.000								
[10] <i>GROWTH</i>	-0.002	-0.017	1.000							
[11] <i>LN_PPE</i>	0.544***	0.175***	0.015	1.000						
[12] <i>VOLA</i>	-0.028	-0.061**	0.090***	-0.046	1.000					
[13] <i>PRC</i>	-0.032	-0.009	0.005	-0.147***	-0.012	1.000				
[14] <i>LEV</i>	0.219***	0.003	0.084***	0.285***	-0.010	0.021	1.000			
[15] <i>CURNT</i>	0.117***	-0.003	0.043	0.120***	-0.031	-0.030	0.066**	1.000		
[16] <i>ZSCORE</i>	0.048	-0.031	0.088***	-0.161***	0.013	0.482***	-0.014	0.307***	1.000	

This table reports correlation matrix of all dependent and independent variables *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The definition and measurements of all these variables are given in Table 4.3.

7.4 Main results

This section presents and discusses the results of the empirical analysis for the relation between the disclosures of risks of material misstatement and the information asymmetry across market participants for the entire sample of 1047 firm-year observations over the 2014 to 2016 period.

This study predicts that providing investors with more value-relevant information through the disclosures of RMM reduces information asymmetry and in turn increases the stock liquidity of firms. This is because providing more information reduces information asymmetry (Gonedes, 1980; Greenstein & Sami, 1994; Verrecchia, 1982). Reduction of the information asymmetry by including more disclosures reduces the bid-ask spread (Copeland & Galai, 1983; Glosten & Milgrom, 1985; Jaffe & Winkler, 1976; Sabet & Heaney, 2015; Venkatesh & Chiang, 1986), and increases the trading volume (Bartov & Bodnar, 1996; Chae, 2005; Glosten & Milgrom, 1985; Karpoff, 1986; Yoon et al., 2011).

To examine the association between the disclosures of risks of material misstatement and market microstructure (i.e., stock liquidity), this research employs the pooled ordinary least squares (OLS) as a baseline method to test the cross-sectional variation in the association between the dependent and the independent variables (model 4.9). As can be seen in Table 7.4, this model is estimated based on panel data using Stata 13 statistical data analysis. The regression Equation 4.9 has an adjusted R-square of 6.1%, 3.1%, 1.7%, 38%, 57%, and 30% for bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*), respectively.

The results confirm the positive association between the disclosures of risks of material misstatement and stock liquidity as expected in H1. Specifically, the coefficient of - 0.007 on the disclosures of risks of material misstatement (*WORDS*) (t -statistic = - 2.510) shows that a one word increase in the disclosures of risks of material misstatement reduced bid-ask spread

(*SPR*) on average by £0.007. This coefficient is statistically significant at the 5% level. This would mean that if the mean RMM disclosures (*WORDS*) increase from 1078.449 to 1079.449, the mean bid-ask spread (*SPR*) will decrease from £2.752 to £2.745 a year. This indicates that the auditor's disclosures of RMM reduce the information asymmetry amongst investors which resulted in the reduction of bid-ask spread. This is consistent with previous research that finds bid-ask spread decreases in firms that provide more disclosures (Schoenfeld, 2017; Shroff et al., 2013). This result is also consistent with previous research which shows a negative relation between bid-ask spreads and better governed firms (e.g., Ali et al., 2017; Attig et al., 2006; Bhide, 1999; Brockman & Chung, 2003; Chung et al., 2010; Coffee, 1991; Maug, 1998).

In addition, the coefficient of the disclosures of risks of material misstatement (*WORDS*) is 0.003 with the *t*-statistic of 2.610 (significant at the 10% level) which suggests that a one word increase in *WORDS* increased the liquidity ratio (*LR*) by 0.003 trading volume per day. This shows that as auditor's disclosures of RMM increase, the market increases depth. Prommin et al. (2014) provide similar results that liquidity ratio significantly rises after improving governance quality. This is in line with Ali et al. (2017) who provide a positive linkage between liquidity ratio and better governed firms.

However, the disclosures of risks of material misstatement do not influence the stock turnover (*STO*), but increase number of trades (*TR*) by 136 times with the *t*-statistic equal to 5.290 (significant at the 1% level). Furthermore, the disclosures of risks of material misstatement do not significantly affect number of levels (*LVS*), but increase the trading volume (*VOL*) by 1057025 times with the *t*-statistic equal to 8.640 (significant at the 1% level). This indicates that investors now have the ability to possess value-relevant information through the auditor's disclosures which reduce information asymmetry, and this gives the investors the chance to buy or sell large blocks of stock in short periods of time (immediate). Similar findings are provided by Bartov and Bodnar (1996), Glosten and Milgrom (1985), and Karpoff (1986) who

find trading volume is low in stocks with greater information asymmetry. The findings of this study suggest that there are capital market consequences experienced by the U.K. listed firms when the disclosures of RMM are made public and such disclosures by auditors are relevant for investors.

Table 7.4 RMM and stock liquidity: Pooled ordinary least square

Variables	<u>SPR</u>				<u>LR</u>				<u>STO</u>				<u>TR</u>			
	Coef	Std. Err.	t	P>t	Coef	Std. Err.	t	P>t	Coef	Std. Err.	t	P>t	Coef	Std. Err.	t	P>t
WORDS	-0.007	0.003	-2.510	0.012**	0.003	0.001	2.610	0.009*	441.161	492.691	0.900	0.371	136	25.831	5.290	0.000***
Fsize	6.02E-	9.85E-	0.610	0.541	1.06E-	3.96E-	2.690	0.007***	0.082	1.923	0.040	0.966	0.777	0.101	7.710	0.000***
COM	-3.08E	5.77E-	-0.050	0.957	1.24E-	2.32E-	0.540	0.592	22.431	112	0.200	0.842	-19.444	5.910	-3.290	0.001***
GROWTH	0.001	0.003	0.420	0.674	-0.004	0.001	-0.320	0.745	-1580	6478	-0.240	0.807	-453	339	-1.340	0.182
LN_PPE	-0.414	0.091	-4.520	0.000***	-0.068	0.036	-1.860	0.063*	-527857	178873	-2.950	0.003***	102505	9377	10.930	0.000***
VOLA	0.010	0.006	1.520	0.128	-0.016	0.002	-0.570	0.571	-423	13524	-0.030	0.975	167	709	0.240	0.813
PRC	-0.002	0.005	-0.040	0.968	0.004	0.001	0.240	0.812	-2833	8663	-0.330	0.744	523	454	1.150	0.249
LEV	-0.002	0.009	-0.020	0.982	0.071	0.003	1.990	0.046**	8711	17251	0.500	0.614	-2062	904	-2.280	0.023**
CURNT	-0.020	0.022	-0.890	0.372	-0.007	0.009	-0.850	0.395	-66899	44805	-1.490	0.136	-619	2349	-0.260	0.792
ZSCORE	0.048	0.034	1.410	0.160	-0.018	0.013	-1.330	0.183	11009	66648	0.170	0.869	5294	3494	1.520	0.130
Intercept	6.294	1.268	4.960	0.000***	1.350	0.509	2.650	0.008***	6356035	2477829	2.570	0.010***	-120107	129906	-0.920	0.355
Year	Yes				Yes				Yes				Yes			
Industry	Yes				Yes				Yes				Yes			
Adj. R ²	0.061				0.031				0.017				0.387			
Obs.	1074															
	<u>LVS</u>				<u>VOL</u>											
	Coef	Std. Err.	t	P>t	Coef	Std. Err.	t	P>t								
WORDS	0.000	0.002	-0.190	0.846	1057025	122332	8.640	0.000***								
Fsize	-4.49E-	6.75E-	-0.66	0.507	4851	478	10.16	0.000***								
COM	0.006	0.003	0.150	0.879	43095	27991	1.540	0.124								
GROWTH	-0.008	0.023	-0.360	0.722	-1509617	1608572	-0.940	0.348								
PPE	0.904	0.628	1.440	0.150	2.13E+08	4.44E+	4.800	0.000***								
VOLA	0.078	0.047	1.650	0.099**	3619407	3357956	1.080	0.281								
PRC	0.798	0.030	26.240	0.000***	261569	2150925	0.120	0.903								
LEV	0.056	0.061	0.930	0.354	-7132481	4283237	-1.670	0.096*								
CURNT	-0.321	0.157	-2.040	0.041**	-285877	1.11E+	-0.030	0.980								
ZSCORE	1.861	0.234	7.960	0.000***	1.67E+	1.65E+	1.010	0.313								
Intercept	-19.139	8.696	-2.200	0.028**	-2.75E	6.15E+	-4.470	0.000***								
Year	Yes				Yes											
Industry	Yes				Yes											
Adj. R ²	0.572				0.309											
Obs.	1074															

Table 7.4 reports the results of OLS estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.5 Sensitivity analysis

To assess the robustness of the main results and to address endogeneity and heteroscedasticity issues, several additional tests are undertaken. These tests include: (1) random-effects GLS regression; (2) robustness tests to control for firm conditions effect; (3) splitting the sample; (4) Feasible Generalized Least Squares (FGLS), and (5) Two-Stage-Least-Squares (2SLS).

7.5.1 Random-effects GLS regression

Although the main analysis includes the year and industry effects to capture the variation over time and across industries when employing the pooled ordinary least squares (OLS), OLS do not control for unobserved heterogeneity. Hence, this study employs random-effects (RE) estimation for each model as a robustness test. In addition, the use of this variance components model is to focus on the time-series variation and to provide more understanding of the link between auditor's disclosures and stock liquidity. Further, this variance components model may be suitable for this study because it uses a relatively short period of time data (Ali et al., 2017; Baltagi, 2008). Further, this variance components model may be suitable for panel data (Podestà, 2002).

Table 7.5 shows the relation between the disclosures of risks of material misstatement and information asymmetry in the market for the firm's stock using RE method. It shows that the regression model has an R-squared (between) of 4.6%, 7.8%, 4.3%, 59.13%, 96.3%, and 28.6% for bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*), respectively. The results, anticipated in H1, confirm the positive association between the disclosures of risks of material misstatement and stock liquidity. These results are consistent with the previous results presented in Table 7.4. Specifically, the coefficient of - 0.004 on the disclosures of risks of material misstatement (*WORDS*) (z -statistic= -1.830) shows that a one word increase in the disclosures of risks of

material misstatement reduced bid-ask spread (*SPR*) on average by £0.004 per year. This coefficient is statistically significant at the 10% level. In addition, the coefficient of the disclosures of risks of material misstatement (*WORDS*) is 0.002 with the *t*-statistic equal to 1.730 (significant at the 10% level) suggests that a one word increase in the disclosures of risks of material misstatement (*WORDS*) increased the stocks liquidity ratio (*LR*) by 0.002 trading volume per day.

However, the disclosures of risks of material misstatement do not influence the stock turnover (*STO*), but increased number of trades (*TR*) by 131 times with the *t*-statistic equal to 4.890 (significant at the 1% level). Furthermore, the disclosures of risks of material misstatement are found to insignificantly affect a number of levels (*LVS*), but increased the trading volume (*VOL*) by 172066 times with the *t*-statistic equal to 2.730 (significant at the 1% level). The above findings show that the results of this study are robust to the use of RE method and this method provides similar results as OLS.

Table 7.5 RMM and stock liquidity: RE regression

<i>Variables</i>	<i>SPR</i>				<i>LR</i>				<i>STO</i>				<i>TR</i>			
	Coef	Std. Err.	z	P>z	Coef	Std. Err.	z	P>z	Coef	Std. Err.	Z	P>z	Coef	Std. Err.	z	P>z
<i>WORDS</i>	-0.004	0.0002	-1.830	0.067*	0.002	0.001	1.730	0.084*	441	496	0.890	0.374	131	26.926	4.890	0.000***
<i>Fsize</i>	6.53E-	1.44E	0.450	0.651	1.07E-	5.30E-	2.010	0.044**	0.084	1.942	0.040	0.966	0.786	0.107	7.320	0.000***
<i>COM</i>	-1.11E-	0.004	-0.310	0.759	9.75E-	1.98E-	0.050	0.961	21.467	112	0.190	0.849	-22	5.882	-3.900	0.000***
<i>GROWTH</i>	0.001	0.002	0.070	0.946	-0.0004	0.001	-0.330	0.742	-1555	6473	-0.240	0.810	-422	336	-1.250	0.210
<i>LN_PPE</i>	-0.485	0.129	-3.760	0.000***	-0.054	0.048	-1.100	0.272	-527203	180577	-2.920	0.004***	101732	9970	10.200	0.000***
<i>VOLA</i>	-0.024	0.006	-5.080	0.000***	-0.003	0.003	-0.120	0.902	-424	13538	-0.030	0.975	279	711	0.390	0.694
<i>PRC</i>	0.011	0.005	2.270	0.023**	-0.001	0.002	-0.050	0.957	-2907	8720	-0.330	0.739	562	473	1.190	0.235
<i>LEV</i>	-0.008	0.007	-0.120	0.902	0.003	0.004	0.880	0.379	8698	17308	0.500	0.615	-1875	921	-2.040	0.042**
<i>CURNT</i>	-0.011	0.015	-0.680	0.495	-0.008	0.009	-1.000	0.319	-66427	44829	-1.480	0.138	-322	2349	-0.140	0.891
<i>ZSCORE</i>	0.018	0.028	0.640	0.522	-0.014	0.014	-0.990	0.320	12249	66918	0.180	0.855	4821	3576	1.350	0.178
Intercept	7.913	1.784	4.440	0.000***	1.263	0.665	1.900	0.058*	6345416	2499974	2.540	0.011**	-103499	137610	-0.750	0.452
Year	Yes				Yes				Yes				Yes			
Industry	Yes				Yes				Yes				Yes			
R ² (between)	0.046				0.078				0.0430				0.591			
Obs.	1074															
	<i>LVS</i>				<i>VOL</i>											
	Coef	Std. Err.	Z	P>z	Coef	Std. Err.	z	P>z								
<i>WORDS</i>	0.000	0.002	-0.190	0.846	172066	63110	2.730	0.006***								
<i>Fsize</i>	-4.49E-	6.75E-	-0.66	0.506	4310	684	6.300	0.000***								
<i>COM</i>	6.01E-	0.000	0.150	0.879	-27849	8619	-3.230	0.001***								
<i>GROWTH</i>	-0.008	0.023	-0.360	0.722	195428	485817	0.400	0.687								
<i>LN_PPE</i>	0.904	0.628	1.440	0.150	1.56E+	5.57E+	2.810	0.005***								
<i>VOLA</i>	0.078	0.047	1.650	0.098	2460896	1097828	2.240	0.025**								
<i>PRC</i>	0.798	0.030	26.240	0.000	662598	1400884	0.470	0.636								
<i>LEV</i>	0.056	0.061	0.930	0.354	1838469	1625910	1.130	0.258								
<i>CURNT</i>	-0.321	0.157	-2.040	0.041	-703362	3607671	-0.190	0.845								
<i>ZSCORE</i>	1.861	0.234	7.960	0.000	-536802	7145749	-0.080	0.940								
Intercept	-19.139	8.696	-2.200	0.028	-6.76E+	8.58E+	-0.790	0.430								
Year	Yes				Yes											
Industry	Yes				Yes											
R ² (between)	0.963				0.286											
Obs.	1074															

Table 7.5 reports the results of RE estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.5.2 Robustness tests to control for firm conditions effect

A potentially important problem with the results of Study Three is that the results are sensitive to economic conditions of the firm. That is, the effect of auditor's disclosures on stock liquidity is driven by the firm characteristics. This potential problem holds stronger impact if the firm has poor economic conditions and such firms are risky to the auditors (Kinney & McDaniel, 1989; Pratt & Stice, 1994; Stice, 1991).

