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**THE EFFECTS OF KEY AUDIT MATTERS AND AUDIT MATERIALITY  
DISCLOSURES ON AUDITORS' AND INVESTORS' FAIR VALUE RELATED  
JUDGMENTS AND DECISIONS**

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By  
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A Dissertation Submitted in Fulfilment of the Requirements for the Degree of Doctor of  
Philosophy (Accounting)

Adelaide Business School  
The University of Adelaide

June 2022

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## DECLARATION

I certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name, in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name, for any other degree or diploma in any university or other tertiary institution without the prior approval of the University of Adelaide and where applicable, any partner institution responsible for the joint-award of this degree.

I give permission for the digital version of my thesis to be made available on the web, via the University's digital research repository, the Library Search and also through web search engines, unless permission has been granted by the University to restrict access for a period of time.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

Signature

Date: 12/04/2022

## **DEDICATION**

I dedicate this thesis to my parents and my daughter Linda for their unconditional love, encouragement, and support.

## ACKNOWLEDGEMENTS

Undertaking this PhD has been an adventure and a truly life-changing experience for me and it would not have been possible to do without the support that I received from many people.

I thank my parents and my daughter for their tremendous understanding and support during the past few years. I also would like to offer my special thanks to Steve for his unwavering support and believe in me.

I would like to express my deepest gratitude to my esteemed supervisors, Professor Paul Coram and Professor Indrit Troshani for always being there when I needed their support, reviewing my progress constantly, and guiding me through my studies. Without their constant support and guidance, this PhD would not have been achievable. I am grateful to Paul for accepting me into the doctoral program and his invaluable supervision, support and encouragement through all stages of my PhD journey. I am also grateful to Indrit for continuously supporting, encouraging and reassuring me through my PhD. It has been such a pleasure and honour to learn from and work with Paul and Indrit.

Many thanks to Kent Trotman and Karla Zehms for their insightful and constructive comments on the studies of my dissertation. I also appreciate valuable comments and suggestions received from Christine Gimbar, Noel Harding, Robert Knechel, Gary Monroe, Robyn Moroney, Soon-Yeow Phang, Hien Hoang, Pujawati (Estha) Gondowijoyo, and conference participants at The University of Adelaide, The University of Melbourne as well as conference participants at the 2020 Auditing Section Midyear Meeting, AFAANZ 2021 Doctoral Forum, and the workshop participants at the AWE 2022.

I greatly appreciate the financial support from The University of Adelaide for completing my degree. I also gratefully acknowledge research funding provided by the Adelaide Business School.

Finally, my appreciation goes out to my fellow HDR students, the support staff and my friends in Adelaide for their kindness and support all through my studies.



## ABSTRACT

The audit reporting model has undergone significant changes to now include additional audit disclosures. Key Audit Matters (KAMs) and audit materiality are two important additional disclosures among these. My PhD dissertation consists of three independent, but closely related experimental studies on effects of these disclosures. The research designs employed focus on fair value estimates, one of the most significant areas of accounting information suggested as a potential reporting issue for KAMs by standard setters.

Study One examines how the KAMs disclosures and management disclosures in the financial statement footnotes affect auditors' perceptions of their accountability to users of financial statements and their fair value decisions. I find that auditors believe that they are less accountable when they have the opportunity to report on the fair value estimates in KAMs disclosures or when management has provided fair value related footnotes. Drawing on discounting and augmentation principles from psychology research, I also find that when both KAMs and footnotes are reported concurrently, auditors behave more conservatively by requiring greater fair value adjustments.

Study Two investigates the impact of audit materiality and management uncertainty disclosures on auditor perceptions of accountability and fair value decisions. Drawing on discounting and augmentation principles, I expect that auditors' perceived accountability and their tendency to require fair value adjustments would be affected by these two types of disclosures. I find that auditors feel more accountable and are more likely to require their client to correct detected fair value misstatements when audit materiality and uncertainty disclosures are provided concurrently. I also find that these disclosures interactively increase auditors' tendency to disclose a fair value issue as a KAM.

Finally, taking a user's perspective, Study Three investigates the impact of additional audit disclosures, such as KAMs and audit materiality, on investors' investment risk perceptions, confidence and willingness to invest. I predict and find that investors perceive heightened investment risk due to KAM disclosures, but that disclosing audit materiality information reduces this effect. I also find that these two disclosure types can increase investor confidence that there are no material misstatements. Further, I find evidence that these disclosures interactively affect nonprofessional investors' investment decisions, and this interaction effect is fully mediated by investors' perceptions of misstatement risks.

Overall, these three studies provide empirical evidence concerning the ways in which auditors' and users' judgments and decisions may be influenced by the new audit disclosures. The findings offer important insights for regulators and standard setters in implementing and improving standards, as well as for practitioners for evaluation and compliance purposes.

**Keywords:** KAM; Audit Materiality; Fair Value Uncertainty; Additional Audit Disclosures; Investors; Accountability; Fair Value Adjustments; Risk Perceptions

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

There have been significant changes to the traditional audit reporting model in recent years with the inclusion of additional audit disclosures (e.g., Gold and Heilmann 2019; Bédard, Coram, Espahbodi, and Mock 2016; Mock, Bédard, Coram, Davis, Espahbodi, and Warne 2013). Regulators and standard setters in major financial reporting regimes have mandated the implementation of Key Audit Matters (KAMs) (under the International Auditing and Assurance Standards Board (IAASB)) or Critical Audit Matters (CAMs) (under the Public Company Accounting Oversight Board (PCAOB)) disclosures in the audit report.<sup>1</sup> Meanwhile, standard setters in the United Kingdom (UK) and the Netherlands have also required auditors to incorporate audit materiality disclosures as part of the enhanced audit report (FRC 2013; NBA 2014). The primary purpose of these new audit disclosure requirements is to address the needs of financial statement users by improving the informational nature of the audit report (e.g., FRC 2013; 2016; 2017; IAASB 2015b; Mock et al. 2013; PCAOB 2017).

Early research on KAM disclosures mainly focuses on the potential impact of KAMs on jury's perceived legal liability of auditors (e.g., Brasel, Doxey, Grenier, and Reffett 2016; Gimbar, Hansen, and Ozlanski 2016; Kachelmeier, Rimkus, Schmidt, and Valentine 2020). Another line of research looks at market reactions due to KAM disclosures (e.g., Bédard, Gonthier-Besacier, and Schatt 2018; Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2018; Lennox, Schmidt, Thompson 2018). However, there is limited research that examines the

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<sup>1</sup> CAM and KAM disclosures are considered to be similar audit disclosures by the IAASB and PCAOB (e.g., IAASB 2016; PCAOB 2017). I use research settings that are common under both IAASB and PCAOB. Therefore, the differences of these two disclosures are out of the scope of this study.

impact of KAM requirements on auditors (Asbahr and Ruhnke 2019). Despite a few stock market studies of additional disclosures (e.g., Gutierrez et al. 2018), research on audit materiality disclosures remains limited. Furthermore, research is inconclusive as to whether and how materiality disclosures can be useful for investors' evaluation of financial information.

This dissertation expands the current understanding of additional audit disclosures, especially KAM and materiality disclosures on auditors' and nonprofessional investors' judgments and decisions. In three separate studies, this dissertation documents behavioural implications of these disclosures in the context of a fair value financial reporting issue, under which audit disclosures are intended to provide additional information to serve user judgments and decisions (e.g., IAASB 2015b).

## **1.2 Studies in the Dissertation**

This dissertation is comprised of three experimental studies that examine the behavioural impact of additional audit disclosures and management footnote disclosures on auditors' and nonprofessional investors' judgments and decisions. While the studies are closely interrelated, they are presented in the dissertation as research papers that can be read independently in their own right. This section briefly discusses these studies, how they complement each other, and the broader implications to research, practice and policy making.

Despite there being some differences relating to specific wording and placement between IAASB and PCAOB standards on the additional audit disclosures (see IAASB 2016 for details), CAMs and KAMs are considered to be substantially the same by the IAASB and PCAOB (e.g., IAASB 2016; PCAOB 2017). In these three studies, I use significant fair value issues, which is an area that is recommended for consideration of KAM/CAM disclosures under both IAASB and PCAOB (IAASB 2015b; PCAOB 2017).

To match the individual research context of each study, CAM and KAM are used separately. Specifically, KAM was used for Study One, because the study uses Australian auditors in the Australian auditing environment. For Study Two and Study Three, CAM was used to match with the United States (US) auditing and investing contexts. In the introductory and concluding discussions of this thesis, KAM is used to describe these additional audit disclosures to avoid confusion in reporting the objectives and results of this research.

Study One examines the impact of audit and management disclosures from the auditor's perspective. Specifically, Study One focuses on the effect of KAM disclosure requirements and management uncertainty footnotes on auditors' accountability perceptions and fair value audit decisions. Using a sample of 50 senior Australian practising auditors, Study One provides evidence on auditors' judgment processes under the current requirements of disclosing KAMs, along with related management disclosures surrounding a significant fair value estimate.

Drawing on the discounting and augmentation principles of psychology research, Study One finds that auditors perceive lower levels of accountability in their evaluation of the reasonableness of financial reports when they are required to disclose KAMs, or when management disclose fair value uncertainty footnotes. Despite reduced accountability perceptions, Study One finds that auditors propose greater fair value adjustments in relation to detected fair value misstatements when KAM requirements and uncertainty disclosures are provided concurrently.

Another important change to the audit reporting model in some jurisdictions is the requirement to provide audit materiality disclosures (FRC 2013). As an overarching materiality judgment, the quantitative audit materiality information reflects auditors' considerations of the nature and extent of an audit to determine and ensure the reasonableness of financial reports. Audit materiality information is particularly relevant in fair value settings, in the evaluation of

material misstatements and the need for adjustments. In addition, auditors are required to exercise materiality judgments when making KAM decisions according to audit standards (e.g., IAASB 2015b; PCAOB 2017). In this context, Study Two examines the impact of audit materiality disclosures and management fair value footnote disclosures on auditors' judgment and decisions, under the current reporting environment where KAM disclosures are required.

Study Two uses a sample of 43 US auditors who participated in an experiment. Consistent with discounting and augmentation principles, Study Two finds that materiality and uncertainty disclosures interactively affect auditors' accountability and fair value decisions. Specifically, auditors feel more accountable and are more likely to require their clients to make fair value adjustments when audit materiality disclosures are required and management have provided uncertainty disclosures with regard to significant fair value estimates. In addition, Study Two demonstrates that these two disclosures also interact to increase auditors' tendency to disclose significant fair value issues as KAMs. Collectively, the findings of Study Two reveal that the disclosure requirement for audit materiality information may change auditors' materiality judgments of fair value estimates and KAM disclosure decisions when management footnotes highlight the significant uncertainty of those measures. These findings may be useful for regulators and standard setting bodies when evaluating and considering the benefits of requiring audit materiality disclosures (IAASB 2015a, 2015c; PCAOB 2017).