To assess the possibility, this study dropped a number of control variables including net income (*COM*), sales growth (*GROWTH*), firms leverage (*LEV*), and Altman Z-Score (*ZSCORE*). This is done to ensure that the results are not influenced by these control variables (i.e., the results are not influenced by client characteristics). As it can be seen in Table 7.6, the results are consistent with the previous results; that is, the auditor's disclosures of RMM reduce bid-ask spread (*SPR*), increase stocks liquidity ratio (*LR*), increase number of trades (*TR*), and increase the trading volume (*VOL*).

Table 7.6 Relation between RMM and stock liquidity: Exclude variables

Variables	<i>SPR</i>				<i>LR</i>				<i>TR</i>				<i>VOL</i>			
	Coef	Std. Err.	Z	P>z	Coef	Std. Err.	z	P>z	Coef	Std. Err.	z	P>z	Coef	Std. Err.	z	P>z
<i>WORDS</i>	-0.004	0.002	-1.840	0.066*	0.002	0.001	1.780	0.076*	132	27.039	4.890	0.000** *	187238	63065	2.970	0.003***
<i>Fsize</i>	6.82E	1.43E-	0.48	0.634	1.05E-	5.26E-	1.99	0.047	0.732	0.106	6.900	0.000	4265	684	6.240	0.000
<i>COM</i>																
<i>GROWTH</i>																
<i>LN_PPE</i>	-0.505	0.1269	-3.970	0.000	-0.039	0.045	-0.820	0.4140	92224	9622.	9.580	0.000	1.54E+	5.52E+	2.790	0.005
<i>VOLA</i>	-0.023	0.0045	-5.090	0.000	-0.0005	0.003	-0.190	0.8490	317	713	0.450	0.656	252331 1	1096692	2.300	0.021
<i>PRC</i>	0.011	0.0045	2.390	0.0170	-0.006	0.002	-0.330	0.7390	810	423	1.920	0.055	834574	1401273	0.600	0.551
<i>LEV</i>																
<i>CURNT</i>	-0.009	0.0146	-0.600	0.550	-0.01	0.008	-1.200	0.2300	546	2287	0.240	0.811	-732365	3595246	-0.200	0.839
<i>ZSCORE</i>																
Intercept	8.117	1.750	4.640	0.000	1.089	0.648	1.670	0.094	-23527	133343	-0.180	0.860	-7.17E+	8.53E+	-0.840	0.400
Year	Yes				Yes				Yes				Yes			
Industry	Yes				Yes				Yes				Yes			
<i>R</i> ² (between)	0.045				0.070				0.599				0.293			
Obs.	1074															

Table 7.6 reports robustness results of RE estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity after excluding a number of control variables including *COM*, *GROWTH*, *LEV*, and *ZSCORE*. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). Note that stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable. The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.5.3 Splitting the sample

As a further check on the robustness of the previous results, this study re-runs model 4.9 after excluding all financial firms (GICS 40 = 274). This is because non-financial firms face less pressure from capital providers (Alshammari, 2014), and this may result in changing the levels of the disclosures. In addition, financial firms are excluded due to their own unique characteristics (Simpson & Kohers, 2002). Table 7.7 presents results after excluding all financial firms. It shows that this approach does not make any significant change to the main results obtained from previous regression; that is, RMM disclosures by the auditor reduce information asymmetry in the market, which in turn results in greater stock liquidity of firms.

Table 7.7 Relation between RMM and stock liquidity: Restrict sample to non-financial firms

Variables	<i>SPR</i>				<i>LR</i>				<i>TR</i>				<i>VOL</i>			
	Coef	Std. Err.	Z	P>z	Coef	Std. Err.	z	P>z	Coef	Std. Err.	Z	P>z	Coef	Std. Err.	z	P>z
<i>WORDS</i>	-0.006	0.004	-1.950	0.051*	0.004	0.000	2.500	0.013**	37.980	29.994	1.270	0.206	349271	83273	4.190	0.000***
<i>Fsize</i>	8.90E-	4.90E-	1.820	0.07*	5.42E-	2.10E-	0.260	0.797	3.928	0.479	8.190	0.000***	7752	1331	5.820	0.000***
<i>COM</i>	4.84E-	0.000	0.010	0.994	-5.65E	0.000	-0.210	0.831	-28.272	6.026	-4.690	0.000***	79418	16730	4.750	0.000***
<i>GROWTH</i>	0.007	0.0079	0.790	0.430	-0.002	0.003	-0.810	0.416	-1302	775	-1.680	0.093	-2179175	2153382	-1.010	0.312
<i>LN_PPE</i>	-0.716	0.147	-4.840	0.000***	-0.045	0.063	-0.720	0.470	144522	14451	10.000	0.000***	2.13E+	4.01E+	5.310	0.000***
<i>VOLA</i>	0.020	0.007	0.270	0.785	-0.0001	0.004	-0.040	0.969	1371	699	1.960	0.050	4604419	1943263	2.370	0.018**
<i>PRC</i>	-0.008	0.005	-0.160	0.874	-0.0006	0.003	-0.280	0.776	-197	496	-0.400	0.691	581796	1377275	0.420	0.673
<i>LEV</i>	-0.008	0.011	-0.740	0.460	0.0018	0.005	0.400	0.690	-1782	1048	-1.700	0.089*	816444	2909912	0.280	0.779
<i>CURNT</i>	-0.082	0.1074	-0.760	0.448	-0.0259	0.050	-0.560	0.574	-6628	10502	-0.630	0.528	4680668	2.92E+	0.160	0.873
<i>ZSCORE</i>	0.052	0.0490	1.050	0.292	-0.0079	0.030	-0.370	0.708	17468	4795	3.640	0.000***	5767714	1.33E+	0.430	0.665
Intercept	8.559	1.228	6.970	0.000***	1.4610	0.526	2.780	0.006***	-764268	120046	-6.370	0.000***	-1.66E+	3.33E+	-4.970	0.000***
Year	Yes				Yes				Yes				Yes			
Industry	Yes				Yes				Yes				Yes			
<i>R</i> ² (Between)	0.076				0.013				0.377				0.293			
Obs.	800															

Table 7.7 reports robustness results of RE estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity after excluding 247 financial firms. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). Note that stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable. The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

In addition, there is a potential problem with the auditor's disclosures variable. This potential problem occurs because (1) auditors are more likely to waive their judgment with large clients (Wright & Wright, 1997); and (2) auditors are less likely to issue a qualified audit opinion to larger clients (Krishnan & Krishnan, 1996) as these clients are economically important to the auditors. This suggests that auditor strategy in relation to his/her disclosures varies if the firm is large. Hence, the auditor's disclosures variable suffers from self-selection bias.

To rule out this possibility and to further control for firm characteristics, this study uses a split sample strategy and performs regression only on large firms⁴⁷ in the sample (n=532) to check whether auditors change their strategies in relation to the disclosures with large clients. Results on this subsample are reported in Table 7.8. This table shows that after restricting the sample to only large firms, the results hold and are similar to those reported in the study that the disclosures of risks of material misstatement in the extended auditor's report reduce the information asymmetry in the market for the firm's stock. The use of this approach indicates that no self-selection bias with the auditor's disclosures exists.

For non-large firms (Table 7.9), auditor's disclosures of RMM in the extended auditor's report do not seem to be associated with improved stock liquidity. This is more likely to be because of the smaller sample size. Generally, this is understandable because to see the improvement of stock liquidity, it may need a long-time period and sufficiently a large sample size.

⁴⁷ See Table 7.8 for the classification of "large firms".

Table 7.8 RMM and stock liquidity: Subgroup analysis based on firm size

<i>Variables</i>	<i>SPR</i>				<i>LR</i>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>
<i>WORDS</i>	-0.001	0.000	-4.770	0.000***	0.000	0.000	2.650	0.008***
<i>Ln_Fsize</i>								
<i>COM</i>	-6.84E-06	2.28E-05	-0.300	0.765	2.11E-05	2.66E-05	0.790	0.428
<i>GROWTH</i>	0.001	0.001	0.950	0.340	-0.001	0.002	-0.360	0.719
<i>LN_PPE</i>	-0.202	0.068	-2.970	0.003***	0.020	0.079	0.250	0.802
<i>VOLA</i>	0.012	0.003	4.180	0.000***	-0.001	0.003	-0.230	0.819
<i>PRC</i>	0.014	0.022	0.630	0.530	-0.005	0.025	-0.210	0.831
<i>LEV</i>	-0.003	0.005	-0.640	0.519	0.015	0.006	2.580	0.010***
<i>CURNT</i>	-0.085	0.040	-2.150	0.032**	-0.018	0.046	-0.390	0.700
<i>ZSCORE</i>	0.157	0.038	4.140	0.000***	-0.035	0.044	-0.800	0.426
Intercept	3.667	0.829	4.420	0.000***	0.388	0.967	0.400	0.688
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. <i>R</i> ²	0.193				0.040			
Obs.	532				532			
	<i>TR</i>				<i>VOL</i>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>
<i>WORDS</i>	198.446	37.889	5.240	0.000***	1837758.000	202876.500	9.060	0.000***
<i>Ln_Fsize</i>								
<i>COM</i>	-17.269	7.423	-2.330	0.020**	49000.040	39745.210	1.230	0.218
<i>GROWTH</i>	-993.425	486.445	-2.040	0.042	-3458623.000	2604651.000	-1.330	0.185
<i>LN_PPE</i>	252770.600	22153.170	11.410	0.000***	9.50E+08	1.19E+08	8.010	0.000***
<i>VOLA</i>	34.509	967.056	0.040	0.972	3372343.000	5178068.000	0.650	0.515
<i>PRC</i>	9147.375	7048.112	1.300	0.195	-3.84E+07	3.77E+07	-1.020	0.309
<i>LEV</i>	-4914.472	1645.097	-2.990	0.003***	-1.47E+07	8.81E+06	-1.670	0.095*
<i>CURNT</i>	-4609.381	12935.890	-0.360	0.722	-2.85E+07	6.93E+07	-0.410	0.681
<i>ZSCORE</i>	17001.050	12368.920	1.370	0.170	6.00E+07	6.62E+07	0.910	0.365
Intercept	-1876220.000	269773.800	-6.950	0.000***	-1.12E+10	1.44E+09	-7.770	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. <i>R</i> ²	0.420				0.285			
Obs.	532				532			

Table 7.8 reports the results of pooled OLS estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity after restricting the sample to only large firms. Firms are classified as “large firms” if firm size is greater than the median firm size of the sample. Note that (1) stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable, and (2) the control variable that is firm size (*Ln_Fsize*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7.9 RMM and stock liquidity: Subgroup analysis based on firm size

<i>Variables</i>	<i>SPR</i>				<i>LR</i>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>
<i>WORDS</i>	-0.001	0.001	-1.000	0.318	0.000	0.000	0.470	0.636
<i>Ln_Fsize</i>								
<i>COM</i>	0.000	0.002	0.080	0.932	0.000	0.000	0.270	0.786
<i>GROWTH</i>	-0.002	0.009	-0.180	0.859	-0.002	0.002	-0.680	0.496
<i>LN_PPE</i>	-0.928	0.317	-2.930	0.004	-0.177	0.081	-2.190	0.029
<i>VOLA</i>	-0.006	0.025	-0.250	0.802	-0.006	0.006	-0.900	0.366
<i>PRC</i>	0.000	0.006	0.060	0.954	0.000	0.002	0.140	0.892
<i>LEV</i>	-0.006	0.018	-0.350	0.729	-0.004	0.005	-0.930	0.353
<i>CURNT</i>	-0.019	0.032	-0.570	0.568	-0.007	0.008	-0.790	0.430
<i>ZSCORE</i>	0.015	0.053	0.290	0.775	-0.019	0.013	-1.440	0.150
Intercept	10.372	3.752	2.760	0.006	2.665	0.957	2.790	0.006

Year	Yes	0.001	-1.000	0.318	Yes			
Industry	Yes				Yes			
Adj. R^2	0.017				0.017			
Obs.	452				452			
	<u>TR</u>				<u>VOL</u>			
	Coef.	Std. Err.	T	P>t	Coef.	Std. Err.	t	P>t
<i>WORDS</i>	19.188	15.301	1.250	0.210	45090.060	48581.870	0.930	0.354
<i>Ln_Fsize</i>								
<i>COM</i>	150.667	44.735	3.370	0.001	68147.050	142034.300	0.480	0.632
<i>GROWTH</i>	-232.011	226.632	-1.020	0.306	320935.100	719566.000	0.450	0.656
<i>LN_PPE</i>	37333.960	7793.518	4.790	0.000	4.40E+07	2.47E+07	1.78	0.076
<i>VOLA</i>	1101.731	607.824	1.810	0.070	1.28E+07	1929868.000	6.660	0.000
<i>PRC</i>	52.058	151.707	0.340	0.732	-176277.200	481677.000	-0.370	0.715
<i>LEV</i>	1246.343	453.192	2.750	0.006	2169824.000	1438905.000	1.510	0.132
<i>CURNT</i>	-653.008	797.348	-0.820	0.413	-1545419.000	2531617.000	-0.610	0.542
<i>ZSCORE</i>	3770.451	1294.056	2.910	0.004	1996418.000	4108688.000	0.490	0.627
Intercept	189389.400	92260.910	2.050	0.041	-6.28E+08	2.93E+08	-2.150	0.032
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. R^2	0.532				0.117			
Obs.	452				452			

Table 7.9 reports the results of pooled OLS estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity after restricting the sample to only non-large firms. Firms are classified as “non-large firms” if firm size is greater than the median firm size of the sample and firms classified as “non-large firms” otherwise. Note that (1) stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable, and (2) the control variable that is firm size (*Ln_Fsize*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Furthermore, there is a chance that the main results of Study Three may not hold if the sample is restricted to only high-leveraged firms. High-leveraged firms require a different conception. For example, Paragraph 01 of Statement on Auditing Standards No. 132 (SAS 132 AU-C §570.01) requires the auditor to assess the risks of going concern problems that is “the financial statements are prepared on the assumption that the entity is a going concern and will continue its operations for a reasonable period of time” (AICPA, 2017). The basis of going concern includes the expectation that a firm is able to pay its debts as and when they fall due (Gay & Simnett, 2015). A highly-levered firm has a high percentage of debt. Hence, the higher likelihood of issuing going concern audit opinion, all else being equal. It is found that cost of equity is high in firms that have going concern audit report (Ogneva & Subramanyam, 2007; Taffler et al., 2004). Based on this, it is expected that highly-levered firms are associated with greater information asymmetry across market participants. This view corresponds with Modigliani and Miller (1958) and Dhaliwal, Heitzman, and Zhen (2006) who find the cost of

capital is increasing in leveraged firms. Therefore – as a further check on the robustness of the previous results – Study Three re-runs model 4.9 using only highly-levered firms (n=537).

Table 7.10 presents results after restricting the sample to only highly-levered firms. It shows that this approach does not make any significant change to the results obtained from the full sample. This also indicates that highly-levered firms in this study's sample do not increase information asymmetry component in the market. This is perhaps because (1) managers' behaviors of highly-levered firms are greatly monitored (Jensen & Meckling, 1976) and (2) managers of such firms choose accounting choices that provide more informative accounting techniques, hence reduce firm's cost of equity (Bartov & Bodnar, 1996; Leftwich, 1981; Zmijewski & Hagerman, 1981).

Table 7.10 RMM and stock liquidity: Subgroup analysis based on leverage level

<i>Variables</i>	<i>SPR</i>				<i>LR</i>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>
<i>WORDS</i>	-0.0005	0.0002	-2.540	0.011**	0.0002	0.0001	2.0500	0.041**
<i>Ln_Fsize</i>	-1.627	0.473	-3.440	0.001***	-0.1246	0.2811	-0.4400	0.658
<i>COM</i>	0.052	0.673	0.780	0.435	0.0790	0.0399	1.9800	0.048
<i>GROWTH</i>	0.001	0.002	0.440	0.661	0.0001	0.0014	0.1000	0.919
<i>LN_PPE</i>	1.134	0.452	2.520	0.012**	0.1299	0.2673	0.4900	0.627
<i>VOLA</i>	-0.0002	0.006	-0.040	0.969	-0.0011	0.0037	-0.2900	0.772
<i>PRC</i>	-0.010	0.004	-2.400	0.017**	0.0000	0.0025	0.0000	1.000
<i>LEV</i>								
<i>CURNT</i>	-0.017	0.016	-1.100	0.271	-0.0065	0.0095	-0.6800	0.496
<i>ZSCORE</i>	0.075	0.044	1.630	0.103	-0.0144	0.0263	-0.5500	0.585
Intercept	6.403	1.485	4.310	0.000***	0.7367	0.8807	0.8400	0.4030
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. R ²	0.140				0.348			
Obs.	537							
	<i>TR</i>				<i>VOL</i>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>t</i>	<i>P>t</i>
<i>WORDS</i>	237.7539	35.0624	6.7800	0.000***	2193153.000	211308.300	10.380	0.000***
<i>Ln_Fsize</i>	349500.3000	82544.2900	4.2300	0.000***	8.2E+08	4.97E+08	1.660	0.099*
<i>COM</i>	26500.8600	11711.2500	2.2600	0.024**	9.00E+07	7.06E+07	1.280	0.203
<i>GROWTH</i>	-405.8631	414.1497	-0.9800	0.328	-3222194	2495932	-1.290	0.197
<i>LN_PPE</i>	-222409.6000	78488.4200	-2.8300	0.005***	-3.1E+08	4.73E+08	-0.660	0.510
<i>VOLA</i>	1062.9110	1077.3090	0.9900	0.324	2962029.000	6492554.000	0.460	0.648
<i>PRC</i>	1581.5300	728.4785	2.1700	0.030**	90137.910	4390278.000	0.020	0.984
<i>LEV</i>								
<i>CURNT</i>	3156.6510	2791.7000	1.1300	0.259	3252352.000	1.7E+07	0.190	0.847
<i>ZSCORE</i>	-2131.3010	7728.3200	-0.2800	0.783	6.8E+07	4.7E+07	1.450	0.148
Intercept	-595455.0000	258604.2000	-2.3000	0.022**	-5.9E+09	1.6E+09	-3.800	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. R ²	0.348				0.270			
Obs.	537				537			

Table 7.10 reports the results of pooled OLS estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity after restricting the sample to only high-leveraged firms. Firms are classified as “high-leveraged firms” if firm leverage is greater than the median firm leverage of the sample. Note that (1) stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable, and (2) the control variable that is leverage (*LEV*) is omitted from this estimation as this variable is used to partition the sample. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.5.4 Feasible Generalized Least Squares (FGLS)

Although low R-square values are often expected in social sciences (Neter et al., 1996), there is a potential problem with the model of this study due to having relatively low R-square. Therefore, it is important to test if there are potential outliers, non-normality of residuals, an unequal variance of the error terms, and so on. This is done by analyzing the residuals. Following Tabak, Noronha, and Cajueiro (2011), this study uses an alternative estimation approach that is Feasible Generalized Least Squares (FGLS) estimator to ensure that no heteroscedasticity problems occur.

Table 7.11 reports the results using FGLS method. The results show that the disclosures of risks of material misstatement (*WORDS*) are statistically significant with bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). These results are similar to those obtained on the previous main regression of this study. In addition, results of FGLS method show that residuals are normally distributed, the variance of the error terms is equal, and outliers do not noticeably affect the estimated relation between the disclosures of risks of material misstatement and stock liquidity of firms. This study concludes that the relation between auditor's disclosures of RMM in the extended auditor's report and the information asymmetry in the market for the firm's stock is robust to using an FGLS regression.

Table 7.11 RMM and stock liquidity: Analysis based on (FGLS)

<i>Variables</i>	<u><i>SPR</i></u>				<u><i>LR</i></u>			
	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>	<i>Coef.</i>	<i>Std. Err.</i>	<i>T</i>	<i>P>t</i>
<i>WORDS</i>	-0.001	0.000	-5.340	0.000***	0.000	0.000	3.860	0.000***
<i>Ln_Fsize</i>	-1.114	0.283	-3.940	0.000***	-0.188	0.188	-1.000	0.317
<i>COM</i>	0.000	3.17E-05	0.520	0.603	0.000	0.000	5.730	0.000***
<i>GROWTH</i>	0.005	0.003	1.920	0.056*	-0.003	0.002	-1.490	0.136
<i>LN_PPE</i>	0.771	0.268	2.880	0.004***	0.162	0.178	0.910	0.362
<i>VOLA</i>	0.005	0.006	0.820	0.410	-0.006	0.004	-1.300	0.195
<i>PRC</i>	-0.004	0.003	-1.360	0.175	0.002	0.002	0.760	0.447
<i>LEV</i>	0.001	0.006	0.100	0.918	0.021	0.004	5.350	0.000***
<i>CURNT</i>	-0.036	0.022	-1.610	0.108	-0.013	0.015	-0.900	0.368
<i>ZSCORE</i>	0.128	0.037	3.480	0.001***	-0.041	0.024	-1.690	0.092*
Intercept	5.789	0.767	7.550	0.000***	0.783	0.508	1.540	0.124
Year	Yes				Yes			

Industry	Yes				Yes			
Adj. R^2	0.162				0.117			
Obs.	1074				1074			
	<u>TR</u>				<u>VOL</u>			
	Coef.	Std. Err.	T	P>t	Coef.	Std. Err.	T	P>t
<i>WORDS</i>	252.199	31.218	8.080	0.000***	3539056.000	201503.900	17.560	0.000***
<i>Ln_Fsize</i>	568328.700	80970.580	7.020	0.000***	8.53E+08	5.23E+08	1.630	0.103
<i>COM</i>	-41.733	9.066	-4.600	0.000***	-72279.760	58517.300	-1.240	0.217
<i>GROWTH</i>	-3875.924	756.411	-5.120	0.000***	-6545379.000	4882401.000	-1.340	0.180
<i>LN_PPE</i>	-262304.000	76651.130	-3.420	0.001***	-8.39E+07	4.95E+08	-0.170	0.865
<i>VOLA</i>	3821.564	1850.390	2.070	0.039	1.76E+07	1.19E+07	1.470	0.142
<i>PRC</i>	2963.668	911.588	3.250	0.001***	-1479974	5884019	-0.250	0.801
<i>LEV</i>	-7081.367	1705.127	-4.150	0.000***	-2.64E+07	1.10E+07	-2.400	0.017**
<i>CURNT</i>	8.613	6361.890	0.000	0.999	-1.10E+07	4.11E+07	-0.270	0.788
<i>ZSCORE</i>	-11392.320	10540.340	-1.080	0.280	9.90E+07	6.80E+07	1.450	0.146
Intercept	-2529802.000	219505.200	-11.530	0.000***	-1.21E+10	1.42E+09	-8.560	0.000***
Year	Yes				Yes			
Industry	Yes				Yes			
Adj. R^2	0.560				0.071			
Obs.	1074				1074			

Table 7.11 reports the results of FGLS estimation of Equation 4.9 on the interaction effect of RMM proxied by number of words in RMM disclosures on stock liquidity. Note that stock turnover (*STO*) and number of levels (*LVS*) are omitted from this estimation as these variables uncorrelated with the independent variable. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.5.5 Two-Stage-Least-Squares (2SLS)

Study Three hypothesizes that the disclosures of RMM in the extended auditor's report reduce the information asymmetry in the market for the firm's stock. However, Hail (2002) argues that there is a potential risk with the disclosure variable for many reasons. First, firms might not choose disclosure level "independently" which increases the likelihood of a self-selection bias. In other words, shareholders including managers may put pressure on auditors to increase the level of disclosures in their reports. At such, market participants (e.g., investors) influence the levels of auditor's disclosures of RMM, hence endogeneity bias due to reverse causality. Second, prior research uses different proxies to measure the stock liquidity of firms. This suggests that stock liquidity variable could be sensitive to specific estimation procedures, hence increase the likelihood of reverse causality. As a result, potential endogeneity of the disclosure variable has to be taken into account. The number of words in RMM disclosures (*WORDS*)

would be endogenous to stock liquidity and OLS estimation of Equation 4.9 is likely to produce inconsistent estimators. Accordingly, a system of two equations in which both stock liquidity and disclosure level appear as endogenous is estimated utilizing 2SLS.

In applying 2SLS, this research adopts the disclosure model developed by Hail (2002) where the X variables in this model influence firm's reporting decision among with its control variables. The estimated model is as follows:

$$WORDS_{it} = \alpha_0 + \alpha_1 Ln_Fsize_{it} + \alpha_2 COM_{it} + \alpha_3 ZSCORE_{it} + \alpha_4 VOLA_{it} + \alpha_5 LEV_{it} + \alpha_6 GROWTH_{it} + \alpha_7 LN_PPE_{it} + \alpha_8 VOLA_{it} + \alpha_9 PRC_{it} + \alpha_{10} LEV_{it} + \alpha_{11} CURNT_{it} + \varepsilon_{it}$$

(7.1)

where *WORDS* is the total number of words in RMM disclosures. Firm size (*Ln_Fsize*), firms profit (*COM*), Z-Score (*ZSCORE*), sales growth (*GROWTH*), asset tangible (*PPE*), return volatility (*VOLA*), stock price (*PRC*), leverage (*LEV*), and current ratio (*CURNT*) are instrumental and control variables. These variables are previously described in Table 4.3.

Table 7.12 present results from estimation Equation 7.1; that is, the results of the first stage regression. In the first stage, this study regresses *Ln_Fsize*, *COM*, *ZSCORE*, and *VOLA* on *WORDS* if they meet the condition that instruments are correlated with X; that is, auditor's disclosures (*WORDS*), but uncorrelated with Y; that is, stock liquidity. Therefore, *Ln_Fsize*, *COM*, and *ZSCORE* are correlated with X; that is, auditor's disclosures (*WORDS*), but uncorrelated with Y; that is, bid-ask spread (*SPR*). *COM*, *ZSCORE*, and *VOLA* are correlated with X; that is, auditor's disclosures (*WORDS*), but uncorrelated with Y; that is, liquidity ratio (*LR*). *ZSCORE* and *VOLA* are correlated with X; that is, auditor's disclosures (*WORDS*), but uncorrelated with Y; that is, number of trades (*TR*). *COM*, *VOLA*, and *ZSCORE* are correlated

with X; that is, auditor's disclosures of RMM (*WORDS*), but uncorrelated with Y; that is, trading volume (*VOL*).

Table 7.12 First-stage regressions

Panel A: <i>SPR</i>					Panel B: <i>LR</i>				
<i>WORDS</i>	Coef.	Std. Err.	t	P>t	<i>WORDS</i>	Coef.	Std. Err.	t	P>t
<i>Ln_Fsize</i>	202.005	116.641	1.730	0.084*	<i>COM</i>	-0.016	0.005	-3.070	0.002***
<i>COM</i>	-0.016	0.005	-3.070	0.002***	<i>ZSCORE</i>	-8.829	4.393	-2.010	0.045**
<i>ZSCORE</i>	-8.829	4.393	-2.010	0.045**	<i>VOLA</i>	1.649	0.685	2.410	0.016**
<i>GROWTH</i>	0.347	0.292	1.190	0.235	<i>Ln_Fsize</i>	202.005	116.641	1.730	0.084*
<i>LN_PPE</i>	-4.022	118.211	-0.030	0.973	<i>GROWTH</i>	0.347	0.292	1.190	0.235
<i>VOLA</i>	1.649	0.685	2.410	0.016**	<i>LN_PPE</i>	-4.022	118.211	-0.030	0.973
<i>PRC</i>	-0.472	0.937	-0.500	0.615	<i>PRC</i>	-0.472	0.937	-0.500	0.615
<i>LEV</i>	-0.737	0.994	-0.740	0.459	<i>LEV</i>	-0.737	0.994	-0.740	0.459
<i>CURNT</i>	1.519	2.419	0.630	0.530	<i>CURNT</i>	1.519	2.419	0.630	0.530
Panel C: <i>TR</i>					Panel D: <i>VOL</i>				
<i>WORDS</i>	Coef.	Std. Err.	t	P>t	<i>WORDS</i>	Coef.	Std. Err.	t	P>t
<i>ZSCORE</i>	-8.829	4.393	-2.010	0.045**	<i>COM</i>	-0.016	0.005	-3.070	0.002***
<i>VOLA</i>	1.649	0.685	2.410	0.016**	<i>VOLA</i>	1.649	0.685	2.410	0.016**
<i>Ln_Fsize</i>	202.005	116.641	1.730	0.084*	<i>ZSCORE</i>	-8.829	4.393	-2.010	0.045**
<i>COM</i>	-0.016	0.005	-3.070	0.002***	<i>Ln_Fsize</i>	202.005	116.641	1.730	0.084*
<i>GROWTH</i>	0.347	0.292	1.190	0.235	<i>GROWTH</i>	0.347	0.292	1.190	0.235
<i>LN_PPE</i>	-4.022	118.211	-0.030	0.973	<i>LN_PPE</i>	-4.022	118.211	-0.030	0.973
<i>PRC</i>	-0.472	0.937	-0.500	0.615	<i>PRC</i>	-0.472	0.937	-0.500	0.615
<i>LEV</i>	-0.737	0.994	-0.740	0.459	<i>LEV</i>	-0.737	0.994	-0.740	0.459
<i>CURNT</i>	1.519	2.419	0.630	0.530	<i>CURNT</i>	1.519	2.419	0.630	0.530

This Table presents the results (using SLS method) between auditor's disclosures that is total number of words in RMM disclosures in the extended auditor's report (*WORDS*) and firm's reporting decision variables. These firm's reporting decision variables adopted from disclosure model. To be included in the first equation, instruments variables must meet the exogenous requirement (instruments that are correlated with X, but uncorrelated with Y). Instruments variables of *WORDS* in Panel A are *Ln_Fsize*, *COM*, and *ZSCORE*, in Panel B are *COM*, *ZSCORE*, and *VOLA*, in Panel C are *ZSCORE* and *VOLA*, and in Panel D are *COM*, *VOLA*, and *ZSCORE*.

In the second stage, this study estimates Equation 4.9 using the fitted value of *WORDS* from the first stage regression on stock liquidity. Table 7.12 presents the results of the second stage of 2SLS with fitted value of *WORDS*. The results show that the number of words in RMM disclosures (*WORDS*) is endogenous to bid-ask spread (*SPR*) (p-value of the endogeneity test equals 0.015). The results show that the coefficient of - 0.005 on the disclosures of risks of material misstatement (*WORDS*) (z-statistic = - 2.330) suggests that a one word increase in the disclosures of risks of material misstatement reduced bid-ask spread (*SPR*) on average by £0.005 a year. This coefficient is statistically significant at the 5% level. This coefficient

behaves as predicted and is consistent with the results of OLS. In addition, the results show that the number of words in RMM disclosures (*WORDS*) is not endogenous to liquidity ratio (*LR*). This is because p-value of the endogeneity test equals 0.666. The instruments are valid and not weak with p-value equals 0.660 and 0.000, respectively. Therefore, the null hypothesis that the number of words in RMM disclosures (*WORDS*) is an exogenous variable to (*LR*) is not rejected.

However, the number of words in RMM disclosures (*WORDS*) is endogenous to number of trades (*TR*) (p-value of endogeneity test equals 0.007, and instruments are valid and not weak with p-value equals 0.344 and 0.006, respectively). The results show that the coefficient of 1166.144 on the disclosures of risks of material misstatement (*WORDS*) (z -statistic = 2.110) shows that an increase of the disclosures of risks of material misstatement, number of trades (*TR*) increase by 1166 times with z -statistic equal to 2.110 (significant at the 5% level). Again, this finding is consistent with the previous results reported in Table 7.4.