Audit-specific information, such as materiality considerations and KAMs, is expected to enrich the information environment for financial statement users (Mock et al. 2013). A natural question then follows: whether and how this information might be useful for users? Study Three examines this question by focusing on the effect of auditors' additional disclosures, especially materiality and KAM disclosures on nonprofessional investors' risk perceptions. Using a sample of 157 nonprofessional investors in the US, Study Three predicts and finds that nonprofessional investors perceive heightened investment risk of a company's common stock

due to KAM disclosures, but this increased perception of investment risk can be alleviated when investors are provided with audit materiality disclosures.

Study Three also shows that these two audit disclosures affect nonprofessional investors' perceptions of material misstatement risk of a company's financial reporting. Specifically, Study Three finds a substitution effect between the two disclosures on perceptions of material misstatement risks, such that either of these disclosures can increase nonprofessional investors' confidence that there are no material misstatements. Lastly, additional analyses illustrate that these disclosures interactively increase investors' tendency to invest in a company. This interaction effect is mediated by investors' confidence in there being no material misstatements. Collectively, the findings of Study Three provide evidence that this additional audit information can be useful for investors' judgments and decisions.

Taken together, the portfolio of studies in this dissertation shows the behavioural impacts of the new audit reporting requirements on auditors' and nonprofessional investors' judgments and decisions. The findings indicate that there may be unintended consequences that arise due to disclosing audit specific information for auditors, in that the effects of additional audit disclosures may interact with the effect of existing management disclosures to change auditors' accountability perceptions and fair value decisions. The findings also show that audit disclosures can facilitate nonprofessional investors' risk assessments of financial statements, and influence their subsequent investment decisions.

These studies provide a number of important contributions. Study One contributes to current accounting research on KAMs from the disclosure preparers' perspective. This research presents evidence of the behavioural impact of KAMs and management supplemental disclosures on senior auditors' judgments and decisions. First, there is evidence that perceptions of their accountability in ensuring the reasonableness of financial reports are

reduced as a result of KAMs, or from management disclosures on fair value estimates. Second, auditors' adjustment decisions are more conservative when *both* KAMs and management disclosures are provided. These findings offer insights to financial reporting stakeholders including regulators, standard setters, audit practitioners and the investing community about improved audit outcomes of fair value estimates, and may assuage concerns over potentially impaired audit quality due to KAM disclosures (Asbahr and Ruhnke 2019).

Study Two adds to accounting research and practice by evaluating the potential effect of materiality and uncertainty disclosures on auditors' fair value judgments and decisions. Specifically, Study Two predicts and finds that these disclosures can interactively affect auditors' accountability perceptions and fair value adjustment decisions by increasing their perceived accountability of the reasonableness of financial reports and increasing the tendency to require fair value adjustments. Study Two provides implications for audit firms, standard setters and regulators about the potential behavioural impacts of incorporating materiality disclosures into the audit reporting model.

Finally, Study Three takes a different perspective in informing research and practice about the effects of additional disclosures on users' judgments and decisions. Study Three adds to extant research by providing evidence of how the new audit disclosures may be used to affect nonprofessional investors' judgments. The findings show that audit materiality and KAM disclosures can interactively affect users' risk assessments of a reporting entity and enhance users' confidence in there being no material misstatements. The findings indicate that audit disclosures may influence investment decisions, as these disclosures are being incorporated into investors' risk assessment processes and could influence their final decisions. These findings have implications for regulators and standard setters when evaluating and revising disclosure requirements in the future (e.g., PCAOB 2017).

### **1.3 Dissertation Structure**

The remainder of the dissertation is organised as follows. Chapter 2 presents Study One reporting the results of an experiment using KAM and uncertainty disclosures on auditors' accountability perceptions and fair value decisions. Chapter 3 presents Study Two providing the results of an experiment using audit materiality and management uncertainty disclosures on auditors' judgment and decisions. Chapter 4 reports on Study Three about the impact of audit materiality and KAM disclosures on nonprofessional investors' risk assessments. Lastly, Chapter 5 concludes the dissertation and provides a summary of findings, contributions, and limitations of the research.



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## CHAPTER TWO – STUDY ONE

### AUTHORSHIP DETAILS

## Statement of Authorship

Title of Paper	The Effect of Key Audit Matters and Uncertainty Disclosures on Auditors' Accountability Perceptions and Fair Value Decisions
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input checked="" type="checkbox"/> Submitted for Publication <input type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style
Publication Details	<ul style="list-style-type: none"> <li>- Presented at American Accounting Association Midyear Meeting 2020</li> <li>- Presented at Experimental Accounting Workshop 2019 at The University of Melbourne</li> <li>- Presented at Accounting Discipline Research Day 2018 at The University of Adelaide</li> <li>- Currently submitted at a leading accounting journal</li> </ul>

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Overall percentage (%)	70
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.
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Date	29 March 2022

### Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

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# The Effect of Key Audit Matters and Uncertainty Disclosures on Auditors' Accountability Perceptions and Fair Value Decisions

## ABSTRACT

We investigate how the mandated disclosure of Key Audit Matters (KAMs) and related management disclosures in financial statement footnotes affect auditors' perceptions of their accountability and their subsequent fair value decisions. We find a substitution effect between KAMs disclosures and footnotes, in that auditors believe that they are less accountable either when they have the opportunity to report on the fair value estimates in KAMs disclosures or when management has provided expanded fair value related footnotes. However, despite the lower perceived accountability resulting from either of these disclosures, we find that when both KAMs and expanded footnotes are reported concurrently, auditors require greater fair value adjustments. Overall, our results show that the requirement to disclose KAMs does make a difference on auditors' perceptions of accountability and their adjustment decisions.

**Keywords:** accountability; key audit matters; fair value decisions; audit report; disclosure; measurement uncertainty.

## 2.1 Introduction

Key Audit Matters (KAMs under the International Auditing and Assurance Standards Board (IAASB)) or Critical Audit Matters (CAMs under the Public Company Accounting Oversight Board (PCAOB)) are now required in audit reports to improve audit transparency. Additional audit disclosures have generally been welcomed by financial statement users (CAQ 2013; PCAOB 2017) and evidence already demonstrates that KAMs inform users' decisions (Christensen, Glover, and Wolfe 2014; Kelton and Montague 2018; Sirois, Bédard, and Bera 2018). This paper extends the emergent (but limited) stream of research concerning the implications of the requirement to disclose KAMs on auditor responses and behaviour (Bédard, Coram, Espahbodi and Mock 2016; Gold and Heilmann 2019).<sup>2</sup> Comprised of few archival and experimental studies, this research has examined the effects of expanded audit reports (with KAMs) on audit outcomes, though it has yet to establish a clear understanding of the nature of

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<sup>2</sup> Other streams of KAMs research include studies looking at market and investor reactions, auditor liability, and client management responses (for review see, Gold and Heilmann 2019).

these relationships. Although KAMs were implemented to help better inform users, auditors are the key stakeholders in this reporting process. It is therefore important to understand if these changes have real consequences to the auditing process beyond the act of disclosing KAMs *per se*. Our study aims to improve the understanding of the implications of KAM disclosures on some key behaviours and responsibilities, namely auditors' accountability judgments as well as their adjustment decisions, by using an experiment.

We define auditor accountability as the implicit or explicit expectation for auditors to provide reasons to the users of financial statements explaining and justifying what they have done (or not done) in relation to audit engagements (Bovens 2007; Hurley, Mayhew, and Obermire 2019; Lerner and Tetlock 1999). Users of financial statements include investors, regulators, creditors, client management and the audit profession (Hurley et al. 2019; Johnstone, Warfield, and Sutton 2001), while audit performance includes audit judgment processes and decisions (Peecher, Solomon, and Trotman 2013). We argue that, similar to other audit standards (as summarised in ISA 200), KAMs constitute a source of accountability for auditors (Peecher et al. 2013).<sup>3</sup> Auditors may be held accountable for adverse financial statement outcomes following particular audit outcomes. KAMs are defined as matters that “were of most significance in the audit of the financial statements” (ISA 701, para. 10). Therefore, if subsequent evidence suggests there are material misstatements in financial statements after an unqualified audit opinion, it may lead regulators and third parties to reasonably infer that auditors have not fulfilled their fiduciary duty. Conversely, when KAMs are disclosed in these circumstances, it provides evidence that they have discharged their fiduciary responsibility in relation to the misstatement and this may potentially reduce their accountability, which is consistent with moral licensing (Bauer, Bucaro, and Estep 2020; Griffin 2014; Jamal 2012).

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<sup>3</sup> Other sources of auditor accountability include regulator inspections, negligence liability, regulator sanctions and fines, and strict liability (Peecher et al. 2013).

This also reduces the risk that auditors are a target for penalties such as fines, punitive damages or revocation of license, and a study of jurors confirmed this expectation (Brasel, Doxey, Grenier, and Reffett 2016). Our first hypothesis therefore tests whether auditors perceive a lower accountability to users of financial statements when there is a requirement to disclose KAMs in the audit report.

Disclosures concerning possible areas of risks may also be made by management. For example, footnotes to the financial statements constitute an important medium used by management to provide supplementary information to clarify or explain line items in the financial statements. While footnote disclosures are different to KAMs, the two types of disclosures may provide information to financial statement users concerning the same underlying risk areas. Where there is a management disclosure on a topic discussed in a KAM, it should be referred to in the KAM (ISA 701, para. 13). Situations such as this may have implications for auditor responses, including their accountability perceptions and behaviour. For example, Griffin (2014) finds in his experiment that consistent with moral licensing, auditors tolerate greater potential misstatements when clients provide uncertainty disclosures in financial statement footnotes due to moral licensing, which could also suggest that footnote disclosures affect auditor accountability, which was not tested in his study. Our second hypothesis tests whether disclosure of an expanded management footnote reduces auditor's perceived accountability to users of financial statements.

While the first two hypotheses deal with judgments on accountability perceptions in response to disclosures, this final hypothesis relates to a more direct outcome on auditor behavior, which is the decision on whether to require adjustments to the financial statements. We argue that this may be affected due to an interaction effect when KAMs and footnote disclosures are provided to users concurrently. That is, the manner in which these disclosures affect auditor responses when they are *both* provided may be different to when either disclosure

is provided but the other is not. Extant KAMs literature is limited about the possible interaction between the effects of these different disclosure types and how they might affect auditor responses.<sup>4</sup> We draw on theory from psychology relating to discounting and augmentation principles that frames our expectations for this third hypothesis (Kelley 1971). That is, when there are disclosures by management, auditors may perceive that users discount their role. Therefore, a potential response from auditors is augmentation, where they act in ways to enhance their own disclosure. The other main lever that is available to do this is by increasing their adjustment decision; that is, by taking a more conservative position (Jamal 2012). The third hypothesis tests this interaction. When there is an uncertainty footnote disclosure by management, and the requirement of KAM disclosures, do auditors propose more conservative fair value decisions? We seek to address this question by looking at disclosures of fair value estimates and related auditor responses in terms of their requirements to adjust the financial statements.

We argue that disclosures associated with fair value is an ideal issue to use in our research. Fair value estimates are difficult to assess because fair value decisions and reporting are based on judgment and estimation uncertainty, management discretion and a large number of variables which make estimation highly complex. Fair value estimation is thus widely acknowledged in audit practice and research as a risk area, and as such, a common subject of both KAMs and footnote disclosures.

Using 50 auditors (70 percent being partners or directors) in Australia, we conduct a 2 × 2 between-subjects experiment. The design first includes manipulation of KAMs at two levels: one that requires the addition of KAMs (as required by ISA 701<sup>5</sup>) and one where KAMs are

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<sup>4</sup> We note that one relevant study, Dennis, Griffin, and Zehms (2019) examines the interaction effect of CAM and management disclosures on investors' valuation judgments.

<sup>5</sup> We generally refer to the international auditing standards. However, the study was conducted in Australia where the relevant standard is ASA 701, which is an Australian Auditing Standard. This standard corresponds to, and is highly consistent with ISA 701.



not part of the reporting environment and therefore not an applicable disclosure option (similar to Asbahr and Ruhnke 2019). The second manipulation is of two levels of footnote disclosures by management, a standard footnote and an expanded footnote that provide uncertainty information. We then ask participants about their perceptions of accountability to users and their fair value decisions.

We find that auditors perceived less accountability towards users of financial statements under conditions when they are able to disclose KAMs, or when an expanded management footnote is provided in the financial statements. This finding is plausible under the lens of moral licensing theory. The finding suggests that when information regarding significant areas of risks is provided to users, either in the KAM disclosure in the audit report or in the management disclosure footnotes to the financial statements, auditors feel more confident that they are less likely to be held accountable for related issues that might be discovered in the financial statements.

However, we also find that management expanded footnote disclosures influence *auditors' decisions* when they are meeting the requirements of reporting KAMs (ISA 701). Consistent with discounting and augmentation principles (Kelley 1971), we find that auditors propose greater fair value adjustments under these circumstances. This finding suggests that, under the KAM disclosure regime, auditors respond to uncertainty disclosures in management footnotes by making more conservative audit decisions.

This study contributes to the extant literature in several ways. First, it reveals conditions under which the influence of auditors' KAMs disclosures and management footnote disclosures affect auditors' judgments and decisions. Specifically, auditors' KAMs disclosures and management footnote disclosures can be substitutes for each other in lowering auditors' accountability perceptions toward users.

Second, this study fills the gap in recent KAMs research, specifically extending the research stream concerning the effects of KAMs disclosures on auditor responses and behaviour. It provides evidence of the effects of KAMs on auditors' judgment decisions by using a participant group of experienced auditors who are predominantly the key audit reporting decision makers. Specifically, the study investigates how auditors' fair value decisions are affected by the KAM disclosure requirements. Our findings inform financial report users and standard setters about the ways in which auditors' fair value estimates are affected when they must consider disclosures of KAMs in audit reports. We find that when management expands the footnote disclosures and auditors are required to disclose KAMs, the effect on auditors' judgments is to react in a more conservative way consistent with discounting and augmentation (Kelley 1971).

Third, this study responds to the call for research concerning the unintended consequences of ISA 701 (Bédard et al. 2016), by illustrating the effects of auditors' KAMs disclosures on their judgments and decisions relating to the audit. The findings could inform regulators' and standard setters' understanding and confirm expectations in relation to the effects of the new audit standard, that is, ISA 701, by demonstrating that the application of the standard has real and important effects on the auditors' responses, including their judgments and decisions.

Finally, this study extends the broader research on disclosure effects (Griffin 2014; Kelton and Montague 2018) in determining how auditors' decisions may be affected by management supplemental disclosures. It demonstrates the effect of footnotes on an auditor's fair value decisions, illustrating how an auditor's judgment changes in response to uncertainty disclosure in the footnotes, depending on whether the audit report requires KAMs or not. It shows that by expanding auditor disclosures to require specific information about matters relating to the audit conducted, this makes a difference to auditors' perceptions and decisions.

The remainder of this paper is organised as follows. Section 2.2 reviews prior related research concerning accountability in audit, KAMs, management uncertainty footnote disclosures, and then develops the hypotheses. Section 2.3 describes the research method, design and data collection. Section 2.4 reports and explains the results, while section 2.5 concludes the paper.

## **2.2 Background and Hypotheses Development**

### *2.2.1 Key Audit Matters*

Persistent criticism of the limited usefulness of auditor reports has been attributed to the *information gap* between user expectations of financial statement audits and what is actually included in the audit report (e.g., Gold and Heilmann 2019; Hatherly, Brown, and Innes 1998; IAASB 2012; Manson and Zaman 2001; Mock et al. 2013). This situation has prompted standard setters and major regulators around the world to make amendments to the traditional, highly standardised, pass/fail audit reporting model.<sup>6</sup> A key amendment is the requirement to disclose client-specific areas of risks, called KAMs.<sup>7</sup> KAMs are communicated in a dedicated section of the auditor report and are intended to provide information that is specific to the client and audit engagement and enhance the informative nature, transparency, and overall usefulness of the audit report for financial statement users. This is a unique change, because historically changes to the audit report have been about providing more information to users about auditing, rather than specific details about the audit of the client that was conducted.

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<sup>6</sup> Key jurisdictions include the United States (PCAOB 2017), European Union (EU 2014), and the United Kingdom (FRC 2013).

<sup>7</sup> KAMs are defined in the ISA 701 Standard *Communicating Key Audit Matters in the Independent Auditor's Report* as “matters that, in the auditor’s professional judgment, were of most significance in the audit of the financial statements of the current period” (ISA 701, para. 10). ISA 701 became effective for financial statement audits of listed firms for the period ending on or after December 15<sup>th</sup>, 2016 (IAASB 2015a).

There has been a significant and growing amount of research on the effects of the disclosure of KAMs (for a review see Gold and Heilmann 2019). However, the vast majority of this research has been on investor behaviour and the market reaction to this information (Gold and Heilmann 2019). There is much more limited research on the effect on auditors from these additional disclosure requirements. Some recent archival studies have hypothesised that audit quality and fees would increase as a result of KAMs disclosures.<sup>8</sup> This is based on the premise that KAMs requirements are expected to heighten auditor accountability (e.g., Reid, Carcello, Li, Neal, and Francis 2019), leading auditors to respond with additional audit work focused on the risk areas disclosed in KAMs. The research on this has found mixed results. Two studies undertaken in the UK did not find an impact on audit quality or fees based on these changes (Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2018; Reid et al. 2019). Consistent with these findings a study in France, which has had expanded auditor reporting for a longer period of time (although not specifically KAMs), also did not find a market impact, audit quality or audit fee impact due to these disclosures (Bédard, Gonthier-Besacier, and Schatt 2019).<sup>9</sup>

In terms of looking at actual auditor behaviour, Asbahr and Ruhnke (2019) find in an experiment that auditors who disclose KAMs exhibit lower sceptical action through the probability of a potential adjustment than auditors in an environment where KAMs are not disclosed, which could be interpreted to suggest that KAMs requirements diminish auditor accountability.<sup>10</sup> Contrary to the expectations of standard setters (e.g., IAASB 2015), Asbahr and Ruhnke (2019)'s findings are indicative of possible unintended, adverse effects arising

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<sup>8</sup> Moroney, Phang, and Xiao (2021) demonstrate that KAM disclosures can improve investor perceptions of value and quality of audit for non-Big 4 audit firms, but do not change for those of audits conducted by Big-4 auditors.

<sup>9</sup> In contrast to these studies in the UK, in New Zealand Li, Hay, and Lau (2019) find improvement in audit quality and significant increases in audit fees due to new audit reporting requirements.

<sup>10</sup> Asbahr and Ruhnke (2019) argue that moral licensing effects operate when auditors identify matters that are significant to the audit as KAMs, but perceive that corresponding adjustments in the financial statements are less necessary.

from the requirement to disclose KAMs.<sup>11</sup> This present study contributes to this emerging stream of literature.

### 2.2.2 *Accountability in Audit*

For the purposes of financial statement audits, auditors are accountable for evaluating the reasonableness of financial information, as well as having the duty of care for ensuring sufficient disclosures are available for users of financial statements (IAASB 2009). Requirements for providing justifications are an important source of accountability pressure in the audit process. Evidence from the auditing literature recognises the benefit of accountability, such as mitigating heuristic judgment biases and motivating audit effort. Extant research suggests that accountability can often effectively improve audit performance (e.g., Lerner and Tetlock 1999; Tetlock and Lerner 1999), and overall audit quality (Hurley et al. 2019; Peecher et al. 2013).

Using theoretical models of social psychology, experimental research finds that high levels of accountability pressure serve to improve auditors' judgment performance (i.e., auditor consensus and conservative decisions), and to promote effort exertion (e.g., Asare, Trompeter, and Wright 2000; Ashton 1992; DeZoort, Harrison, and Taylor 2006; Johnson and Kaplan 1991; Koonce, Anderson, and Marchant 1995). For example, DeZoort et al. (2006) identify four different levels of accountability and associated pressure intensity levels from the lowest to the highest, namely: anonymity, review, justification, and feedback.<sup>12</sup> They find that high accountability pressure positively correlates to improved auditor materiality assessment

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<sup>11</sup> In an archival study, Sierra-García, Gambetta, García-Benau, and Orta-Pérez (2019) find that types and numbers of reported KAMs are associated with auditor and client specific characteristics.

<sup>12</sup> Anonymity refers to no explicit accountability pressure, where auditors do not identify themselves. Review means a general review process conducted by a supervisor. Justification is a review of audit judgment performance and related judgment reasoning. Feedback is the review of performance with supervisor's specific feedback (DeZoort et al. 2006).

performance at the audit planning stage through increased judgment conservatism and audit effort, and reduced judgment variation.

More recently, accountability research has distinguished between process accountability (i.e., requirement to justify process used to reach audit decision) and outcome accountability (i.e., requirement to justify final audit decision) (Peecher et al. 2013). This research has made important contributions in identifying some conditions where these types of accountabilities outperform each other.<sup>13</sup>

In the present paper, KAMs disclosures invoke outcome accountability; that is, due to the requirement for auditors to justify or explain the final audit judgment decision, rather than the processes used to reach a decision (Peecher et al. 2013). In the subsections that follow, we discuss the implications on auditor's accountability and fair value decisions due to KAMs and management uncertainty footnote disclosures when either or both of the disclosures are provided to users of financial statements. The discussions culminate with three hypotheses.