With regards to trading volume (*VOL*), the endogeneity test shows that the number of words in RMM disclosures (*WORDS*) is endogenous to trading volume (*VOL*) (p-value equals 0.000, valid and not weak instruments with p-value equals 0.494 and 0.000, respectively). Hence, the null hypothesis that the number of words in RMM disclosures (*WORDS*) is an exogenous variable to *VOL* is rejected. Furthermore, the disclosures of risks of material misstatement are found to significantly positively affect the trading volume (*VOL*) by 1940110 times with the z -statistic equal to 3.630 (significant at the 1% level). This finding is similar to the previous results reported in Table 7.4. This study concludes that the results are robust to the use of 2SLS approach.

Table 7.13 Second-stage least squares: Reverse causality

	<u>SPR</u>					<u>LR</u>			
	Coef.	Std. Err.	z	P>z		Coef.	Std. Err.	z	P>z
<i>WORDS</i>	-0.005	0.002	-2.330	0.020**					
<i>GROWTH</i>	0.001	0.002	0.460	0.648	<i>Ln_Fsize</i>				
<i>LN_PPE</i>	-0.304	0.571	-0.530	0.595	<i>GROWTH</i>				
<i>VOLA</i>	-0.024	0.007	-3.530	0.000***	<i>LN_PPE</i>				
<i>PRC</i>	0.019	0.007	2.560	0.010***					
<i>LEV</i>	-0.005	0.008	-0.620	0.532					
<i>CURNT</i>	-0.013	0.018	-0.740	0.461					
Underidentification test (P-val)	0.001					0.000			
Sargan statistic (P-val)	0.004					0.998			
Endogeneity test (P-val)	0.015					0.660			
	<u>TR</u>					<u>VOL</u>			
	Coef.	Std. Err.	z	P>z		Coef.	Std. Err.	z	P>z
<i>WORDS</i>	1166.144	553.955	2.110	0.035**		1940110.000	534206.000	3.630	0.000***
<i>Ln_Fsize</i>	-198532.600	254533.000	-0.780	0.435		-7.70E+08	3.08E+08	-2.500	0.012**
<i>COM</i>	-29.409	12.971	-2.270	0.023**					
<i>GROWTH</i>	169.931	564.032	0.300	0.763		190887.600	734001.000	0.260	0.795
<i>LN_PPE</i>	-162008.100	201952.600	-0.800	0.422		3.66E+08	2.74E+08	1.330	0.182
<i>PRC</i>	494.227	1650.815	0.300	0.765		458982.900	2246487.000	0.200	0.838
<i>LEV</i>	221.199	1790.554	0.120	0.902		3233045.000	2421460.000	1.340	0.182
<i>CURNT</i>	-615.133	4311.054	-0.140	0.887		-8056192.000	5818271.000	-1.380	0.166
Underidentification test (P-val)	0.0064					0.000			
Sargan statistic (P-val)	0.3441					0.494			
Endogeneity test (P-val)	0.007					0.000			

This table presents the results (using 2SLS method) between auditor's disclosures and stock liquidity. The dependent variable is stock liquidity proxied by bid-ask spread (*SPR*), liquidity ratio (*LR*), number of trades (*TR*), and trading volume (*VOL*). The independent variable is RMM measured by number of words in RMM disclosures (*WORDS*). The rest of variables are stock liquidity control variables. Note that (1) stock turnover (*STO*) and number of levels (*LVS*) are dropped from this test because these proxies are uncorrelated with the independent variable, and (2) liquidity ratio (*LR*) is dropped from this table because the number of words in RMM disclosures in (*WORDS*) is not endogenous variable to the liquidity ratio (*LR*). *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

7.6 Chapter summary and conclusion

This chapter has provided evidence on the consequences of auditor's disclosures in relation to the risks of material misstatement on information asymmetry component in the market. In doing so, this study hand-collected data from 1047 annual reports of U.K. listed firms, used daily market data including daily ask and bid price, daily number of shares traded, daily number of transactions and daily number of levels, and then applied pooled ordinary least squares model.

The analysis of this model provides evidence that increased accounting disclosures have a positive and statistically significant influence on market microstructure (i.e., stock liquidity), measured by trading cost, price impact of trade, and immediate of shares. Specifically, the disclosures of RMM significantly and negatively affect bid-ask spread, significantly and positively affect stocks liquidity ratio, and significantly and positively affect number of trades and trading volume. These outcomes suggest that via decreasing information asymmetry component in the market, auditor's disclosures of RMM in the extended auditor's report provide relevant and reliable information, leading to increase a firm's stocks liquidity. These outcomes also suggest that the users of financial statements do not misunderstand and misinterpret the unstandardized language in auditor's report as argued by Bailey et al. (1983), and Hatherly et al. (1998). The findings of this study are robust to alternative estimation methods including random-effects GLS regression and Feasible Generalized Least Squares, to alternative proxies for firm conditions effect, to splitting the sample, and to endogeneity bias. This finding will be useful for investors as it shows that auditor's disclosures of RMM provide useful information about the audit and company's financial performance, and hence in making important investment decisions. The finding will be also useful for policymakers as it shows that auditor's disclosures reduce information asymmetry, and hence, regulators may consider requiring

smaller and non-listed firms to participate in this new auditing standard. Collectively, the study's results provide evidence suggesting that providing more valued information in the auditor's report to public decreases the level of information asymmetry.

CHAPTER 8: SUMMARY AND CONCLUSION

8.1 Summary

This thesis comprises of three inter-related studies on the disclosures of risks of material misstatement by the auditors under the new auditor's reporting model in the U.K. The first investigates the determinants of auditor's disclosures in relation to the risks of material misstatement and audit materiality in the extended auditor's report. The second addresses the influences of the risks of material misstatement on the audit and auditee firms. The third examines the influences of auditor's disclosures of the risks of material misstatement in the extended auditor's report on market microstructure (i.e., stock liquidity).

Based on theoretical framework that includes agency theory, resource dependence theory, prospect theory, and utility theory and the review of the literature in the area of information asymmetry, and accounting disclosures research, this thesis has developed five main hypotheses. To test these hypotheses, data is collected from the FTSE 350 Share Index of the LSE using a number of sources including Bloomberg, Datastream, and Audit Analytics, while the remaining data related to auditor's judgment in relation to the risks of material misstatement and audit materiality are hand-collected by the researcher from firm annual reports over the period from 2014 to 2016. This is followed by analyzing the data by using multiple techniques. This chapter provides summary and conclusion for Studies One, Two, and Three. This is followed by contributions of this thesis, and limitations and suggestions for future research.

8.2 Summary and conclusion Study One: The examination of the relationships between the risks of material misstatement, materiality level, and firm characteristics

This study is conducted in the context of the U.K. following the issue of *International Standard on Auditing (UK and Ireland) 700* by the U.K. FRC. This new auditing standard mandates a significant change to the auditor's report, where auditors of the U.K. listed firms disclose the risks of material misstatement (RMM), materiality, and the scope of the audit (FRC, 2013a). It investigates the role of firm corporate governance, and auditee characteristics including performance on auditor's judgment associated with the disclosures of risks of material misstatement, and the amounts of materiality set by auditors in the new auditor's report. Recent research investigates the potential effect of RMM on the communicative value of the auditor's report between auditors and investors, and finds that disclosures of additional information in the auditor's report increases communicative value between auditors and investors (Backof et al., 2014; Bédard et al., 2016; Bédard et al., 2014; Cade & Hodge, 2014; Elliott et al., 2016; Sirois et al., 2017). However, no empirical study has been conducted to examine whether the disclosures of risks of material misstatement, and the amounts of materiality set by auditors are driven by some factors.

Study One focuses on key factors related to (1) corporate governance including board size (*Bsize*), the proportion of non-executive directors (*NEX*), CEO duality (*Duality*), CEO tenure, woman as the board chair (*NWCH*), females on the board (*NFB*), activity of audit committee (*Active*), independence of audit committee (*IAC*), the size of nomination committee (*NCsize*), independent directors on nomination committee (*IDNC*), institutional shareholders (*OUT_SR*), and inside ownership (*IN_SR*); and (2) auditee characteristics and performance including firm size (*Ln_Fsize*), profitability (*PROF*), tangible assets (*PPE*), rate of sales growth (*Growth*), asset structure (*A_S*), firm leverage (*LEV*), and firm complexity (*COMLX*).

This is done because prior research documents a positive effect of corporate governance on auditor's judgment and audit process (Asare et al., 2001; Beaulieu, 2001; Johnstone & Bedard, 2001; Sharma et al., 2008). In addition, prior research show a relationship between auditee characteristics, and auditor's judgment including risk assessments, and litigation risks (Bedard & Johnstone, 2004; Ham et al., 1985; Pratt & Stice, 1994; Reynolds & Francis, 2000; Stice, 1991).

To achieve the objective of this study, that is how corporate governance and firm characteristics affect auditor's judgment in relation to the disclosures of risks of material misstatement, and audit materiality, three main testable hypotheses based on a literature review and the theoretical framework in the areas of agency theory, resource dependence theory, and accounting disclosures research are developed.

Agency theory suggests that an effective internal control reduces agency problem that arises from information asymmetry between management and shareholders, resulting in lower audit risk. As such, auditors are expected to extend tests of controls and disclosures to support such assessments. Resource dependence theory also suggests that firms that able to generate resources without completely depending on other organizations and firms that hire exports into their board of directors have less businesses survival risks, hence less audit risk. Consistent with these arguments, this study argues that better governed firms are clearly associated with a higher level of RMM disclosures and audit materiality. To do so, multivariate balanced panel regression models are used to analyse a sample of 966 firm-year observations from the London Stock Exchange with a premium listing of equity shares over the period from 2014 to 2016.

This study extends the literature in the area of auditor's judgment by producing evidence that corporate governance elements have a positive and statistically significant influence on auditor's judgment – the disclosures of risks of material misstatement, and the materiality level

– and a negative significant relation between auditee performance and the levels of RMM disclosures, and the materiality level. More specifically, the results of Study One show that board size (*Bsize*), activity of audit committee (*Active*), size of nomination committee (*NCsize*), and institutional shareholders (*OUT_SR*) have a positive and statistically significant association with the disclosures of risks of material misstatement, while firms with female chair (*NWCH*) have a negative association with the disclosures of risks of material misstatement. In addition, this study finds a positive and statistically significant effect of board size (*Bsize*), and institutional shareholders (*OUT_SR*) on the materiality level. The results confirm that corporate governance elements improve the effectiveness of the board in monitoring management, and support the role of information asymmetry as a channel of this relationship (e.g., Ali et al., 2018; Cohen et al., 2002; Cohen & Hanno, 2000; Cohen et al., 2007).

In terms of firm characteristics, this study finds that the rate of sales growth (*Growth*), and firm complexity (*COMLX*) have a positive and statistically significant link with the risks of material misstatement disclosures, while leveraged firms and firms with larger tangible assets have a negative relationship with such disclosures. With regard to the materiality level, this study documents a positive effect of firm size (*Ln_Fsize*) on the materiality level, while the rate of growth (*Growth*) is found to significantly and negatively affect materiality level. The results are consistent with prior research that auditee characteristics influence auditor's judgment (e.g., Goodwin-Stewart & Kent, 2006; Pratt & Stice, 1994). In terms of firm performance, return on assets and net income are found to significantly and negatively affect the risks of material misstatement, and significantly and positively affect the amounts of materiality. This confirms that firms with poor financial performance are more risky to auditors (e.g., Ashbaugh-Skaife et al., 2007; Doyle et al., 2007; Kinney & McDaniel, 1989; Pratt & Stice, 1994; Stice, 1991).

These empirical regression results are robust to alternative specification of variables, to split sample strategy, endogeneity bias tests, and alternative estimation techniques such as Two-Stage-Least-Squares (2SLS), Poisson regressions, and Two-limit Tobit model. These robustness tests should increase the degree of comfort that findings are not sensitive to specific estimation procedures and findings do not suffer from endogeneity.

8.3 Summary and conclusion Study Two: The examination of the relationships between audit fees, non-audit fees, and the extended auditor's report on U.K. listed companies

Although this new auditing standard (*International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements*) is expected to alleviate the information gap between managers and investors, one of the most controversial aspects of this standard is its potential effect on audit. This study investigates the potential effect of the reporting changes on audit and non-audit service fees. Recently Gutierrez et al. (2016) and Li et al. (2018) investigate the potential effect of this new auditing standard on audit cost. They argue that since auditors are required to extend their effort, they will charge more. Comparing audit fees before and after this new auditing standard, they find that the new audit requirements regarding the disclosures of risks of material misstatement and the scope of the audit increase audit fees.

However, Study Two adds that audit fees increased not only because of the new audit requirements, but also increased more in firms with higher levels of RMM. This is because as mentioned by the U.S. Auditing Standard No. 2110 (AS 2110) and Auditing Standard No. 12 (AS 12 Page A1 –2), risk of fraud, risk of weakness in internal controls, risk related to business risk, and risk of going concern audit opinion are factors that lead to the risks of material misstatement (PCAOB, 2010c; PCAOB, 2010d). These risks are found to increase audit fees (Hogan & Wilkins, 2008; Mavin, 2005; Sharma, 2004). Therefore, Study Two argues that

auditors charge higher fees in firms with higher levels of RMM. With regards to non-audit service fees, it is expected that risky firms pay more for non-audit services to help alleviate their risks. Such action from firms to auditors comes with risk; that is, auditors may rely on their clients in terms of economic dependency (Carmichael & Swieringa, 1968). This, in turn, threatens auditor independence and decreases audit quality (Carmichael & Swieringa, 1968; Harris, 2014; Tepalagul & Lin, 2015; Wright & Wright, 1997). Therefore, this research argues that in firms with higher non-audit services, auditors report less RMM.

Based on the literature in the area of audit fees and non-audit service fees, two hypotheses are developed: (1) audit fees increase in firms with higher levels of the risks of material misstatement, and (2) non-audit service fees increase in firms with lower levels of the risks of material misstatement. To test these hypotheses, the audit fees model is used with its control variables including the ratios of receivables and inventory to total assets (*INVE_RI* & *RICE_RI*), sales growth (*GROWTH*), foreign operations (*FOROPS*), firm size (*Ln_Fsize*), tangible assets (*LN_TAN*), total accruals (*ACCR*), return on assets (*ROA*), leverage (*LEV*), current ratio (*CURNT*), return volatility (*VOL*), audit opinion (*OPNI*), audit firm type (*BIG4*), Z-Score (*ZSCORE*), business subsidiaries (*SUB*), merger (*MERG*), loss (*LOSS*), year dummies, and industry dummies. These control variables are adopted from literature on audit fees and non-audit service fees. A final sample of 1008 firm-year observations is achieved after excluding firms that were listed after March 2015, and firms that had missing data.

Study Two results show a statistically significant association between RMM and audit and non-audit service fees. Specifically, the results show that number of risks in the new auditor's report increase audit fees. The results also show that number of words used in per risk has a positive and statistically significant relationship with audit fees. Consistent with those of Hogan and Wilkins (2008), Hoitash et al. (2008), Kinney et al. (2004), Li and Lin (2005), Raghunandan

and Rama (2006), and Stanley and DeZoort (2007), the findings of this study are in line with the argument that audit fees are a function of client size, complexity, and risks.

The results of this study also show that firms with higher risks tend to pay more for non-audit services. This positive linkage between non-audit services and RMM suggests that non-audit services do not affect auditor independence and audit quality. This is consistent with the similar work of DeFond et al. (2002) who find no significant association between non-audit services and auditor independence. The results of the study, however, are not in line with, for example, Harris (2014) and Wines (1994) who argue that non-audit services place auditor independence and audit quality at risk.