### 2.2.3 *KAMs Disclosures and Auditor Accountability*

This study extends existing research by exploring questions concerning how the requirement for providing KAMs disclosures in audit reports can potentially affect auditor responses, including accountability and audit judgments. KAMs disclosures includes those matters, which in an auditor's judgment, are significant in the financial statement audit. This type of disclosure provides specific information to users and therefore it is reasonable to assume that it would affect outcome accountability (Peecher et al. 2013).

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<sup>13</sup> For example, Kim and Trotman (2015) find that auditors show greater levels of professional scepticism when they are expected to justify judgment process rather than judgment outcomes. Similarly, Phang and Fargher (2019) find that auditors expected to justify judgment process (i.e., following process accountability) are less likely to be affected by prior commitment to an audit outcome (i.e., they can change, in response to subsequent events) than auditors who are expected to justify judgment outcome (i.e., follow outcome accountability). On the other hand, De Langhe, van Osselaer, and Wierenga (2011) find that participants who are accountable for outcomes outperform those accountable for processes when process accountability forces them to use ineffective processes.

Disclosing KAMs allows auditors to identify significant matters discovered during the audit; it empowers auditors to fulfil their fiduciary duty by providing justifications for audit procedures, and showing considerations applied to arrive at the audit decisions. Thus, the opportunity to disclose KAMs could be a means to alleviate auditors' pressure to account for the reasonableness of reporting that contains high uncertainty, but is nonetheless justifiable. Hence, it is reasonable to expect that by disclosing areas of risk as KAMs, auditors will perceive lower accountability toward users of financial statements. This would be consistent with the findings of Asbahr and Ruhnke (2019), who find reduced scepticism when KAMs are reported.

Auditors' diminished accountability under a KAMs regime is a possible, plausible outcome which may be explained by a moral licensing effect due to disclosing KAMs. Moral licensing theory suggests that people may feel justified to behave unethically after their good behaviour or increased ethicality (Jamal 2012).<sup>14</sup> Koch and Schmidt (2010) demonstrate that auditors are more biased when they provide conflict of interest disclosures to investors than without such disclosures. Similarly, and more recently, Bauer et al. (2020) also test moral licensing behaviour by auditors and find they are prepared to accept more aggressive client financial reporting when they have reported a material weakness in internal control over financial reporting. These studies report findings consistent with a moral licensing effect where disclosures relieve auditors' moral concerns of biased reporting. In our research setting, providing KAMs disclosures allows the auditors to satisfy their obligation to supplement audit information under ISA 701. Under these conditions, auditors may feel that they have discharged their fiduciary duty towards users of financial statements and client management. In doing so, auditors may feel they have engaged in moral behaviour which can subsequently

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<sup>14</sup> Moral licensing has long been established in non-accounting research. For example, Hofmann, Wisneski, Brandt, and Skitka (2014) find that moral licensing operates in people's daily behaviours, specifically noting that "committing a moral act earlier in the day was associated with an above-average likelihood of a subsequent immoral act and a decreased likelihood of a subsequent moral act." (Hofmann et al. 2014, 1343). Similarly, using four studies, Kouchaki (2011) demonstrates that individuals are more likely to prejudice subsequent decisions when they perceive moral behaviour from their colleagues or group members.

create a basis for rationalising feeling justified or ‘licensed’ to have a reduced sense of accountability.

In summary, disclosing KAMs enables auditors to demonstrate their acknowledgement of accountability to users by showing compliance to the new standard and providing accountability information with regard to the audit. Based on the above research, this will potentially relieve auditors’ moral concerns about being accountable to users, so we hypothesise the following:

**H1:** Auditors’ perceived accountability to users of financial statements is lower under a KAMs than under a no KAMs regime.

#### *2.2.4 Management Uncertainty Footnote Disclosures on Fair Value and Auditor Accountability*

Management disclosures constitute a key form of disclosure used by management to provide firm-specific information to improve the information environment of financial statement users, and inform their decisions. Although auditors evaluate reasonableness, it is the management’s responsibility to prepare the financial statements in accordance with accounting standards (IAASB 2016). A key management disclosure concerns fair value decisions which are provided in footnotes to the financial statements. Fair value estimates disclosures are intended to provide value relevant information to the market (Barth 2006; FASB 2010). However, these estimates are often criticised as being unreliable and difficult to verify (e.g., Cannon and Bedard 2017; Laux and Leuz 2009), due to unobservability and estimation uncertainty. So, to address this uncertainty, the regulators and standard setters recommend that management specifically include environmental factors, such as estimation assumptions (e.g., subjectivity) and reasonable range estimates (e.g., imprecision) in relation to the reported fair



value estimates (FASB 2010; Griffin 2014; IAASB 2008b; Kelton and Montague 2018; SEC 2008a; 2008b).

Accounting for fair value of assets is an appropriate setting for this study. This is because it is widely acknowledged as an audit risk area.<sup>15</sup> Early KAMs research also shows that the inclusion of a discussion on fair value is one of the most common matters reported by auditors in KAMs disclosures (KPMG 2017). Additionally, regulators encourage financial statement preparers to provide supplemental footnote disclosures regarding fair value estimates to explain the underlying rationale to users of financial statements (FASB 2010; IASB 2009; Reilly and Scannell 2008; SEC 2008a; 2008b).<sup>16</sup> Auditors play an important role in assessing uncertainty disclosures, including those made in footnotes to financial statements (IAASB 2008a), by evaluating the reasonableness of fair value estimates provided by management during an audit (e.g., AASB 2015; IAASB 2008a).<sup>17</sup>

The work of Griffin (2014) makes an important contribution to assessing the effect of fair value uncertainty and management disclosures on auditors' fair value decisions. He finds that auditors are more likely to require fair value adjustments when the fair value estimates are highly subjective (e.g., Level 3 inputs) and imprecise (e.g., derived from a range). In addition, he illustrates that auditors require a considerable magnitude of adjustments when the degree of subjectivity and imprecision is high. Griffin (2014) also finds that auditors' tendency to require management adjustments, and the magnitude of the adjustments, are lower when a management

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<sup>15</sup> Fair value estimation decisions have been an important concern of regulators and researchers before the introduction of KAMs (Cannon and Bedard 2017; Glover, Taylor, Wu, and Trotman 2019; Griffin 2014; Griffith, Hammersley, and Kadous 2015; Martin, Rich, and Wilks 2006). For example, auditing standard ISA 545 *Auditing Fair Value Measurements and Disclosures* stipulates that auditors are responsible for evaluating the reasonableness of fair value estimates reported in financial statements (IAASB 2008b).

<sup>16</sup> To illustrate, preparers are encouraged to include qualitative characteristics of fair value measures in management disclosures, such as the level of subjectivity of inputs and a range estimate in order to signal the degree of uncertainty to the financial statement users (Griffin 2014; Kelton and Montague 2018).

<sup>17</sup> Under the new auditing standards of disclosing KAMs, auditors have the responsibility of making additional disclosures regarding audit matters that most likely accompany management disclosures, such as fair value estimates.

expanded footnote is present than when it is absent. He argues that management footnote disclosures may be perceived by auditors as being suitable for warning of the risk of misstatements, or as being an explanation for not requiring adjustments. The present study extends Griffin's (2014) work by examining the effect of management disclosures on auditors' perceived accountability toward fair value estimates.

Following Griffin (2014), we also argue that moral licensing explains the relationship between uncertainty footnote disclosures by management and auditor accountability. Specifically, a key moral responsibility for auditors is to ensure that financial statement users are informed and that public interest is served. Auditors may feel 'licensed' to acquiesce to their clients' fair value decisions, if they believe that the uncertainty footnote disclosures by management fulfils (albeit indirectly) the auditor's fiduciary duty to inform the wider investing public. That is, auditors may perceive that management footnotes demonstrate the moral and ethical behaviour of management by supplementing information to inform and forewarn users about uncertainty and misstatements; or by having attempted to make justifications for misstated amounts in the footnotes, thereby fulfilling the *caveat emptor* ("let the buyer beware") principle. This perception may provide some assurance to the auditors that related disclosures have been supplemented for users to understand financial statement line items and related risk areas, and thus reduce auditors' moral obligations toward users. Accordingly, auditors' perceived accountability to users is likely to be lower when management provide explanatory footnotes on uncertainty than when management do not provide expanded footnotes. This reasoning is consistent with Griffin's (2014) findings. Thus, we hypothesise that:

**H2:** Auditors' perceived accountability to users of financial statements is lower when an expanded management footnote on uncertainty is present than when it is absent.

### 2.2.5 *KAMs, Uncertainty Footnotes Disclosures, and Auditors' Fair Value Decisions*

The previous sections have considered the separate effects of two types of disclosures on auditor accountability, namely, KAMs by auditors and uncertainty footnotes by management. However, it is also possible that the information that auditors disclose via KAMs may also be provided at the same time via management disclosures in uncertainty footnotes to financial statements (Czerney, Schmidt, and Thompson 2014; Lennox, Schmidt, and Thompson 2021; PCAOB 2016), which is a unique new setting now enabled by KAM disclosures. In this section, we examine the effects on auditors' fair value adjustment decisions when both disclosures are made.

In this setting, where there are disclosures from both auditors and management, auditors may perceive that disclosures of information via other sources might diminish the credit that users attribute to them, compared to when they are the exclusive source of the disclosure. We propose that it is possible that auditor responses may vary between (i) when the disclosures are made exclusively via KAMs, and (ii) when auditors disclose information in KAMs at the same time management disclose similar information in financial statement footnotes. The second case is fundamentally different to the first. That is, the perceived role of a disclosure may be attributable to either of the two competing causes available; that is, disclosure sources such as the auditors' KAM disclosures or to the disclosures made by management in the footnotes to the financial statements.

Drawing from early, seminal psychology research, we adopt the principles of discounting and augmentation as means for explaining how one might attribute an effect when facing plausible, but competing causes. Specifically, the discounting principle explains how "the role of a given cause in producing a given effect is discounted if other plausible causes are also present" (Kelley 1971, 8). Accordingly, auditors may perceive that recipients of information

disclosed via KAMs (e.g., users of financial statements or other stakeholders) may discount the auditor's role in providing the disclosure when similar information is also provided in footnotes to financial statements by management. Auditors may perceive that the informativeness of KAMs may be diminished if the disclosure they provide is seen by users as supplementary to, or repetitive of, what has already been provided in management footnotes in financial statements. Additionally, auditors may also perceive that their motives may be called into question by the users in terms of whether the auditors are genuinely attempting to fulfil their assurance role or whether, by duplicating information in disclosures already made in management footnotes in KAMs, the auditors are in fact pursuing their self-interest, such as attempting to reduce litigation risk.