The empirical regression results have been through multiple tests to increase the levels of confidence that findings are robust, not sensitive to specific estimation procedures, and findings do not suffer from heteroscedasticity and endogeneity problems. These tests include alternative specification of variables, split sample strategy, the use of (a) Feasible Generalized Least Squares (FGLS), (b) endogeneity bias tests, (c) Two-Stage-Least-Squares (2SLS), and (d) Bootstrapping approach.

8.4 Summary and conclusion Study Three: The examination of the relationships between auditor's disclosures of risks of material misstatement and the information asymmetry in the market for the firm's stock

This study investigates the effects of implementing the new auditing standards on information asymmetry component in the market. This is because investors, policy makers, and researchers have questioned the role of audit in protecting investors of firms whose shares are publicly traded (Barnes, 2013; Bédard et al., 2014; Gaetano, 2014; Katz, 2014) especially after the global financial crisis (Asare & Wright, 2012), and accounting scandals including Enron and Arthur Andersen (Zhou, 2007). Their criticisms originated mainly from the fact that previous

auditor's reporting model employed standardized language and this in turn increased information opacity and asymmetry. In response to this issue, audit regulators issued a new auditing standard that is *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements* which requires auditors to provide more information about the audit in the auditor's report (FRC, 2013a). The aim of this new auditing standard is to alleviate the information asymmetry (Christensen et al., 2014).

Given this background, this study expects that auditor's disclosures of RMM in the new auditor's report improve information transparency and reduce information asymmetry, which in turn increase the stock liquidity of firms. This is because (1) the trading behavior differs amongst the uninformed and the informed traders (Venkatesh & Chiang, 1986); (2) several theoretical studies argue that firms that provide more and value-relevant information to uninformed traders, information asymmetry is reduced (Gonedes, 1980; Greenstein & Sami, 1994); and (3) Lev (1988) underlines that the stock market would become deeper with lower transaction costs in a situation where information asymmetry is reduced among investors. Therefore, the aim of this study is to test the relationship between the disclosures of risks of material misstatement in the extended auditor's report and the information asymmetry in the market for the firm's stock. To do so, the model of disclosures and stock liquidity are used with their proxies including bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*).

The empirical analysis of Study Three is based on a sample of 1047 firm-year observations from the LSE with a premium listing of equity shares over the period 2014 to 2016. In addition, this analysis uses balanced panel data which provides a more satisfactory basis for the aim of this research. This study extends the literature in this area by producing evidence that increased accounting disclosures have a positive and statistically significant influence on market

microstructure (i.e., stock liquidity) through reducing information asymmetry. More specifically, the pooled ordinary least squares (OLS) results show that as the number of words in the disclosures of risks of material misstatement (*WORDS*) increase, bid-ask spread (*SPR*) reduced. This indicates that the auditor's disclosures reduce the information asymmetry amongst investors. This result is consistent with the findings of similar work of Schoenfeld (2017) and Shroff et al. (2013) who find a positive relation between bid-ask spreads and the levels of information asymmetry. This is also consistent with previous research that finds bid-ask spread (*SPR*) is reduced in better governed firms (e.g., Ali et al., 2017; Attig et al., 2006; Bhide, 1999; Brockman & Chung, 2003; Chung et al., 2010; Coffee, 1991; Maug, 1998).

The current study provides positive and statistically significant influence of the number of words in the disclosures of risks of material misstatement (*WORDS*) on stocks liquidity ratio (*LR*). This result indicates that such disclosures make the market thicker. This result is in line with prior studies that find liquidity ratio rises in firms that attempt to align the interests of stakeholders (Ali et al., 2017; Prommin et al., 2014). Furthermore, this study finds a positive and statistically significant linkage between auditor's disclosures and stock immediately. Particularly, as the number of words increases in the disclosures of risks of material misstatement (*WORDS*), number of trades (*TR*), and trading volume (*VOL*) increase. This suggests that investors in lower information asymmetry environment can buy or sell large blocks of stock in short periods of time (immediate). This finding is consistent with prior findings that trading volume is low in stocks with greater information asymmetry (Bartov & Bodnar, 1996; Chae, 2005; Glosten & Milgrom, 1985; Karpoff, 1986).

These findings are robust to the inclusion of industry and year effects, and the firm characteristics, such as firm size (*SIZE*), net income (*COM*), sales growth (*GROWTH*), asset tangibility (*PPE*), return volatility (*VOLA*), stock price (*PRC*) firm leverage (*LEV*), current

ratio (*CURNT*), and Z-Score (*ZSCORE*). In addition, the current research performs a variety of robustness checks to ensure that the main results are reliable. First, it employs a different alternative estimation method that is random-effects (RE). In doing so, random-effects (RE) provide the same results as those obtained from previous regression.

Second, to address the concern that the main results are influenced by economic conditions of the firm, the current study drops several firm characteristics. The results further confirm that even after dropping a number of firm characteristics, auditor's increased disclosures lead to greater stock liquidity. Third, the current study adopts splitting the sample strategy including re-running model 4.9 with only non-financial firms. Again, this approach does not make any significant change to the main results obtained from previous regression. Lastly, to check if the data and the variables suffer from heteroscedasticity and endogeneity problems, this study employs Feasible Generalized Least Squares (FGLS), endogeneity bias test, and Two-Stage-Least-Squares (2SLS). Overall, employing these approaches provide a significant level that findings are robust and not sensitive to specific estimation procedures.

8.5 Contributions of the research

According to Petre and Rugg (210), a research project should make a significant contribution of adding to knowledge or contributing to the literature by providing evidence to substantiate a conclusion that is worth making. The findings of this thesis make several major contributions to the literatures in current corporate governance, audit process and fees, and accounting disclosure. The objective of the first study is to show the influence of corporate governance practices, and auditee characteristics and performance on auditor's judgment relating to the risks assessments disclosures, and materiality level set by auditors.

Prior studies examine the influence of corporate governance on firm performance (Belkhir, 2009; Dunn & Sainty, 2009; Guest, 2009; McKnight & Weir, 2009), on the risk of fraud (Chen

et al., 2006; Sharma, 2004), on audit effort and auditor's judgment (Cohen & Hanno, 2000; Cohen et al., 2007; Nelson & Shukeri, 2011; Sharma et al., 2008), on audit process (Cohen et al., 2002), and audit fees (Abdul Wahab et al., 2011; Griffin, Lont, & Sun, 2008; Gul & Tsui, 1997; Gul & Tsui, 2001). The current study extends this strand of literature by linking, for the first time, corporate governance mechanisms with the disclosures of risks of material misstatement in the extended auditor's report for the U.K. listed firms, and providing empirical evidence that shows a positive relation between corporate governance quality and the levels of auditor's disclosures of RMM. This positive relation between the mechanisms of corporate governance and the auditor's judgment in relation to the risks of material misstatement is driven by agency theory. This theory suggests that in order to reduce the agent's incentive to engage in opportunism, the principal can incur monitoring costs designed to limit the aberrant activities of the agent (Jensen & Meckling 1976). Corporate governance serves as a monitoring mechanism over opportunistic managerial behavior (e.g., Manne, 1965). Corporate governance are also used to strengthen a firm's internal (e.g., Abbott et al., 2000), and to lower audit risk (e.g., Cohen et al., 2007). As such, auditors are expected to extend tests of controls, and hence the disclosures of RMM to support their assessments.

Likewise, a number of studies examine the influence of ownership structure on firm performance (McKnight & Weir, 2009; Mudambi & Nicosia, 1998), on the risk of fraud (Abbott et al., 2000; Beasley, 1996; Chen et al., 2006; Sharma, 2004), and audit fees (Gul & Tsui, 2001). The current study extends this stream of literature by linking, for the first time, the influence of ownership structure on auditor's judgment in relation to the disclosures of risks of material misstatement and audit materiality in the extended auditor's report for the U.K. listed firms, and providing empirical evidence that shows a positive relation between ownership structure and the levels of auditor's disclosures. The results of this thesis confirm findings that

suggest (1) corporate governance is an important monitor of the opportunistic behavior of management; and (2) auditors respond positively to the elements of corporate governance, and auditor's judgment is influenced by firm attributes and performance (Asare et al., 2001; Beaulieu, 2001; Johnstone & Bedard, 2001; Sharma et al., 2008).

Moreover, the findings of this study may help the users of the financial statements including investors with their future decisions as the current study provides empirical evidence of the key determinants of auditor's judgment in relation to the risks of material misstatement disclosures, and the materiality level. Besides, the current study may help auditors in terms of evaluating the strength of a firm corporate governance when formulating audit strategy as the current study provides an updated professional guidance on assessing firm corporate governance by identifying firm characteristics associated with RMM and the materiality level. This is important due to lack of sufficient professional guidance concerning which characteristics the auditors need to take into account in the assessment of firm corporate governance.

In terms of methodology, this is the first archival study in critical audit matters studies that is based on real-world settings because it collects secondary data about corporate governance, firm characteristics, ownership structure, and links them with actual CAMs paragraphs from auditor's report, while other CAMs studies apply a written CAMs paragraph and use different tools of participants (e.g., Brasel et al., 2016; Brown et al., 2014; Gimbar et al., 2015; Kachelmeier et al., 2015).

Study Two makes several major contributions to the academic literature, audit practitioners, and regulators. For researchers, it is the number of risks and the number of words used in per risk in the auditor's report that are associated with higher audit fees. In addition, auditors could use the findings of this study when formatting their future fees decisions as this study identifies factors related to the risks of material misstatement that increase audit fees. Regulators such as

International Auditing and Assurance Standards Board could use the findings of this study in understanding the drivers of audit fees in relation to the risks of material misstatement and make the disclosures of risks of material misstatement mandatory for smaller, non-listed U.K entities.

The current study also contributes to the empirical literature on auditor's report and their association with audit fees (Bédard et al., 2014; Butler, Leone, & Willenborg, 2004; Carcello & Li, 2013; Czerney, Schmidt, & Thompson, 2015; Gutierrez et al., 2016; Hay et al., 2006; Menon & Williams, 2010) by empirically investigating the effect of auditor's disclosures relating to the risks of material misstatement in the extended auditor's report on audit fees. In the bargain, this study is the first attempt to use both audit fees and non-audit service fees and link them with the risks of material misstatement in the extended auditor's report for U.K. listed firms. Lastly, the current study contributes to the empirical literature on risk disclosures in financial reports (Campbell, Chen, Dhaliwal, Lu, & Steele, 2014; Gutierrez et al., 2016; Kravet & Muslu, 2013) by showing that not only audit fees increased with the risks of material misstatement in the extended auditor's report but non-audit service fees increased as well. The positive association between non-audit services and the risks of material misstatement is not in line with the perspective of dependency theory which argues about the negative impact of one developed groups on less developed groups (Lenin, 1967). This is because when less developed groups rely on the more developed groups, the more developed groups could gain control over the formulation of economic policy in less developed groups. This is not the case with non-audit services and the risks of material misstatement as the results in this study show no significant association between non-audit services and auditor independence. In addition, the positive association between non-audit services and the risks of material misstatement in this study suggests that the additional assurance auditors provide through RMM disclosures in the

extended auditor's report prohibits auditors from waving their judgement on RMM. This is probably due to reputation risk and increased litigation risk engendered by RMM disclosures.

The findings of Study Three have implications for financial statements users, policymakers, researchers, and market microstructure (i.e., information asymmetry or stock liquidity). For users, the results of this study indicate that the auditor's disclosures of the risks of material misstatement in the extended auditor's report provide useful information about the audit and company's financial performance, which in turn help investors with their decision making. For policymakers, the results support the auditing standard (that is *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements*) that information asymmetry is reduced after the auditor communicates with investors via his/her report. Therefore, regulators may consider requiring auditors of smaller U.K. entities and secondary listing(s) entities to disclose the risks of material misstatement in the auditor's report as this new auditing standard applies to only large firms listed on the London Stock Exchange.

For researchers, Reid et al. (2015), Gutierrez et al. (2016), Gutierrez et al. (2017), and Lennox et al. (2017) argue about a short-term impact of auditor's disclosures of the risks of material misstatement in the extended auditor's report on market behavior. This study finds that there is also a long-term impact of auditor's disclosures on market microstructure (i.e., information asymmetry). In addition, prior studies in the area of the extended auditor's report employ two proxies to measure the change in a firm's stock. However, this study employs a variety of proxies related to stock liquidity, in a single study, including bid-ask spread (*SPR*), liquidity ratio (*LR*), stock turnover (*STO*), number of trades (*TR*), number of levels (*LVS*), and trading volume (*VOL*) to increase the understanding of how the risks of material misstatement disclosures affect stock liquidity.

This study also contributes to the literature in the area of market microstructure; that is, auditor's disclosures of RMM also reduce information asymmetry, which in turn enhance stock liquidity and not only the disclosures of, for instance, the valuation of oil and gas reserves, management earnings forecasts, cash flow, and earnings announcements, as argued by (e.g., Balakrishnan et al., 2014; Boone, 1998; Frino & Jones, 2005; Greenstein & Sami, 1994; Sabet & Heaney, 2015). Being the first study in critical audit matter studies that (1) links the disclosures of RMM and information asymmetry component in the stock market; and (2) documents that stock liquidity is higher for firms with better auditor's disclosures environment in the stock market of U.K., this study provides empirical evidence on the economic link between auditing regulation and information asymmetry.

8.6 Limitations and suggestions for future research

Although this study is probably the first comprehensive study since it examines (1) how firm corporate governance affects auditor's judgment in relation to the disclosures of risks of material misstatement and the materiality level; (2) how the auditor's disclosures affect audit and auditee firms in terms of audit fees and non-audit service fees; and (3) how such disclosures affect the capital market, it has some limitations similar to any study in social science.

First, this research has adopted twenty-one client-specific factors that could drive auditor's judgment in relation to the risks of material misstatement and the materiality level. It is possible that other firm characteristics may have an impact on auditor's judgment in relation to the disclosures of risks of material misstatement, and the materiality level. For example, one can argue that an effective audit committee would be better measured by considering (1) number of meetings, (2) competence of audit committee members and (3) independence of members. This is because the effectiveness of the audit committee would also be influenced by the attendance of the technical member. The more the technical member abstains from the audit

committee, the less effective it is. However, due to the limitation on the technical member's data, this study measures effectiveness of audit committee as follows: activity of audit committee, and independence of audit committee. It is worth examining both the impact of audit and auditee characteristics on auditor's judgment in relation to the disclosures of risks of material misstatement, and the materiality level after carefully considering the threat of multicollinearity.

Second, when examining the relationship between corporate governance and auditor's judgment in relation to the risks of material misstatement and the materiality level, this study uses individual governance variables including the board characteristics, audit and nomination committees, and ownership structure rather than using a governance quality score. Although there is no accurate measure of composite governance score, researchers in this area may replicate the results of this study by using an overall governance quality score, as opposed to individual governance variables.

Third, while the new auditor's report provides data relating to the type of risks of material misstatement (type of risk), for example, revenue recognition risk-based, taxation risk-based, evaluation of assets risk-based, provisions risk-based, accounting for investment risk-based, this thesis has not analyzed any regression using risk-based. Future research may examine, for instance, the influence of corporate governance on specific types of risks of misstatement. This should build on previous studies that argue about the positive relationship between corporate governance and the risk of fraud, default risk, and going concern audit opinion (e.g., Abbott et al., 2000; Ali et al., 2018; Iskandar et al., 2011).

Fourth, this study focuses on the risks of material misstatement variable. Identification of misstatements, and misstatements amounts of materiality in this thesis are based on auditor's judgments – judgments which are likely to vary amongst auditors (Iskandar, 1996), and may

also rely on the quality of the audit firm. This is supported by Wright and Wright (1997) who find that auditors are more likely to waive audit adjustments for larger clients. In addition, auditors are less likely to issue qualified audit opinion to larger clients (Krishnan & Krishnan, 1996). Furthermore, a negative relationship is documented between audit client importance and auditor independence (Carcello, Hermanson, & Huss, 2000; Trompeter, 1994). In other words, the measurements of RMM in this study relies on the information provided by the auditor in the auditor's report where the quality of audit differs based on, for example, audit firm size (DeAngelo, 1981). Hence, future research may replicate this study by using a different measurement of RMM.

A further limitation of the thesis is related to the study's sample. This is because, although this study attempts to have a comprehensive view on the determinants and the effects of the new auditing report (that is *International Standard on Auditing (UK and Ireland) 700, the Independent Auditor's Report on Financial Statements*) right after the effective date of this auditing standard in U.K., the sample period (limited to three years) is not long. However, extending the thesis past this point of time is not feasible currently due to time constraints. Furthermore, the sample size is also relatively small as this thesis is confined within the U.K. context only which may reduce the generalizability of results. One may want to extend this analysis to other markets (e.g., different legal systems) using a similar methodology for institutional differences.

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APPENDICES

Appendix A: An example of U.K. extended auditor's report prepared in accordance with Financial Reporting Council in 2013 (BP Group)

Consolidated financial statements of the BP group Independent auditor's report on the Annual Report and Accounts to the members of BP p.l.c.

Opinion on financial statements

In our opinion:

- the financial statements give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2015 and of the group's loss for the year then ended;
- the group financial statements have been properly prepared in accordance with IFRS as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with United Kingdom generally accepted accounting practice including FRS 101; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

Separate opinion in relation to IFRS as issued by the International Accounting Standards Board

As explained in Note 1 to the consolidated financial statements, the group in addition to applying IFRS as adopted by the European Union, has also applied IFRS as issued by the International Accounting Standards Board (IASB). In our opinion the consolidated financial statements comply with IFRS as issued by the IASB.

What we have audited

We have audited the financial statements of BP p.l.c. for the year ended 31 December 2015 which comprise:

Group	Parent company
Group balance sheet as at 31 December 2015.	Balance sheet as at 31 December 2015.
Group income statement for the year then ended.	Cash flow statement for the year then ended.
Group statement of comprehensive income for the year then ended.	Statement of changes in equity for the year then ended.
Group statement of changes in equity for the year then ended.	Related Notes 1 to 15 to the financial statements.
Group cash flow statement for the year then ended.	

The financial reporting framework that has been applied in the preparation of the group financial statements is applicable law and International Financial Reporting Standards (IFRS) as adopted by the European Union. The financial reporting framework that has been applied in the preparation of the parent company financial statements is applicable law and United Kingdom accounting standards (United Kingdom generally accepted accounting practice) including FRS 101.

Our assessment of risks of material misstatement

We identified the risks of material misstatement described below as those that had the greatest effect on our overall audit strategy, the allocation of resources in the audit and the direction of the efforts of the audit team. In addressing these risks, we have performed the procedures below which were designed in the context of the financial statements as a whole and, consequently, we do not express any opinion on these individual areas. These matters are unchanged from those we reported in our 2014 audit opinion.

Risk	Our response to the risk	What we concluded to the Audit Committee
<p>The determination of the liabilities, contingent liabilities and disclosures arising from the significant uncertainties related to the Gulf of Mexico oil spill (as described on page 70 of the report of the audit committee and Notes 1 and 2 of the financial statements).</p> <p>On 2 July 2015, the group announced it had reached agreements in principle with the United States federal government and five Gulf States to settle all federal and state claims arising from the incident.</p> <p>The proposed Consent Decree to resolve all United States and Gulf states natural resource damage claims and Clean Water Act penalty claims is awaiting court approval. The United States is expected to file a motion with the court to enter the Consent Decree as a final settlement</p>	<p>For the Gulf of Mexico oil spill the primary audit engagement team performed the following audit procedures.</p> <p>We walked through and tested the controls designed and operated by the group relating to the liability accounts for the Gulf of Mexico oil spill.</p> <ul style="list-style-type: none"> • We met with the group's legal team to understand developments across all of the Gulf of Mexico oil spill matters and their status. We discussed legal developments with the group's external lawyers and read determinations and judgments made by the courts. • We reviewed the agreements in principle, verifying that specific matters were accurately reflected in the group's accounting and disclosures. • With regard to PSC settlements, we engaged EY actuarial experts to consider the analysis of available claims data undertaken by management. We corroborated the data used in respect of all claim categories, with specific regard to business 	<p>Based on our procedures we are satisfied that the amounts provided by management are appropriate.</p> <p>We are satisfied that management is unable to determine a reliable estimate for certain obligations as disclosed in Note 2 of the financial statements.</p> <p>Given the agreements in principle signed on 2 July 2015 we consider it appropriate that the Emphasis of Matter is no longer required in our audit opinion.</p>

around the end of March, which the court will then consider. Although there is still risk, the agreements in principle have significantly reduced the uncertainty associated with this element of the liability determination for 2015. Following the agreements in principle, we concluded the remaining uncertainties were no longer fundamental to a user's understanding of the financial statements and therefore we have removed the Emphasis of Matter from our 2015 audit opinion.

There continues to be uncertainty regarding the outcome of Plaintiffs' Steering Committee ('PSC') settlements, the most substantial category being business economic loss claims. The 8 June 2015 deadline for claims resulted in a significant number of claims received, which have not yet been processed and quantified. Management concluded that a reliable estimation of the expected liability still cannot be made at 31 December 2015

The significant decrease in current and future oil and gas prices during 2015 and the impact this has had on the carrying value of the group's Upstream assets (as described on page 69 of the report of the audit committee and Note 1 of the financial statements).

Declines in commodity prices have had a significant effect on the carrying value of the group's assets, as evidenced by the impairments recognized in the 2015 financial statements and in the prior year.

The principal risk is in relation to management's assessment of future cash flows, which are used to project the recoverability of tangible and intangible assets.

economic loss, this being the most complex to estimate. Our testing included understanding and verifying trends in the actuarial models, considering the approach in respect of all claim categories which included comparing with prior periods.

- We considered the accounting treatment of the liabilities, contingent liabilities and disclosures under IFRS criteria, to conclude whether these were appropriate in all the circumstances.

We extended the scope of our original planned procedures to address the changing risk. This included further use of EY valuation experts in critically assessing and corroborating the revised assumptions used in impairment testing, the most significant of these being future market oil and gas prices and discount rates. We also focused on reserves and resources volumes, as described elsewhere in our report.

In addressing this risk, audit procedures were performed by the component teams at each of the group's 14 Upstream locations scoped-in for the audit of asset impairment and by the primary audit engagement team for the remaining assets identified at risk of impairment.

- We walked through and tested the controls designed and operated by the group relating to the assessment of the carrying value of tangible and intangible assets.
- We examined the methodology used by management to assess the carrying value of tangible and intangible assets assigned to cash-generating units, to determine its compliance with accounting standards and consistency of application.
- We corroborated estimates of future cash flows and challenged whether these were appropriate in light of future price assumptions and the cost budgets. We performed sensitivity analyses over inputs to the cash flow models.
- Together with EY valuation experts we assessed specific inputs to the determination of the discount rate, including the risk-free rate and country risk rates, along with gearing and cost of debt. Such inputs were benchmarked against risk rates in international markets in which the group operates.
- We performed procedures over the completeness of the impairment charge and exploration write-offs, also validating that base data used in the impairment models agreed to the underlying books and records

BP's oil and gas price assumptions are comparable to the range seen within the industry at this time.

The reduction in the pre-tax discount rate from 12% to 11% and the post-tax discount rate from 8% to 7% are within the range of our expectation.

Based on our procedures, we believe the impairment charge is appropriate.

Based on our procedures on the exploration portfolio we consider the write-offs were properly recorded and remaining carrying values are appropriate

The estimate of oil and gas reserves and resources has a significant impact on the financial statements, particularly impairment testing and depreciation, depletion and amortization ('DD&A') charges (as described on page 69 of the report of the audit committee and Note 1 of the financial statements).

The estimation of oil and natural gas reserves and resources is a significant area of judgement due to the technical uncertainty in assessing quantities and complex contractual arrangements

Audit procedures were performed by the component teams at each of the group's 14 Upstream locations scoped-in for the audit of reserves and resources and by the primary audit engagement team.

- We tested the group's controls over their internal certification process for technical and commercial experts who are responsible for reserves and resources estimation.
- We assessed the competence and objectivity of these experts, to satisfy ourselves they were appropriately qualified to carry out the volumes estimation.
- We confirmed that significant changes in reserves and resources were made in the appropriate period, and in compliance with the Discovered Resources Management Policy

Based on our procedures we consider that the reserves estimations are reasonable for use in the impairment testing and calculation of DD&A.

<p>dictating the group's share of reportable volumes.</p> <p>Reserves and resources are also a fundamental indicator of the future potential of the group's performance.</p>	<p>("DRM-P"). We gave specific consideration to BP's reported share of reserves in joint arrangements and associates, including Rosneft.</p> <ul style="list-style-type: none"> • Where volumetric movements had a material impact on the financial statements, we validated these volumes against underlying information and documentation as required by the DRM-P, along with checking that assumptions used to estimate reserves and resources were made in compliance with relevant regulations. • We validated that the updated reserves and resources estimates were included appropriately in the group's consideration of impairment and in accounting for DD&A. 	
<p>Unauthorized trading activity within the integrated supply & trading function and the potential impact on revenue (as described on page 69 of the report of the audit committee and Note 1 of the financial statements).</p> <p>Unauthorized trading activity is a fraud risk associated with a potential deliberate misstatement of the group's trading positions or mis-marking of positions with an intention to:</p> <ul style="list-style-type: none"> • Minimize trading losses. • Maximize trading profits. • Understate profits or move profits to subsequent periods when bonus ceilings have already been reached, to maximize individual bonuses across financial years. <p>These acts would lead to an overstatement or understatement of the group's revenue and profits.</p>	<p>Audit procedures on revenue and trading were performed by component teams and the primary audit engagement team at 7 locations across the US, UK and Singapore.</p> <ul style="list-style-type: none"> • We walked through and tested the controls designed and operated by the group over unauthorized trading activity. • Using analytics software we identified trades with the highest risk of unauthorized activity so as to focus our testing on these trades. • We obtained confirmations directly from third parties for a sample of trades. • We verified the fair value of a sample of derivatives using contract and external market prices. • We tested the completeness of the amounts recorded in the financial statements through performing procedures to detect unrecorded liabilities as well as detailed cut-off procedures around sales, purchases, trade receivables and trade payables. 	<p>Based on our procedures we identified no matters to report to the Audit Committee.</p>
<p>The current geopolitical environment in Russia and the existence of US and EU economic sanctions may impact BP's ability to exercise significant influence over Rosneft and the consequent accounting for the group's interest in Rosneft using the equity method (as described on page 69 of the report of the audit committee and Notes 1 and 16 of the financial statements).</p> <p>Geopolitical developments (such as further sanctions) may present changes which could diminish the ability of the group to exert significant influence, through diminished participation in the financial and operating policy decisions of Rosneft.</p>	<p>For the Rosneft operating segment the primary audit engagement team performed the following audit procedures.</p> <ul style="list-style-type: none"> • We assessed the impact of sanctions imposed by the US and EU to determine the effect on the group's ability to exercise significant influence over Rosneft. We did this through discussion with the group's legal team and through observing the interaction between BP and Rosneft. We verified the second BP-appointed director to the board of Rosneft and considered whether BP demonstrated significant influence under IFRS criteria. • We considered the adequacy of the financial and other information provided to BP to allow compliance with its reporting obligations, observing that appropriate review was completed by BP on the information reported. • We provided instructions to Rosneft's independent auditors who reported in accordance with our timetable and instructions. 	<p>Based on our procedures we are satisfied that the criteria in IFRS for equity accounting are met in respect of Rosneft and that the impact of sanctions extant at this time does not prevent the exercise of significant influence by BP.</p>
<p>The scope of our audit</p>		
<p>Our assessment of audit risk, our evaluation of materiality and our allocation of performance materiality determine our audit scope for each entity within the group. Taken together, this enables us to form an opinion on the consolidated financial statements. We take into account size, risk profile, the organization of the group and effectiveness of group-wide controls, changes in the business environment and other factors such as recent internal audit results when assessing the level of work to be performed at each component.</p> <p>In scoping the audit we reflect the group's structure (Upstream, Downstream, Rosneft, Other businesses and corporate and Gulf of Mexico oil spill), plus the group's functions. In assessing the risk of material misstatement to the group financial statements, and to ensure we had adequate quantitative coverage of significant accounts in the financial statements, we performed full or specific scope audit procedures over 47 components covering the UK, US, Angola, Azerbaijan, Germany, Russia, Singapore and the group functions, representing the principal business units within the group.</p> <p>Of the 47 components selected, we performed an audit of the complete financial information of 9 components ("full scope components") which were selected based on their size or risk characteristics. For the remaining 38 components ("specific scope components"), we performed audit procedures on specific accounts within that component that we considered had the potential for the greatest impact on the significant accounts in the financial statements either because of the size of these accounts or their risk profile.</p> <p>For the current year, the full scope components contributed 43% of the group's loss before tax, 41% of the group's revenue and 11% of the group's property, plant and equipment. The specific scope components contributed 29% of the group's revenue and 55% of the group's property, plant and equipment. The audit scope of these components may not have included testing of all significant accounts of the component but will have contributed to the coverage of significant accounts tested for the group. Of the 38 specific scope components, we instructed 7 of these locations to perform specified procedures over impairment of goodwill and other intangible assets, recoverability of certain receivables and the carrying value of certain investments held by the group.</p>		

The remaining components not subject to full or specific group scoping are not significant individually or in the aggregate. They include many small, low risk components and balances; each remaining component represents an average of 0.02% of the total group loss before tax and 0.04% of total group revenue. For these components, we performed other procedures, including evaluating and testing management's group wide controls across a range of geographies and segments, specifically testing the oversight and review controls that management has in place to ensure there are no material misstatements in these locations. We performed analytical and enquiry procedures to address the risk of residual misstatement on a segment-wide and component basis. We tested consolidation journals to identify the existence of any further risks of misstatement that could have been material to the group financial statements.

Changes from the prior year

In the current year we designed full and specific procedures for in-scope components, which represents a change from the prior year when specific scope components only, were included. This change did not result in a significant change in the level of procedures undertaken at locations.

Involvement with component teams

In establishing our overall approach to the group audit, we determined the type of work that needed to be undertaken at each of the components by us, as the primary audit engagement team, or by component auditors from other EY global network firms operating under our instruction. Of the 9 full scope components, audit procedures were performed on 5 of these directly by the primary audit engagement team. For the 38 specific scope components, audit procedures were performed on 18 directly by the primary audit engagement team. Where work was performed by component auditors, we determined the appropriate level of involvement to enable us to determine that sufficient audit evidence had been obtained as a basis for our opinion on the group as a whole.

The group audit team continued to follow a programme of planned visits designed to ensure that the Senior Statutory Auditor or his designate visits significant locations to ensure the audit is executed and delivered in accordance with the planned approach and to confirm the quality of the audit work undertaken. During the current year's audit cycle, visits were undertaken by the primary audit engagement team to the component teams in the US, Angola, Azerbaijan, Germany and Russia. Part of the purpose of these visits is to confirm that appropriate procedures have been performed by the auditors of the components and that the significant audit areas were covered as communicated in the detailed audit instructions, including the risks of material misstatement as outlined above. The primary audit engagement team review included examining key working papers and conclusions where these related to areas of management and auditor judgement with specific focus on the risks detailed above. The primary audit engagement team also participated in the component teams' planning, during visits made earlier in the audit period. Telephone and video meetings were held with the auditors at locations which the primary audit engagement team did not visit in person. This, together with additional procedures performed at group level, gave us appropriate evidence for our opinion on the group financial statements.