Kelley (1971) has argued that a key implication of discounting is augmentation. The principle of augmentation states that "if for a given effect, both a plausible inhibitory cause and a plausible facilitatory cause are present, the role of the facilitative cause in producing the effect will be judged greater" (Kelley 1971, 12). In relation to disclosures of the type considered in this study, clearly management disclosures are inhibitory, whereas auditor KAM disclosures are facilitative. Specifically, following Kelley (1971), the auditors' response to beliefs of user discounting will be augmentation. Meaning that, when faced with choosing between two competing causes (KAMs and management footnotes) to attribute to an effect, that is, the perceived role of a disclosure, the auditors will act in ways that enhance KAMs disclosures, as means of enhancing their own role in producing them. In the accounting and business literatures augmentation has also been referred to as "strategic exaggeration", which is the professionals' response of strengthening advice when they anticipate that advice recipients or the audience are likely to discount it (Cain, Loewenstein, and Moore 2005; Jamal 2012; Loewenstein, Cain, and Sah 2011).

Both discounting and augmentation may be possible in the fair value settings. For example, due to significant and considerable discretion of fair value estimates, auditors are likely to discuss attestation considerations and procedures of fair value in KAMs disclosures as they attempt to enrich the information environment surrounding fair value. However, auditors may perceive that users will discount the informativeness of the KAM disclosure, if management have also provided their own rationale and explanations in footnote discussions concerning fair value measurement considerations.<sup>18</sup> Following Kelley (1971), the auditors' response to discounting in fair value settings can be augmentation. Specifically, augmentation could be manifested in the form of increased conservatism where auditors strategically exaggerate their opinions (Jamal 2012). For example, auditors can attempt to enhance the efficacy of KAMs (and by implication, their role in producing them), by requiring greater fair value adjustments. Accordingly, we predict that:

**H3:** Under the KAM disclosure regime, auditors' fair value decisions are more conservative when an uncertainty footnote on fair value uncertainty is present compared to when it is absent.

## 2.3 Method

### 2.3.1 *Experimental Design*

A  $2 \times 2$  between-subjects experiment (KAMs *versus* no KAMs; and a footnote *versus* an expanded footnote) was conducted to test the hypotheses.<sup>19</sup> Audit partners and other senior auditors from public accounting firms in Australia participated in an online experiment hosted

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<sup>18</sup> Arguably, discounting may occur even though auditors actually provide additional new fair value information in KAMs that is not otherwise available in management footnotes or other sources.

<sup>19</sup> This experiment received ethics approval at the university where it was conducted.

on Qualtrics.<sup>20</sup> The participants were provided with a hypothetical task in which they assessed an impaired asset (shown in the Appendices). In the case material, the audit clients' reported figure was different from the calculation of the specialists.<sup>21</sup> Auditors' perceived accountability judgment was measured by following the measure used in Kang, Trotman, and Trotman (2015), and the auditors' fair value decision measures were adopted from Griffin (2014).

After reading through the case materials presented, the auditors first rated the extent to which they feel accountable in ensuring the reasonableness of the reported fair value estimate, given the audit environment presented to them. Auditors then made the following fair value decisions adopted from Griffin (2014): they indicated the likelihood that they would require the management to adjust the fair value estimates, and the amount of adjustments. The task took approximately 15 minutes to complete.

### 2.3.2 *Participants*

Participants from the audit firms were provided with the Qualtrics link to the experimental materials. Our objective was to target senior auditors involved in KAM decisions and they were obtained by using three different approaches: i) direct contact with firms; ii) a notice in the CA ANZ<sup>22</sup> electronic newsletter targeting two Australian states; and iii) some direct emails.

The participants were all current Australian practicing auditors, with at least 3 years of audit experience.<sup>23</sup> In total, there were 51 participants who completed the survey; however, one participant was a staff auditor who we removed because of a lack of experience, leaving us

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<sup>20</sup> Qualtrics is an online survey platform that distributes survey tasks and records responses. It is widely used in behavioural accounting research (e.g. Brandon, Long, Loraas, Mueller-Phillips, and Vansant 2014; Lambert, Luippold, and Stefaniak 2018).

<sup>21</sup> Specialists refer to valuation specialists engaged by the audit team rather than the specialists engaged by firm being audited.

<sup>22</sup> CA ANZ refers to Chartered Accountants Australia and New Zealand, which is the main professional membership body for auditors in Australia and New Zealand.

<sup>23</sup> In Australia, the corresponding auditing standard ASA 701 was effective in December 2016. The financial year end for the majority of Australian companies is on 30 June, so the first KAM reporting for most was on June 30, 2017. Our data collection period was from late 2018 to early 2019; therefore, the participants would have experienced two reporting seasons for KAMs.

with 50 participants in the final sample. Thirty-nine (78 percent) had audit experience of 10 years or more. Among the participants, 35 (70 percent) were partners and/or directors, nine were senior managers or managers, and six were senior auditors. Ultimately, the top tier management of the audit team, such as audit partners and directors, makes the final decisions about fair value adjustments and KAMs. However, given the overall experience levels of the participant group, we are confident that we secured the appropriate participants for this task. We also asked the participants whether they were familiar with auditing fair value estimates, on a ten-point scale.<sup>24</sup> Finally, when participants were asked in what industries they had audit experience they reported a range of industries, with the three most common being: consumer products/retail, manufacturing, and technology.

### 2.3.3 *Task Materials*

Task materials were developed by following Griffin (2014)<sup>25</sup>, using only the high subjectivity and high imprecision conditions.<sup>26</sup> The case describes a client, ABC Integrated Products, Ltd, which is a publicly traded manufacturing company based in Melbourne, Australia. The case controls for firm specifics and other audit concerns, including internal controls. The Appendices provide full case materials.

### 2.3.4 *Independent Variables*

We manipulate two factors for the experiment. One factor is the audit environment (KAM *versus* no KAM), and the other is management footnote disclosures (with an expanded footnote

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<sup>24</sup> The average responses for self-reported familiarity with fair value auditing does not vary by condition, ranging from 7.62 (no KAM/Footnote) to 8.27 (KAM/Footnote and KAM/Expanded Footnote). In untabulated analyses, we rerun all the tests for each dependent variable with additional covariates for measures of self-reported familiarity with fair value auditing, audit experience, rank, and self-reported confidence of fair value assessments, reaching the same conclusions.

<sup>25</sup> Permission to use survey materials of Griffin (2014) was granted by the author.

<sup>26</sup> We only adopt the high subjectivity (Level 3) and high imprecision (a wide range suggested by valuation specialists) condition from Griffin (2014). These conditions match the situation recommended by regulators (AUASB 2015; IAASB 2015) for auditors to address in KAMs, including areas with high management subjectivity and greater uncertainty calling for auditors' discretion.

*versus* with a footnote). Under the KAM conditions, participants were informed that the current audit reporting model should follow the new standard of disclosing KAMs; while, in the no KAM conditions, auditors were told that reporting KAMs was not an audit disclosing option (i.e., the audit environment is ‘pre-KAMs’). The second factor relates to a footnote just stating that management follows the accounting standard on fair value measurement, compared to an expanded footnote that outlines details about how the fair value was measured. Specifically, we follow the footnote disclosures manipulation from Griffin (2014) by providing an additional paragraph discussing a range estimate of the reported fair value, or by not providing such a paragraph. The range is \$1 million embracing the reported fair value of the client. The midpoint of the client’s range is higher than the midpoint of the audit specialist’s range. The management disclosure was a standard footnote provided in all four conditions as a paragraph about the fair value accounting standard AASB 13 Fair Value Measurement (AASB 2015). In the expanded footnote conditions, it also incorporates an additional paragraph with management’s range estimate and a brief description about the assumptions (e.g., discounted cash flow model) for the Level 3 inputs used to calculate the fair value estimates.<sup>27, 28</sup> Both the assumptions and range in the footnotes signify uncertainty of the recognised fair value estimate.

### 2.3.5 *Dependent Variables*

We measure three dependent variables. First, the auditors’ perceived accountability to users of financial statements, measures the extent to which auditors feel accountable to ensure the reasonableness of the financial statements. This measure is a 10-point Likert scale, ranging from low to high, with 1 being ‘significantly not accountable’, and 10 being ‘significantly accountable’. The measure follows the perceived accountability measure in Kang et al. (2015).

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<sup>27</sup> Griffin (2014) argues that companies often include a discussion about the adoption of corresponding fair value accounting standards in the footnotes.

<sup>28</sup> The corresponding US accounting standards to AASB 13 is ASC 820 in the updated Financial Accounting Standards Board Codification (previously known as SFAS 157).



We also measure two dependent variables for auditors' decisions, both adopted from Griffin (2014), namely (1) the likelihood of requiring management to adjust the fair value estimates, measured on a 10-point Likert scale from low to high, with 1 being the lowest and 10 being the highest likelihood, and (2) the required dollar amount of fair value adjustment. The question on accountability judgment was asked first, as that is what we expected would be the logical thought process of an auditor in evaluating this type of information and making a decision.

## 2.4 Results

### 2.4.1 Manipulation Checks

The post-task questionnaire results show that all of the 23 participants in the KAM disclosure condition and 20 out of 27 participants (74 percent) in the no KAM disclosure condition passed the manipulation check, by correctly answering the question of whether ASA 701 was applicable to the case. In addition, 20 participants responded a score at 7 or higher (3 participants responded with a score of 5 or lower) on the likelihood of disclosing a KAM, with 1 being "very low likelihood of disclosing it as a KAM" and 10 being "very high likelihood of disclosing it as a KAM". This result shows that participants in the KAM disclosure condition are sensitive to this manipulation. We also check the footnote manipulation on the perceived usefulness of the footnote measure.<sup>29</sup> The results show that auditors perceive the expanded footnote to be more useful than the regular footnote ( $F = 3.33, p = 0.037$ ), suggesting that the participants are also sensitive to the footnote manipulation.

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<sup>29</sup> For this manipulation check, we ask the participants to rate the usefulness of the footnote on a 10-point scale, between "1-not useful" and "10-extremely useful".

#### 2.4.2 Hypotheses Testing

We formally test the hypotheses to understand the effects of KAMs and uncertainty disclosures on auditors' accountability perceptions and fair value decisions.<sup>30</sup> We conduct a two-way analysis of variance (ANOVA) on rank-transformed accountability measures, as shown in Table 2.1. The rank-transform converts the ordinal data into a relatively normally distributed data set for ANOVA.<sup>31</sup> We present descriptive statistics and results of KAM and footnotes effects on auditors' accountability in Panel A of Table 1. Results are also illustrated in Figure 2.1.

ANOVA results for the  $2 \times 2$  design, shown in Panel B of Table 2.1, indicate that the main effects of KAM and footnotes are both significant at  $p < 0.05$  (KAM main effect,  $F = 5.57$ ; footnotes main effect,  $F = 16.36$ ). We also present the results of simple main effect tests (Panel C, Table 2.1) to examine the two effects individually.