One of the significant locations is Russia, which includes Rosneft, a material associate not controlled by BP. We were provided with appropriate access to Rosneft's auditor in order to ensure they had completed the procedures required by ISA 600 on the financial statements of Rosneft, used as the basis for BP's equity accounting.

Our application of materiality

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion.

Materiality

The magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

We determined materiality for the group to be \$0.5 billion (2014 \$1 billion), which is 5.7% (2014 5%) of underlying replacement cost profit (as defined on page 258) before interest and taxation. We believe that underlying replacement cost profit before interest and taxation is the most appropriate measure upon which to calculate materiality, due to the fact it excludes the impact of both changes in crude oil and product prices and items disclosed as non-operating items that can significantly distort the group's results.

During the course of our audit, we re-assessed initial materiality in the context of the group's performance and this resulted in no change from our original assessment of materiality.

Performance materiality

The application of materiality at the individual account or balance level. It is set at an amount to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

On the basis of our risk assessments, together with our assessment of the group's overall control environment, our judgement was that performance materiality was 75% (2014 75%) of our materiality, namely \$375 million (2014 \$750 million). We have set performance materiality at this percentage to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

Audit work at component locations for the purpose of obtaining audit coverage over significant financial statement accounts is undertaken based on a percentage of total performance materiality. The performance materiality set for each component is based on the relative scale and risk of the component to the group as a whole and our assessment of the risk of misstatement at that component. In the current year, the range of performance materiality allocated to components was \$75 million to \$300 million (2014 \$150 million to \$640 million).

Reporting threshold

An amount below which identified misstatements are considered as being clearly trivial.

We agreed with the audit committee that we would report to them all uncorrected audit differences in excess of \$25 million (2014 \$50 million), which is set at 5% of materiality, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

We evaluate any uncorrected misstatements against both the quantitative measures of materiality discussed above and in light of other relevant qualitative considerations in forming our opinion.

Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the group's and the parent company's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the directors; and the overall presentation of the financial statements. In addition, we read all the financial and non-financial information in the annual report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Respective responsibilities of directors and auditor

As explained more fully in the Statement of directors' responsibilities set out on page 93, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Opinion on other matters prescribed by the Companies Act 2006

In our opinion:

- the part of the Directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006; and
- the information given in the Strategic report and the Directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which we are required to report by exception

ISAs (UK and Ireland) reporting	We are required to report to you if, in our opinion, financial and non-financial information in the annual report is: <ul style="list-style-type: none">• materially inconsistent with the information in the audited financial statements; or• apparently materially incorrect based on, or materially inconsistent with, our knowledge of the group acquired in the course of performing our audit; or• otherwise misleading. In particular, we are required to report whether we have identified any inconsistencies between our knowledge acquired in the course of performing the audit and the directors' statement that they consider the annual report and accounts taken as a whole is fair, balanced and understandable and provides the information necessary for shareholders to assess the entity's position and performance, business model and strategy; and whether the annual report appropriately addresses those matters that we communicated to the audit committee that we consider should have been disclosed.	We have no exceptions to report.
Companies Act 2006 reporting	We are required to report to you if, in our opinion: <ul style="list-style-type: none">• adequate accounting records have not been kept by the parent company, or returns adequate for our audit have not been received from branches not visited by us;• the parent company financial statements and the part of the Directors' remuneration report to be audited are not in agreement with the accounting records and returns; or• certain disclosures of directors' remuneration specified by law are not made; or• we have not received all the information and explanations we require for our audit.	We have no exceptions to report.
Listing Rules review requirements	We are required to review: <ul style="list-style-type: none">• the directors' statement in relation to going concern, set out on page 94, and longer-term viability, set out on page 94; and• the part of the Corporate governance statement relating to the company's compliance with the provisions of the UK Corporate Governance Code specified for our review.	We have no exceptions to report.
Statement on the directors' assessment of the principal risks that would threaten the solvency or liquidity of the entity		
ISAs (UK and Ireland) reporting	We are required to give a statement as to whether we have anything material to add or to draw attention to in relation to:	We have nothing material to add or to draw attention to.

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- the directors' confirmation in the annual report that they have carried out a robust assessment of the principal risks facing the entity, including those that would threaten its business model, future performance, solvency or liquidity;
 - the disclosures in the annual report that describe those risks and explain how they are being managed or mitigated;
 - the directors' statement in the Directors' report (Directors' statements, page 94) about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them, and their identification of any material uncertainties to the entity's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements; and
 - the directors' explanation in the annual report as to how they have assessed the prospects of the entity, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the entity will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.
-

John C. Flaherty (Senior Statutory Auditor) for and on behalf of Ernst & Young LLP, Statutory Auditor
London

4 March 2016

- The maintenance and integrity of the BP plc. web site is the responsibility of the directors; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the web site.
- Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions

Report of Independent Registered Public Accounting Firm

The board of directors and shareholders of BP plc.

We have audited the accompanying group balance sheets of BP plc. as of 31 December 2015 and 31 December 2014, and the related group income statement, group statement of comprehensive income, group statement of changes in equity and group cash flow statement for each of the three years in the period ended 31 December 2015. These financial statements are the responsibility of the company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion. In our opinion, the financial statements referred to above present fairly, in all material respects, the group financial position of BP plc. at 31 December 2015 and 31 December 2014, and the group results of its operations and its cash flows for each of the three years in the period ended 31 December 2015, in accordance with International Financial Reporting Standards as adopted by the European Union and International Financial Reporting Standards as issued by the International Accounting Standards Board. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), BP plc.'s internal control over financial reporting as of 31 December 2015, based on criteria established in the UK Financial Reporting Council's Guidance on Risk Management, Internal Control and Related Financial and Business Reporting and our report dated 4 March 2016 expressed an unqualified opinion.

/s/ Ernst & Young LLP
London, United Kingdom
4 March 2016

Appendix B: An example of U.K. extended auditor's report prepared in accordance with Financial Reporting Council in 2013 (Diploma Group)

Independent Auditor's Report to the members of Diploma PLC

Opinion on financial statements of Diploma PLC

In our opinion:

the financial statements give a true and fair view of the state of the Group's and of the Parent Company's affairs as at 30 September 2014 and of the Group's profit for the year then ended;

- the Group financial statements have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union;

- the Parent Company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and

- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the Group financial statements, Article 4 of the IAS Regulation

The financial statements comprise the Consolidated Income Statement, the Consolidated Statement of Comprehensive Income and Other Comprehensive Income, the Consolidated Statement of Changes in Equity, the Consolidated Statement of Financial Position, the Consolidated Cash Flow Statement, the related notes 1 to 29 and the Group Accounting policies. This also comprises the Parent Company Balance Sheet, the

Reconciliation of Movement in Shareholders' Funds and its related notes (a) to (d) and the Parent Company Accounting policies. The financial reporting framework that has been applied in the preparation of the Group financial statements is applicable law and IFRSs as adopted by the European Union.

The financial reporting framework that has been applied in the preparation of the Parent Company financial statements is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Going concern

As required by the Listing Rules we have reviewed the Directors' statement on page 69 that the Group is a going concern. We confirm that:

- we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate;

and

- we have not identified any material uncertainties that may cast significant doubt on the Group's ability to continue as a going concern. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's ability to continue as a going concern.

Risk

Carrying value of Goodwill, tangible and intangible assets

The key assumptions used in the assessment of the carrying value of goodwill, tangible and intangible assets are determined with reference to judgemental factors such as forecast cash flows and the appropriate discount rate.

Valuation of inventory including appropriateness of judgements applied within the obsolescence provision

Management judgement is required in determining the completeness of the inventory provisions and making an

Our assessment of risks of material misstatement

The assessed risks of material misstatement described below remain the same as the prior year end are those that had the greatest effect on our audit strategy, the allocation of resources in the audit and directing the efforts of the engagement team.

Our audit procedures relating to these matters were designed in the context of our audit of the financial statements as a whole, and not to express an opinion on individual accounts or disclosures.

Our opinion on the financial statements is not modified with respect to any of the risks described below, and we do not express an opinion on these individual matters.

How the scope of our audit responded to the risk

We assessed the assumptions used in the impairment model, specifically including the cash flow projections, cash-generating unit allocation, discount rates, perpetuity growth rates and the sensitivities applied. Our procedures included reviewing forecast cash flows with reference to historical trading performance, consulting with our valuation specialists who benchmarked assumptions such as the perpetual growth rate and discount rate to external macro-economic and market data. Having ascertained the extent of change in those assumptions that either individually or collectively would be required for the assets to be impaired by performing sensitivity analysis on the key assumptions, we considered the likelihood of such a movement in those assumptions arising and the adequacy of the disclosures within the financial statements.

We have considered the provision at each business unit level. We evaluated the recorded provision, specifically checking the discontinued dates of those relevant stock lines to assess whether they have been aged correctly and the appropriate provision percentage has been applied. We have assessed the net realisable value of inventory and challenged management's assumptions with regards to the completeness of the inventory provisions and made an assessment of its adequacy, considering the age and volumes relative to expected usage. We also compared the actual sales value of a sample of

assessment of its adequacy, considering the age and volumes relative to expected usage.

The recoverability of trade debtors and appropriateness of the bad debt provision

Management judgement is required in determining the completeness of the trade receivables provision and making an assessment of its adequacy, considering the expected recoverability of the year end receivables

Our application of materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality both in planning the scope of our audit work and in evaluating the results of our work. We determined materiality for the Group to be £2.5 million (2013: £2.5 million), which is approximately 5% of profit before tax (2013: 5%).

An overview of the scope of our audit

Our Group audit was scoped by obtaining an understanding of the Group and its environment, including Group-wide controls, and assessing the risks of material misstatement at the Group level. Based on that assessment,

we focused our Group audit scope primarily on the audit work at 7 (2013: 7) locations. Each of these 7 locations was subject to a full scope audit. An additional 4 (2013: 5) locations were subject to specified audit procedures which address each of the significant balances and significant risks within these entities. Together the work at these locations represents the principal business units of the Group and accounts for 71% (2013: 79%) of the Group's revenues and 78% (2013: 86%) of the Group's operating profit.

The Group audit team has designed and implemented a rotational country visit programme to ensure that the Senior Statutory Auditor or another senior member of the Group audit team visits these locations and attends close out meetings. Each year this programme of visits includes the three most significant territories (being the US, Canada and UK). Where no visits are carried out the Senior Statutory Auditor or another senior member of the team has held discussions with the lead partner in the current year. In years when we do not visit a significant component we have discussed with the component audit team their risk assessment, and reviewed documentation of the findings from their work.

At the parent entity level we also tested the consolidation process and carried out analytical procedures to confirm our conclusion that there were no significant risks of material misstatement of the aggregated financial information of the remaining components not subject to audit or specified audit procedures.

Opinions on other matters prescribed by the Companies Act 2006

inventory items to their book value to ascertain that the carrying value of inventories does not exceed their net realisable value.

We have challenged Management's assumptions in calculating the bad debt provision, including reviewing the ageing of receivables in comparison to previous years, reviewing the level of bad debt write-offs in the current year and against the prior year and checking the recoverability of outstanding debtors through examination of subsequent cash receipts.

We agreed with the Audit Committee that we would report to the Committee all audit differences in excess of £50,000 (2013: £50,000), as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds. We also report to the Audit Committee on disclosure matters that we identified when assessing the overall presentation of the financial statements.

Our duty to read other information in the Annual Report

Under the ISAs (UK and Ireland), we are required to report to you if, in our opinion, information in the annual report is:

- materially inconsistent with the information in the audited financial statements; or
- apparently materially incorrect based on, or materially inconsistent with, our knowledge of the Group acquired in the course of performing our audit; or
- is otherwise misleading.

In particular, we are required to consider whether we have identified any inconsistencies between our knowledge acquired during the audit and the Directors' Statement that they consider the annual report is fair, balanced and understandable and whether the annual report appropriately discloses those matters that we communicated to the Audit Committee which we consider should have been disclosed. We confirm that we have not identified any such inconsistencies or misleading statements.

Respective responsibilities of directors and auditor

In our opinion:

- the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006; and
- the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Matters on which we are required to report by exception Adequacy of explanations received and accounting records

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or

• adequate accounting records have not been kept by the Parent Company, or returns adequate for our audit have not been received from branches not visited by us; or

- the Parent Company financial statements are not in agreement with the accounting records and returns.

We have nothing to report in respect of these matters.

Directors' remuneration

Under the Companies Act 2006 we are also required to report if in our opinion certain disclosures of Directors' remuneration have not been made or the part of the Directors' Remuneration Report to be audited is not in agreement with the accounting records and returns. We have nothing to report arising from these matters.

Corporate Governance Statement

Under the Listing Rules we are also required to review the part of the Corporate Governance Statement relating to the company's compliance with nine provisions of the UK Corporate Governance Code. We have nothing to report arising from our review.

As explained more fully in the Statement of Directors' responsibilities, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors. We also comply with International Standard on Quality Control 1 (UK and Ireland). Our audit methodology and tools aim to ensure that our quality control procedures are effective, understood and applied. Our quality controls and systems include our dedicated professional standards review team and independent partner review. This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are either required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Group's and the Parent Company's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the directors; and the overall presentation of the financial statements. In addition, we read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Edward Hanson (Senior Statutory Auditor)
for and on behalf of Deloitte LLP
Chartered Accountants and Statutory Auditor
London
United Kingdom

Appendix C: An example of U.K. extended auditor's report prepared in accordance with Financial Reporting Council in 2013 (DIAGEO)

Independent auditor's report to the members of diageo plc

Report on the financial statements

Our opinion

In our opinion:

- Diageo plc's group financial statements and company financial statements (the financial statements) give a true and fair view of the state of the group's and of the company's affairs as at 30 June 2016 and of the group's profit and cash flows for the year then ended;
- the group financial statements have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union;
- the company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006 and, as regards the group financial statements, Article 4 of the IAS Regulation.

Separate opinion in relation to IFRSs as issued by the IASB

As explained in note 1 to the financial statements, the group, in addition to applying IFRSs as adopted by the European Union, has also applied IFRSs as issued by the International Accounting Standards Board (IASB). In our opinion, the group financial statements comply with IFRSs as issued by the IASB.

What we have audited

The financial statements, included within the Annual Report, comprise:

- the consolidated balance sheet as at 30 June 2016;
- the company balance sheet as at 30 June 2016;
- the consolidated income statement and the consolidated statement of comprehensive income for the year then ended;
- the consolidated statement of cash flows for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the statement of changes in equity for the company for the year then ended; and
- the notes to the financial statements, which include a summary of significant accounting policies and other explanatory information. Certain required disclosures have been presented elsewhere in the Annual Report, rather than in the notes to the financial statements. These are cross-referenced from the financial statements and are identified as audited.

The financial reporting framework that has been applied in the preparation of the group financial statements is IFRSs as adopted by the European Union, and applicable law. The financial reporting framework that has been applied in the preparation of the company financial statements is United Kingdom Accounting Standards, comprising FRS 101 Reduced Disclosure Framework, and applicable law (United Kingdom Generally Accepted Accounting Practice).

Area of focus

Carrying value of goodwill and intangible assets

The group has goodwill of £2,699 million, indefinite-lived brand intangibles of £8,079 million and other intangible assets of £1,592 million as at 30 June 2016, contained within 21 cash generating units ('CGUs').

Our audit approach

Overview

Materiality

- Overall group materiality: £140 million, which represents 5% of profit before taxation and exceptional items (as defined in note 4 to the group financial statements).

Audit scope

- We conducted full scope audit work in ten countries in which the group has significant operations. Our work also covered the four group shared service centres.
- In addition, we performed the audit of specific balances and transactions in six countries, as well as over Moët Hennessy, the group's principal associate.
- During the year, the group engagement team visited all countries where full scope audits were performed, all shared service centres and two of the countries where audits of specific balances and transactions took place. They also visited the Moët Hennessy audit team.