Hypothesis 1 predicts that auditors' perceived accountability is lower under KAMs than under no KAMs regime. Panel C of Table 2.1 shows that the KAM effect is only significant when an expanded footnote is *not* provided at  $p < 0.05$  ( $F = 5.63$ ,  $p = 0.011$ , one-tailed). The ability to provide justifications by way of KAMs is a means to allow auditors to perform due diligence and potentially enable them to meet accountability expectations to highlight risks. As a result, auditors perceive lower accountability to ensure the accuracy (reasonableness) of financial statements when they believe the investors can be properly informed about areas of

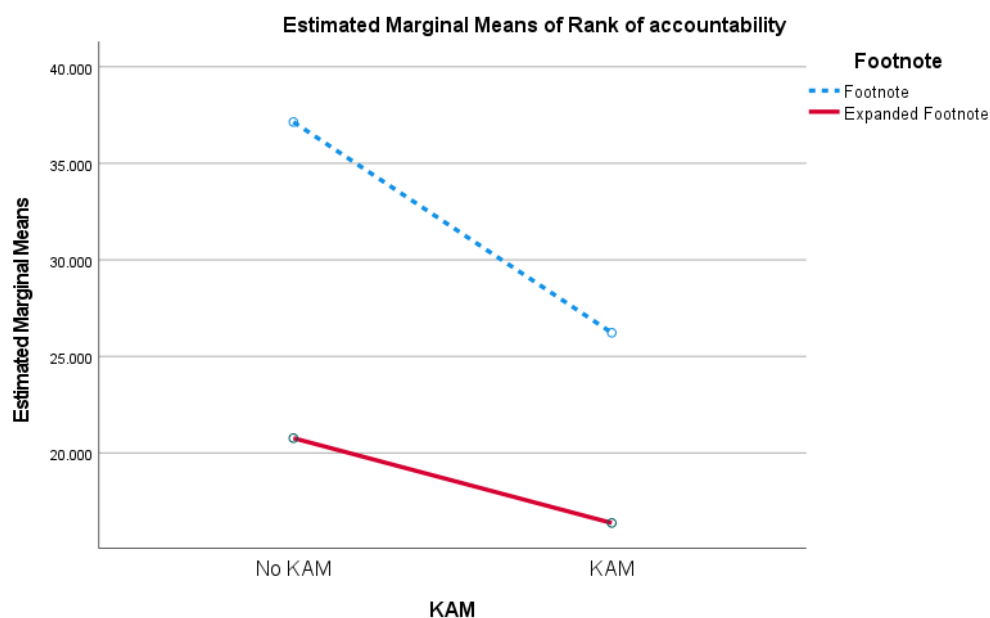
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<sup>30</sup> Hypothesis testing is conducted on full sample including responses of participants (7 out of 27) who failed the manipulation check. Results are statistically similar when these responses are excluded.

<sup>31</sup> The original data were ordinal values in nature (ranging from 1 to 10 for the accountability and the likelihood of adjustment measures), which violate normality that is required for common parametric tests. Parametric tests using rank-transformed data are considered equivalent to the common nonparametric tests of Kruskal-Wallis and Wilcoxon for one factor tests using signed-rank tests to adjust for the normality issue with ordinal data. This logic also applies to the interaction analysis for two-factor cases by using rank-transformed values. Consistent with prior research (e.g., Messier, Kachelmeier, and Jensen 2001), we use rank-transformed values rather than the raw data for our factorial analysis for the interaction effects. In addition, we also use ranked values of adjustment amount decisions to be consistent with the rest of the analyses. The results using raw data of the adjustment amount decisions are broadly the same as using the ranked values.

risks via KAMs. However, as shown in the results, when management provides an expanded footnote we do not observe this effect, suggesting a substitution effect on perceived accountability from these two disclosures. Thus, H1 is partially supported, in that accountability is only reduced under KAMs compared to no KAMs, when the information on risks is not further discussed in the footnotes.

**FIGURE 2.1 – Ranked Perceived Accountability**



**Note:** Figure 2.1 plots observed means for ranked values of auditors’ perceived accountability. Auditors indicate their perceived accountability on a ten-point Likert scale to the question “To what extent did you feel accountable to ensure the reasonableness of the financial statements?”, where 1 = “significantly not accountable” and 10 = “significantly accountable”. KAM conditions were manipulated at two levels, between-subjects, by explicitly informing whether reporting KAMs is required or not. Footnotes conditions were manipulated at two levels, between-subjects, by including or excluding an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 2.1**

**Two-way 2x2 ANOVA of KAM and Footnotes Effect on Accountability Perception**

**Panel A: Descriptive Statistics – Accountability Rank Value Mean (Actual Mean) [Standard Deviation]**

KAM	Footnotes Conditions							
	<u>n</u>	Footnote		<u>N</u>	Expanded		Total	
No KAM	14	37.14	(9.86)	13	20.77	(8.45)	29.26	(9.19)
		[5.99]	[0.36]		[14.03]	[1.61]	[13.35]	[1.33]
KAM	11	26.23	(8.55)	12	16.38	(8.08)	21.09	(8.30)
		[14.29]	[2.62]		[10.11]	[1.73]	[13.01]	[2.16]
Total	25	32.34	(9.28)	25	18.66	(8.28)	25.50	(8.78)
		[11.63]	[1.84]		[12.26]	[1.65]	[13.69]	[1.80]

**Panel B: Two-way ANOVA Model of Accountability Measure**

Source of Variation	SS	df	MS	F	<i>p</i> <sup>a</sup>
KAM (Test of H1)	726.58	1	726.58	5.57	0.011
Footnotes (Test of H2)	2132.08	1	2132.08	16.36	0.000
KAM * Footnotes	131.83	1	131.83	1.01	0.320
Error	5995.77	46	130.34		

R Squared = .348 (Adjusted R Squared = .305)

**Panel C: Simple Effect Tests for Accountability**

Source of Variation	F	<i>p</i> <sup>a</sup>
Effect of KAM given a regular footnote (Test of H1)	5.63	0.011
Effect of KAM given an expanded footnote (Test of H1)	0.92	0.171
Effect of expanded footnote under No KAM (Test of H2)	13.87	0.000
Effect of expanded footnote under KAM (Test of H2)	4.27	0.022

<sup>a</sup> Reported *p*-values for tests of hypotheses are one-tailed, as noted; all other *p*-values are two-tailed.

Table 2.1 presents analysis of auditors' perceived accountability. The dependent variable is perceived accountability, for which participants were asked to respond to the following question on a ten-point Likert scale: "To what extent did you feel accountable to ensure the reasonableness of the financial statements?", where 1 = "significantly not accountable" and 10 = "significantly accountable".

KAM conditions were manipulated at two levels, between-subjects, by explicitly informing whether reporting KAMs is required or not. Footnotes conditions were manipulated at two levels, between-subjects, by including or excluding an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

Hypothesis 2 predicts that auditors' perceived accountability is lower when an expanded management footnote on uncertainty is present than when it is absent. Panel B of Table 2.1 shows that footnotes have a significant effect on auditors' accountability perceptions ( $F = 16.36$ ,  $p < 0.001$ , one-tailed). Simple main effect results reported in Panel C of Table 2.1 show that the effect of management footnotes is significant under the no KAM condition ( $F = 13.87$ ,  $p < 0.001$ , one-tailed) and the KAM condition ( $F = 4.27$ ,  $p = 0.022$ , one-tailed), showing that irrespective of the requirement to disclose KAMs, auditors' perceived accountability is significantly lower when an expanded management footnote is present. Therefore, H2 is supported. Given that a key purpose of footnotes is to explain the rationale concerning the uncertainty of figures reported in disclosures in financial statements, the finding indicates that the footnotes are viewed by auditors as management's own admission about possible misstatement risks (Griffin 2014). Such an admission by management constitutes a forewarning to investors, and consequently reduces the auditors' perceived accountability.

As shown in Figure 2.1 and Panel C of Table 2.1, the findings from testing H1 and H2 illustrate a substitution effect between footnotes and KAMs on auditors' accountability perceptions. As can be seen, when there is an expanded footnote, there is very little reduction in accountability due to provision of a KAM. However, when the expanded footnote disclosure is not provided, the provision of a KAM significantly reduces auditors' perceived accountability.

Hypothesis 3 predicts that under the KAM disclosure regime, auditors' fair value decisions are more conservative when an uncertainty footnote on fair value uncertainty is present compared with when it is absent.<sup>32</sup> We conduct a two-way ANOVA on rank-transformed

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<sup>32</sup> While we did include the likelihood of adjustment in the experimental materials to be consistent with Griffin (2014), we did not develop any predictions on this and so results from this variable are not reported in the main body of this paper. However, in performing an ANOVA with likelihood of adjustment as an independent variable, we did not find any significant differences based on our manipulated variables ( $F = 0.59$ ,  $p = 0.448$ ).

measures of fair value adjustments amounts, as shown in Table 2.2. Panel B of Table 2.2 depicts significant main effects for both KAMs ( $F = 6.91, p = 0.012$ , two-tailed) and footnotes ( $F = 7.42, p = 0.009$ , two-tailed).<sup>33</sup> As shown in Panel C of Table 2.2, under KAM conditions, the effect of footnotes is significant on auditors' fair value adjustment amount decisions ( $F = 7.03, p = 0.005$ , one-tailed). Therefore, Hypothesis 3 is supported.

The findings indicate that while both disclosures from management in the form of expanded footnotes and those from the auditors themselves in the form of KAMs serve to reduce auditors' perceived accountability to reporting accuracy, the effects of these disclosures on auditors' fair value decisions are different. When there are no KAMs, auditors consider management uncertainty footnotes as being proper to inform users about misstatement risks in relation to fair value estimates, such that they propose adjustments just above the lower boundary (\$365,385, Panel A of Table 2.2) of the valuer's range to correct a likely misstatement.<sup>34</sup> However, when auditors have to prepare disclosures in KAMs to inform users about misstatement risks in financial reports, and this is done in conjunction with management's expanded footnotes, the proposed adjustment from auditors is significantly higher (\$766,667, Panel A of Table 2.2). Results are also illustrated in Figure 2.2. The effect of these two disclosures on auditors' adjustment decisions is consistent with "strategic exaggeration" by auditors in response to beliefs that disclosure by management on the same issue may result in discounting by users of the value of the information provided by the auditor (Jamal 2012; Kelley 1971). This response from auditors is also consistent with recent KAMs

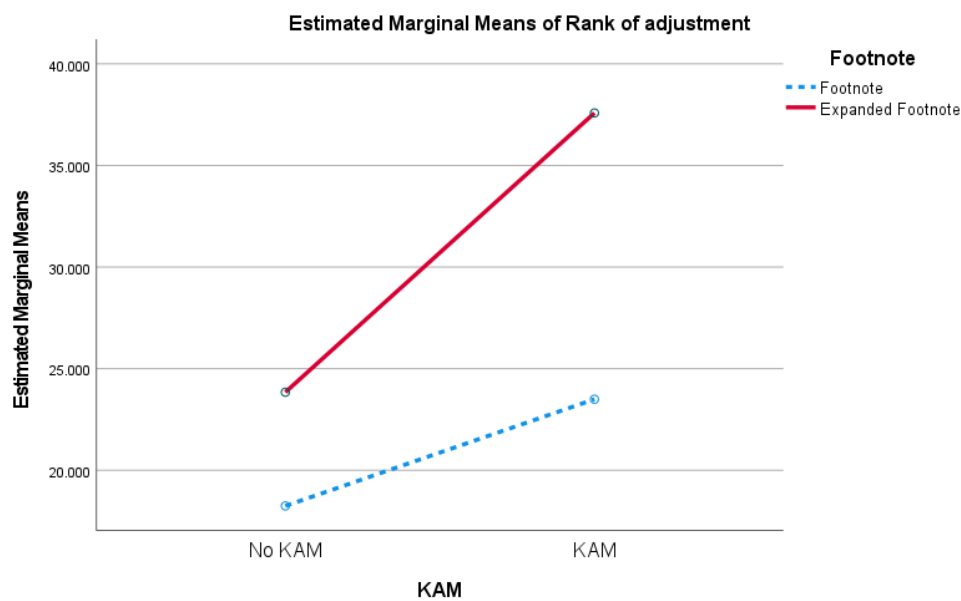
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<sup>33</sup> Table 2.2 also performs a test that replicates Griffin (2014). That is, where there is no KAM available and an expanded footnote provided. Unlike Griffin (2014), we do not find a significant result here. However, our study is different to Griffin (2014) in that we make an explicit statement that KAMs are not a reporting option in our experiment which was necessary for our second experimental manipulation.

<sup>34</sup> A likely misstatement is defined as the difference between clients' reported value and the nearest boundary of auditors' range estimate under current auditing standards, but the midpoint is commonly used by investors and analysts when presenting a range of outcomes (e.g., Hirst, Koonce, and Miller 1999; Kennedy, Mitchell, and Sefcik 1998) and is sometimes specified by the Australian accounting standards (i.e., AASB 137). In this case, the likely misstatement = reported amount of \$3,450,000 – midpoint [ $\$2,250,000 + (\$3,250,000 - 2,250,000)/2$ ] = \$700,000, with \$200,000 being the lower bound.

literature highlighting possible increased litigation risk from KAMs (e.g., Brasel et al. 2016; Gimbar, Hansen, and Ozlanski 2016) and provides some evidence on auditors' decision patterns under the KAM disclosure regime.

**FIGURE 2.2 – Ranked Dollar Amount of Audit Adjustments**



**Note:** Figure 2.2 presents the means of ranked dollar amount of fair value adjustment required. Auditors provided their proposed fair value adjustment amount when responded to the following question: “Please indicate the most likely dollar amount of your required adjustment”. KAM conditions were manipulated at two levels, between-subjects, by explicitly informing whether reporting KAMs is required or not. Footnote conditions were manipulated at two levels, between-subjects, by including or excluding an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 2.2**

**Two-way 2×2 ANOVA of KAM and Footnotes Effect on Adjustment Amount Decisions**

**Panel A: Descriptive Statistics – Adjustment Amount Rank Value Mean (Actual Mean) [Standard Deviation]**

KAM	n	Footnotes Conditions			
		Footnote	N	Expanded	Total
No KAM	14	18.25 (\$226,429) [12.33] [\$271,339]	13	23.85 (\$365,385) [13.77] [\$412,000]	20.94 (\$293,333) [13.10] [\$346,643]
KAM	11	23.50 (\$355,455) [14.21] [\$325,618]	12	37.58 (\$766,667) [10.33] [\$399,052]	30.85 (\$570,000) [14.03] [\$414,641]
Total	25	20.56 (\$283,200) [13.17] [\$297,205]	25	30.44 (\$558,000) [13.88] [\$446,906]	25.50 [14.29] [\$400,441]

**Panel B: Two-way ANOVA model for Adjustment Amount Decisions**

Source of	SS	df	MS	F	p <sup>a</sup>
KAM	1117.54	1	1117.54	6.91	0.012
Footnotes	1200.53	1	1200.53	7.42	0.009
KAM * Footnotes	223.29	1	223.29	1.38	0.246
Error	7444.98	46	161.85		

R Squared = .256 (Adjusted R Squared = .208)

**Panel C: Simple effect tests of KAM for Adjustment Amount Decisions**

Source of Variation	F	p <sup>a</sup>
Effect of KAM given a regular footnote	1.05	0.311
Effect of KAM given an expanded footnote	7.28	0.010
Effect of expanded footnote under No KAM	1.30	0.259
Effect of expanded footnote under KAM (Test of H3)	7.03	0.005

<sup>a</sup> Reported *p*-values for tests of hypotheses are one-tailed, as noted; all other *p*-values are two-tailed.

Table 2.2 presents analysis of auditors proposed fair value adjustment amounts. The dependent variable is the proposed fair value adjustment amount, for which participants were required to respond to the following question: “Please indicate the most likely dollar amount of your required adjustment”.

KAM conditions were manipulated at two levels, between-subjects, by explicitly informing whether reporting KAMs is required or not. Footnotes conditions were manipulated at two levels, between-subjects, by including or excluding an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.



## 2.5 Conclusions

We provide empirical evidence about auditors' judgments and fair value decisions under the current reporting environment where auditors are required to disclose KAMs and management are encouraged to supplement fair value related disclosures. We find that there is a substitution effect between management disclosures and KAMs disclosures on auditors' accountability perceptions, such that auditors' perceived accountability reduces when either an expanded footnote or a KAM is provided, consistent with moral licensing.

In spite of the substitution effect of the two types of disclosures in relation to accountability, our findings indicate that when both of these disclosures are available it has a different effect on auditors' adjustment decisions. The results are consistent with the principles of discounting and augmentation (Kelley 1971). That is, when there are two competing causes presented in relation to a disclosure, as is the case with both the auditor and management reporting on fair value, there is a risk that users of financial statements will discount the auditor's role in providing this disclosure. This may result in "strategic exaggeration" (Cain et al. 2005; Jamal 2012; Loewenstein et al. 2011) by auditors to enhance their role and the most obvious and logical way of doing this is through their adjustment decision. We find that auditors act in this way by requiring a more conservative fair value adjustment to the financial statements when both disclosures are provided. This finding is also consistent with a recent study on the effect of KAMs on financial reporting behaviour, where it was found that managers who received an audit report with KAMs exhibited more conservative reporting behaviour than those who received an audit report without KAMs (Gold, Heilmann, Pott, and Rematzki 2020). In a similar vein, Kang (2019) found that audit committee members perceived more oversight when there was a critical audit matter disclosure and the company had a more unsophisticated investor base.

In summary, this study provides empirical evidence and underlying theory to inform regulators and standard setters about how auditors' judgment and decisions shift due to the recent substantial changes in audit reporting requirements. While the objective of KAMs was to improve the information disclosed to users (IAASB 2011), expanding reported information disclosure always had the potential to affect the judgments and decisions of the auditors who provide KAMs.

Our results are subject to a number of limitations. First, we only explore one disclosure issue and related KAMs decisions of auditors. In practice, this fair value issue is likely to be part of a list of audit issues that audit partners need to consider. It is unclear if and how the decisions concerning those issues influence each other. Future studies can explore whether judgments and decisions vary due to factors such as the number and magnitude of KAMs that are disclosed. Second, our measure of perceived accountability captures auditors' perceived accountability concerning the outcome of the audit rather than their accountability concerning the audit process. Further research could examine the implications of auditor accountability towards the process and how that might differ from outcome accountability.

Finally, these changes to the auditor reporting model were primarily designed to affect users' decisions (IAASB 2011). However, we show that there are effects on auditors' judgments and decisions as well. Although there has been some research on audit committees (Kang 2019) and managers (Gold et al. 2020), future research could further evaluate how enhanced disclosure by auditors of this type might affect the perceptions and real actions of other participants in the financial reporting process.

## **APPENDIX A - INSTRUMENT 1**

### **Company Background**

#### **Company Background – [For all conditions]**

ABC Integrated Products, Ltd.

Your client, ABC Integrated Products, Ltd. is a publicly traded manufacturing company headquartered in Melbourne, Australia. ABC Integrated is a profitable company with stable financial growth for the past five years. Financial indicators of the company, such as liquidity and leverage are at industry average. Prior audit engagements show that there is no identifiable material weaknesses in the company's internal control.

The company uses a materiality level of \$1,000,000 based on Net Income for the financial statements overall, according to company guidelines. During the audit, the materiality level is agreed to be appropriate. During the current audit, all standard tests have been completed by competent staff of your audit team and the results have been reviewed to your satisfaction. Other than the unresolved matter described on the following page, there are no further adjustments being considered for the financial statements. In addition, there are no significant qualitative materiality factors identified in the audit during this year.

The client believes that the financial statements are presented fairly, and insists on receiving an unqualified opinion as soon as possible. The client is firmly opposing any proposed audit adjustments and is pressuring you to waive all the adjustments.

## No KAM vs. KAM Manipulation

### Asset Impairment Workpaper – [No KAM condition]

**In the audit environment for this case study, Key Audit Matters (KAMs) are not a reporting option in auditors' reports. An independent auditor's report ONLY contains the auditor's opinion and basis for the opinion.**

Due to product innovation and revision, the client identified a piece of manufacturing equipment that may be impaired at the end of the reporting period. According to AASB 136 *Impairment of Assets*, the client measured the recoverable amount of the equipment and determined that the carrying value of this equipment exceeded its recoverable amount. The client applied AASB 13 *Fair Value Measurement* to determine the fair value of the equipment. Due to an absence of relevant observable inputs, such as quoted price in an active market for this type of equipment or its similar kind, the client used unobservable inputs to determine the fair value. Unobservable inputs are categorised as level 3 inputs under AASB 13 fair value hierarchy. The client developed unobservable inputs and valued this equipment based on estimated future cash flows. The recorded value of this equipment was at **\$ 3,450,000**.

The audit team involved the firm's valuation specialists to evaluate the client's estimate. The firm's specialists provided the following advice:

“We measure these assets based on discounted future cash flows, as there is no active market for these assets. Our estimated range for these assets is approximately between **\$ 2,250,000** and **\$ 3,250,000**. This range was developed using level 3 inputs under AASB 13. Our estimate is lower than the client's, because we take a different view of the industry prospects from the audit client.”

## **Asset impairment Workpaper – [KAM condition]**

**Currently, Auditing Standard ASA 701 *Communicating Key Audit Matters in the Independent Auditor's Report*, has been effective since 15 December 2016. ASA 701 requires auditors to disclose Key Audit Matters that in the auditor's professional judgment, were of most significance in the audit of the financial report of the current period.**

Due to product innovation and revision, the client identified a piece of manufacturing equipment that may be impaired at the end of the reporting period. According to AASB 136 *Impairment of Assets*, the client measured the recoverable amount of the equipment and determined that the carrying value of this equipment exceeded its recoverable amount. The client applied AASB 13 *Fair Value Measurement* to determine the fair value of the equipment. Due to an absence of relevant observable inputs, such as quoted price in an active market for this type of equipment or its similar kind, the client used unobservable inputs to determine the fair value. Unobservable inputs are categorised as level 3 inputs under AASB 13 fair value hierarchy. The client developed unobservable inputs and valued this equipment based on estimated future cash flows. The recorded value of this equipment was at **\$ 3,450,000**.

The audit team involved the firm's valuation specialists to evaluate the client's estimate. The firm's specialists provided the following advice:

“We measure these assets based on discounted future cash flows, as there is no active market for these assets. Our estimated range for these assets is approximately between **\$ 2,250,000** and **\$ 3,250,000**. This range was developed using level 3 inputs under AASB 13. Our estimate is lower than the client's, because we take a different view of the industry prospects from the audit client.”

## **A Footnote vs. an Expanded Footnote Manipulation**

### **Client's Draft footnote – [A Footnote condition]**

The Company applies AASB 13 *Fair Value Measurement* (AASB 13), where warranted for both financial and nonfinancial assets. AASB 13 defines fair value, establishes a framework for measuring fair value that is required or permitted by other Australian Accounting Standards, and expands disclosures about fair value measurements.

### **Client's Draft footnote – [An Expanded Footnote condition]**

The Company applies AASB 13 *Fair Value Measurement* (AASB 13), where warranted for both financial and nonfinancial assets. AASB 13 defines fair value, establishes a framework for measuring fair value that is required or permitted by other Australian Accounting Standards, and expands disclosures about fair value measurements.

Due to an unobservable market, the recoverable amount of the equipment is estimated to be between \$3 and \$4 million, by using a discounted cash flow model prepared under a value – in – use based approach. In addition, a sensitivity analysis has been undertaken to examine the effect of any changes in the key variables, which would result in a change in the assessed value in use. The recognised amount represents the company's best estimate from within that range.

## **Field Senior's Conclusion**

### **Field Senior's Conclusion – [For all conditions]**

The client's fair value measurement is different from our firm specialists'. Our specialists' range estimate suggests that the client's recorded asset impairment loss should increase by approximately \$ 200,000 to \$ 1,200,000. The client believes that its own estimate is more appropriate based on present facts and circumstances. Thus, the different estimates result in our proposal of the following adjustment amount to the client's financial statements:

<b>Dr Impairment Loss</b>	<b>\$ xx</b>
<b>Cr Accumulated Depreciation and Impairment Losses</b>	<b>\$ xx</b>
<b>(Impairment loss on asset)</b>	

## Survey Questions

### Survey Questions:

#### 1) Perceived Accountability

Given the audit environment presented to you in the case material, to what extent did you feel accountable to ensure the reasonableness of the financial statements? Please indicate your choice by using the scale:



Significantly  
not  
accountable

Significantly  
accountable

#### 2) Fair Value Adjustment Decisions

##### 1. Likelihood of Requiring Fair Value Adjustment Decision

Based on the case information provided about the client and the firm's partial workpaper, how likely is it that you would require management to make an adjustment to the recorded value of any dollar amount? Please indicate your choice by using the scale:



Very low  
likelihood of  
requiring  
adjustments

Very high  
likelihood of  
requiring  
adjustments

##### 2. Fair Value Adjustment Amount Decision

Please indicate the most likely dollar amount of your required adjustment:

\$\_\_\_\_\_.

3. If you would like to comment on the reasons for your decisions, please do so in the space provided below (optional):



**3) KAM Questions:**

**1. Likelihood of Disclosing KAMs (Only for KAM conditions)**

How likely would you disclose this matter as a Key Audit Matter in the audit report?

Please indicate your answer by using the following scale:



Very low  
likelihood  
to disclose it  
as a KAM

Very high  
likelihood  
to disclose it  
as a KAM

2. If you would like to comment on the reasons for your KAM decisions, please do so in the space provided below (optional):

## Debriefing questions

### 1. Confidence of the Likelihood of Requiring Fair Value Adjustment

How confident/certain are you in your assessment of the likelihood of requiring a misstatement correction (on the previous question)? Please indicate your answer by using the following scale, with 1 being “Not Confident” and 7 being “Completely Confident”.



Not Confident

Completely  
Confident

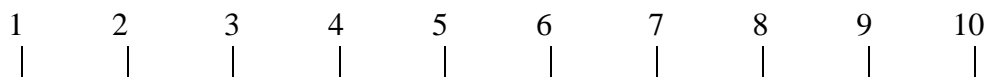
### 2. KAM Manipulation Check

Is Auditing Standard ASA 701 *Communicating Key Audit Matters in the Independent Auditor’s Report* applicable in this case study? Please select your answer below.

- Applicable
- Not applicable

### 3. Assessment of Significance of the Fair Value

Please rate the significance level of the fair value measurement in the case by using the following scale ranging from 1 to 7, with 1 being “Not Significant” and 7 being “Extremely Significant”. Please indicate your answer by using the scale:



Not Significant

Extremely  
Significant

### 4. Footnote Manipulation Check

Please rate the usefulness of the client’s footnote disclosure to financial statement users by using the following scale, ranging from 1 to 7, with 1 being “Not Useful” and 7 being “Extremely Useful”. Please indicate your answer by using the scale:



Not Useful

Extremely  
Useful

## Demographical Questions

1. Please indicate any of the following industries in which you have significant auditing experience by selecting one or more of the following (multiple-answer):
  - Communications/Media
  - Construction/Real Estate
  - Consumer Products/Retail
  - Energy
  - Financial Services/Insurance
  - Government/Not-for-profit
  - Healthcare/Pharmaceuticals
  - Manufacturing
  - Technology (electronics, software, services, etc.)
  - Other (Please specify) \_\_\_\_\_
  
2. Please indicate your audit experience in years (single-answer):
  - Below 3
  - 3 – 5
  - 5 – 10
  - 10 – 15
  - Above 15
  
3. Please indicate your audit experience of listed companies in years (single-answer):
  - Below 3
  - 3 – 5
  - 5 – 10
  - 10 – 15
  - Above 15
  
4. Please indicate your experience of developing audit reports of listed companies in years (single-answer):
  - Below 3
  - 3 – 5
  - 5 – 10
  - 10 – 15
  - Above 15

5. What's your current position in the firm (single-answer)?

- Partner
- Director
- Senior Manager
- Manager
- Senior auditor
- Staff auditor
- Other (please specify) \_\_\_\_\_

6. Please indicate if you have obtained any accounting qualifications (multiple-answer):

- CA
- CPA
- IPA
- CMA
- CIA
- Not applicable
- Other (please specify) \_\_\_\_\_

7. How would you characterise your familiarity with auditing fair value estimates under AASB 13 *Fair Value Measurement*? Please indicate your choice by using the scale:



Not Familiar

Extremely  
Familiar

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## CHAPTER 3 – STUDY TWO

### AUTHORSHIP DETAILS

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Title of Paper	The Effect of Key Audit Matters and Uncertainty Disclosures on Auditors' Accountability Perceptions and Fair Value Decisions
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input type="checkbox"/> Submitted for Publication <input checked="" type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style
Publication Details	<ul style="list-style-type: none"> <li>- Presented at Doctoral Symposium of Accounting and Finance Association of Australia and New Zealand 2021</li> <li>- To be presented at Experimental Accounting Workshop 2022 at the University of Melbourne</li> <li>- Currently preparing for journal submission</li> </ul>

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By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author			
Contribution to the Paper			
Signature		Date	

Name of Co-Author			
Contribution to the Paper			
Signature		Date	

# **The Effect of Audit Materiality and Management Uncertainty Disclosures on Auditors' Accountability Perceptions and Fair Value Decisions**

## **ABSTRACT**

I experimentally examine the joint effect of audit materiality and management uncertainty disclosures on auditor perceptions of accountability and fair value decisions. Drawing on discounting and augmentation principles from psychology research, I demonstrate that auditors perceived accountability and their tendency to require fair value adjustments are affected by these two types of disclosures. Specifically, I find that auditors feel more accountable and are more likely to require clients to correct detected fair value misstatements when audit materiality and uncertainty disclosures are provided simultaneously. I also find that these disclosures interactively increase auditors' tendency to disclose a fair value issue as a Critical Audit Matter (CAM). The findings contribute to audit research and offer important implications for current audit reporting policies and practices.

**Keywords:** audit materiality disclosures, footnote disclosures, audit fair value decisions, accountability, CAMs.

## **3.1 Introduction**

Audit reports now include audit materiality disclosures in some jurisdictions (e.g., U.K. and the Netherlands) to facilitate users' assessment of risks of financial information (FRC 2013; NBA 2014). Accordingly, auditors are required to discuss the concept of audit materiality and to "specify the threshold used by the auditor as being materiality for the financial statements as a whole" (FRC 2013, 7). While audit reporting disclosures are important, they do not occur in a vacuum but in conjunction with other disclosures (e.g., by management). One important management disclosure relates to fair value measurement uncertainty, which requires managers to provide information about uncertainty considerations of fair value measures with related range estimates and valuation inputs in management disclosures (e.g., FASB 2018). In audit reporting regimes where audit materiality disclosures are mandated, auditors may have to make fair value judgments under conditions when they themselves have to make materiality disclosures while management also provide uncertainty footnotes, which may have implications on auditor behaviour.

Fair value estimates are subject to considerable management discretions and often imply substantial measurement uncertainty (Christensen, Glover, and Wood 2012; PCAOB 2012; Glover, Taylor, and Wu 2017). When auditing fair value estimates, auditors need to exercise materiality judgments and professional scepticism to evaluate the reasonableness of the reported fair value and the sufficiency of related disclosures made by the management (e.g., PCAOB 2003; IFAC 2008; PCAOB 2010; Griffin 2014; Griffith, Hammersley, and Kadous 2015). In addition, auditors also have to determine whether to disclose significant fair values as Critical Audit Matters (CAMs). CAMs are material audit issues that, in the auditor's professional judgment, are of the most importance in an audit (PCAOB 2017).<sup>35</sup> Under the audit reporting regime where audit materiality considerations are provided, audit materiality disclosures have the potential to influence auditors' materiality related judgments, including fair value decisions and associated CAM disclosures. In this study, I examine how audit materiality disclosures and uncertainty disclosures affect auditors' fair value judgments and decisions.

Understanding auditors' materiality judgment and decisions in different regulatory regimes, where audit materiality information is (or is not) required to be disclosed, is important to regulators and standard setters (e.g., PCAOB and IAASB), as they have been continuously monitoring and evaluating the effectiveness of implementing