Areas of focus

- Carrying value of goodwill and intangible assets.
- Taxation matters.
- Presentation of exceptional items, including business disposals.
- Provisions and contingent liabilities.
- Post-employment benefit obligations.

The scope of our audit and our areas of focus

We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) ("ISAs (UK & Ireland)"). We designed our audit by determining materiality and assessing the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud. The risks of material misstatement that had the greatest effect on our audit, including the allocation of our resources and effort, are identified as "areas of focus" in the table below. We have also set out how we tailored our audit to address these specific areas in order to provide an opinion on the financial statements as a whole, and any comments we make on the results of our procedures should be read in this context. This is not a complete list of all risks identified by our audit.

How our audit addressed the area of focus

We evaluated the appropriateness of management's identification of the group's CGUs and tested the operation of the group's controls over the impairment assessment process, which we found to be satisfactory for the purposes of our audit. Our audit procedures included challenging management on the appropriateness of the impairment model and reasonableness of

Goodwill and indefinite-lived intangible assets must be tested for impairment on at least an annual basis. The determination of recoverable amount, being the higher of value-in-use and fair value less costs to dispose, requires judgement on the part of management in both identifying and then valuing the relevant CGUs. Recoverable amounts are based on management's view of variables and market conditions such as future price and volume growth rates, the timing of future operating expenditure, and the most appropriate discount and long term growth rates. With challenging trading conditions in certain territories, the group's performance and prospects have been impacted. As a result, impairment charges have been recognised in the year ended 30 June 2016. A pre-tax impairment charge of £118 million was recognised in respect of the Ypioca brand intangible and Paraguay, Uruguay and Brazil ('PUB') CGU goodwill. In addition, CGUs containing the USL goodwill, Greater China goodwill and Meta brand have been determined by management to be sensitive to reasonably possible changes in the assumptions used, which could result in the calculated recoverable amount being lower than the carrying value of the CGU. Additional sensitivity disclosures have been included in the group financial statements in respect of these CGUs.

Taxation matters

The group operates across a large number of jurisdictions and is subject to periodic challenges by local tax authorities on a range of tax matters during the normal course of business, including transfer pricing, direct and indirect taxes, and transaction related tax matters.

As at 30 June 2016, the group has current taxes payable of £340 million, deferred tax assets of £298 million and deferred tax liabilities of £1,982 million. Where the amount of tax payable is uncertain, the group establishes provisions based on management's judgement of the probable amount of the liability. The group has also undertaken a number of disposal transactions during the year which has resulted in a net exceptional tax charge of £56 million. We focused on the judgements made by management in assessing the quantification and likelihood of potentially material exposures and therefore the level of provision required. In particular we focused on the impact of changes in local tax regulations and ongoing inspections by local tax authorities, which could materially impact the amounts recorded in the group financial statements.

Presentation of exceptional items, including business disposals

In the past few years the group has had significant levels of exceptional items that are disclosed separately within the consolidated income statement and are excluded from management's reporting of the underlying results of the business. The nature of these exceptional items is explained within the group accounting policy and includes restructuring costs, gains or losses arising on acquisitions or disposals, impairment charges or reversals, and costs resulting from non-recurring legal or regulatory matters. This year the group has identified £167 million of net operating exceptional costs and £123 million of non-operating exceptional income before tax, which relate primarily to:

- impairment charges (£118 million);
- the gain on sale of the group's shareholdings in D&G (Jamaican Red Stripe business) and GAPL (Singapore and Malaysia beer business) (£457 million); and
- the loss on sale of the group's wine interests in the United States and UK (Percy Fox) (£191 million).

Our specific area of focus was to assess whether the items identified by management as exceptional met the definition of the group's accounting policy and have been treated consistently, as the identification of such items requires judgement by management. Consistency in the identification and presentation of these items is important to ensure comparability of year-on-year reporting.

Provisions and contingent liabilities

The group faces a number of threatened and actual legal and regulatory cases. There is a high level of judgement required in

the assumptions used, with particular attention paid to Ypioca, USL,

Greater China and Meta, through performing the following:

- benchmarking Diageo's key market-related assumptions in the models, including discount rates, long term growth rates and foreign exchange rates, against external data, using our valuation expertise;
- assessing the reliability of cash flow forecasts through a review of actual past performance and comparison to previous forecasts;
- testing the mathematical accuracy and performing sensitivity analyses of the models;
- understanding the commercial prospects of the assets, and where possible comparison of assumptions with external data sources; and
- for USL, assessing the reasonableness of assumptions compared to the original fair value model and performance since acquisition. We assessed the appropriateness and completeness of the related disclosures in note 4 and note 10 of the group financial statements, including the sensitivities provided with respect to USL, Greater China and Meta, and considered these reasonable. Based on our procedures, we noted no material exceptions and considered management's key assumptions to be within reasonable ranges.

We evaluated the design and implementation of controls in respect of identifying uncertain tax positions, which we found to be satisfactory for the purposes of our audit. We also evaluated the related accounting policy for provisioning for tax exposure and found it to be appropriate. We used our tax specialists to gain an understanding of the current status of tax assessments and investigations and to monitor developments in ongoing disputes. We read recent rulings and correspondence with local tax authorities, as well as external advice received by the group where relevant, to satisfy ourselves that the tax provisions had been appropriately recorded or adjusted to reflect the latest external developments. We challenged management's key assumptions, in particular on cases where there had been significant developments with tax authorities, noting no significant deviations from our expectations. We assessed the appropriateness of the related disclosures in note 7 and note 18 of the group financial statements, and considered these reasonable.

We evaluated the design and implementation of controls in respect of exceptional items, which we found to be satisfactory for the purposes of our audit. We considered the judgements within management's accounting papers for the business disposals and other one-off transactions, and obtained corroborative evidence for the items presented within 'exceptional items'. This included the timing of recognition and nature of costs associated with the business disposals. We considered these reasonable.

We challenged management's rationale for the designation of certain items as 'exceptional' and assessed such items against the group's accounting policy.

For the disposal transactions, we read underlying contractual and other agreements and verified that the accounting papers, and associated calculations prepared by management, reflected the substance of these. We also vouched the receipt of net proceeds received, where applicable. No material exceptions were identified.

We assessed the appropriateness and completeness of the disclosures in note 4 and other related notes of the group financial statements, and checked that these reflected the output of management's accounting papers, noting no significant deviations from our expectations.

We also considered whether there were items that were recorded within underlying profit that we determined to be 'exceptional' in nature and should have been included within 'exceptional items'. No such material items were identified.

We evaluated the design and implementation of controls in respect of litigation and regulatory procedures, which we found to be satisfactory for the purposes of our audit.

estimating the level of provisioning and/or the level of disclosure required.

Our procedures included the following:

- where relevant, reading external legal advice obtained by management;
- discussing open matters and developments with the group general counsel and regional general counsel;
- meeting with regional and local management and reading subsequent correspondence;
- assessing and challenging management's conclusions through understanding precedents set in similar cases; and
- circularising relevant third party legal representatives and follow up discussions, where appropriate, on certain material cases.

Based on the evidence obtained, whilst noting the inherent uncertainty with such legal and regulatory matters, we determined that the level of provisioning at 30 June 2016 to be appropriate. We assessed the appropriateness of the related disclosures in note 14(d) and note 18 of the group financial statements, and believed these to be reasonable.

Post-employment benefit obligations

The group has approximately 40 defined benefit post-employment plans. The total present value of obligations is £9,447 million at 30 June 2016, which is significant in the context of the overall balance sheet of the group. The group's most significant plans are in the United Kingdom, Ireland and North America. The valuation of pension plan liabilities requires judgement in determining appropriate assumptions such as salary increase, mortality rates, discount rates, inflation levels and the impact of any changes in individual pension plans. Movements in these assumptions can have a material impact on the determination of the liability. Management uses external actuaries to assist in determining these assumptions.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the geographic structure of the group, the accounting processes and controls, and the industry in which the group operates.

The group operates as 21 geographically based markets across five regions, and the supply and the corporate functions. These markets report through a significant number of individual reporting components, which are supported by the group's four principal shared service centres in Hungary, Kenya, Colombia and the Philippines. The outputs from these shared service centres are included in the financial information of the reporting components they service, and therefore are not separate reporting components. In establishing the overall approach to the group audit, we determined the type of work that needed to be performed at reporting components by us, as the group engagement team, or component auditors from either other PwC network firms or non-PwC firms operating under our instruction. This included consideration of the procedures required to be performed by our audit teams at the group's shared service centres to support our component auditors.

We identified three reporting components which, in our view, required an audit of their complete financial information, due to their financial significance to the group. Those reporting components were North America, USL and the supply operations in Scotland. A further 13 reporting components had an audit of their complete financial information, either due to their size or their risk characteristics, which included operating (six) and treasury (four) reporting components. We audited specific balances and transactions at a further seven reporting components, including the financial information of Moët Hennessy, the group's principal associate, primarily to ensure appropriate audit coverage. The work performed at each of the four shared services centres, including testing of transaction processing and controls, supported the financial information of the reporting components they serve. Certain specific audit procedures over central corporate functions and areas of significant judgement, including goodwill and intangible assets, taxation, and material provisions and contingent liabilities, were performed at the group's head office. We also

We evaluated the design and implementation of controls in respect of post-employment benefit obligations, which we found to be satisfactory for the purposes of our audit.

We used our actuarial specialists to assess whether the assumptions used in calculating the liabilities for the United Kingdom, Ireland and North America pension plans were reasonable, by performing the following:

- assessing whether salary increases and mortality rate assumptions, were consistent with the specifics of each plan and, where applicable, with relevant national and industry benchmarks;
- verifying that the discount and inflation rates used were consistent with our internally developed benchmarks and in line with other companies' recent external reporting; and
- reviewing the calculations prepared by external actuaries to assess the consistency of the assumptions used.

Based on our procedures, we noted no exceptions and considered management's key assumptions to be within reasonable ranges. Together, the central and component locations at which work was performed by the group engagement team and component auditors accounted for 74% of consolidated net sales, 85% of the consolidated total assets, and 63% of the consolidated profit before tax and exceptional items, with work performed by the group engagement team over exceptional items contributing a further 6% coverage over the consolidated profit before tax (total of 69%). At the group level, we also carried out analytical and other procedures on the reporting components not covered by the procedures described above. Where the work was performed by component auditors, including by our shared service centre auditors, we determined the level of involvement we needed to have in the audit work at those locations to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the group financial statements as a whole. We issued formal, written instructions to component auditors setting out the work to be performed by each of them and maintained regular communication throughout the audit cycle. These interactions included attending component clearance meetings and holding regular conference calls, as well as reviewing and assessing matters reported. Senior members of the group engagement team also visited all component locations in scope for an audit of their complete financial information, as well as three of the shared centre locations and two of the countries where audits of specific balances and transactions took place, and met with the Moët Hennessy audit team. These visits included meetings with local management and with the component auditors, as well as certain operating site tours. The group engagement partners also attended the year-end clearance meetings for North America, USL and Scotland, and the group engagement team reviewed the audit working papers for these components.

performed work centrally on systems and IT general controls, consolidation journals and the disposal transactions undertaken by the group during the year.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

Overall group materiality £140 million.

How we determined it:

5% of profit before taxation and exceptional items (as defined in note 4 to the group financial statements).

Rationale for benchmark applied:

We consider an adjusted measure to be one of the principal considerations for the members of Diageo plc in assessing the recurring financial performance of the group as it best represents results from underlying operations.

Component materiality:

For each component in our audit scope, we allocated a materiality that was less than our overall group materiality. The range of materiality allocated across components was between £7 million and £100 million.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £7 million as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

Going concern

Under the Listing Rules we are required to review the directors' statement, set out on page 61, in relation to going concern. We have nothing to report having performed our review. Under ISAs (UK & Ireland) we are required to report to you if we have anything material to add or to draw attention to in relation to the directors' statement about whether they considered it appropriate to adopt the going concern basis in preparing the financial statements. We have nothing material to add or to draw attention to. As noted in the directors' statement, the directors have concluded that it is appropriate to adopt the going concern basis in preparing the financial statements. The going concern basis presumes that the group and parent company have adequate resources to remain in operation, and that the directors intend them to do so, for at least one year from the date the financial statements were signed. As part of our audit we have concluded that the directors' use of the going concern basis is appropriate. However, because not all future events or conditions can be predicted, these statements are not a guarantee as to the group's and parent company's ability to continue as a going concern.

OTHER REQUIRED REPORTING

Consistency of other information

Companies Act 2006 opinion

In our opinion, the information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements.

Adequacy of accounting records and information and explanations received

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the company, or returns adequate for our audit have not been received from branches not visited by us; or

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and on the financial statements as a whole.

ISAs (UK & Ireland) reporting

Under ISAs (UK & Ireland) we are required to report to you if, in our opinion:

- information in the Annual Report is: —materially inconsistent with the information in the audited financial statements; or —apparently materially incorrect based on, or materially inconsistent with, our knowledge of the group and company acquired in the course of performing our audit; or —otherwise misleading. the statement given by the directors on page 61, in accordance with provision C.1.1 of the UK Corporate Governance Code (the "Code"), that they consider the Annual Report taken as a whole to be fair, balanced and understandable and provides the information necessary for members to assess the group's and company's position and performance, business model and strategy is materially inconsistent with our knowledge of the group and company acquired in the course of performing our audit.

The directors' assessment of the prospects of the group and of the principal risks that would threaten the solvency or liquidity of the group

Under ISAs (UK & Ireland) we are required to report to you if we have anything material to add or to draw attention to in relation to:

- the directors' confirmation on page 60 of the Annual Report, in accordance with provision C.2.1 of the Code, that they have carried out a robust assessment of the principal risks facing the group, including those that would threaten its business model, future performance, solvency or liquidity. We have nothing material to add or to draw attention to.
- the disclosures in the Annual Report that describe those risks and explain how they are being managed or mitigated. We have nothing material to add or to draw attention to.
- the directors' explanation on page 19 of the Annual Report, in accordance with provision C.2.2 of the Code, as to how they have assessed the prospects of the group, over what period they have done so and why they consider that period to be appropriate, and their statement as to whether they have a reasonable expectation that the group will be able to continue in operation and meet its liabilities as they fall due over the period of their assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions. We have nothing material to add or to draw attention to.

What an audit of financial statements involves

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of:

- whether the accounting policies are appropriate to the group's and the company's circumstances and have been consistently applied and adequately disclosed;
- the reasonableness of significant accounting estimates made by the directors; and

- the company financial statements and the part of the Directors' remuneration report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

- the overall presentation of the financial statements.

We primarily focus our work in these areas by assessing the directors' judgements against available evidence, forming our own judgements, and evaluating the disclosures in the financial statements.

We test and examine information, using sampling and other auditing techniques, to the extent we consider necessary to provide a reasonable basis for us to draw conclusions. We obtain audit evidence through testing the effectiveness of controls, substantive procedures or a combination of both.

In addition, we read all the financial and non-financial information in the Annual Report to identify material inconsistencies with the audited financial statements and to identify any information that is apparently materially incorrect based on, or materially inconsistent with, the knowledge acquired by us in the course of performing the audit. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

Ian Chambers (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
27 July 2016

Directors' remuneration

Directors' remuneration report – Companies Act 2006 opinion

In our opinion, the part of the Directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

Other Companies Act 2006 reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion, certain disclosures of directors' remuneration specified by law are not made. We have no exceptions to report arising from this responsibility.

Corporate governance statement

Under the Listing Rules we are required to review the part of the Corporate Governance Statement relating to ten further provisions of the Code. We have nothing to report having performed our review.

RESPONSIBILITIES FOR THE FINANCIAL STATEMENTS AND THE AUDIT

Our responsibilities and those of the directors

As explained more fully in the Responsibility statement, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and ISAs (UK & Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors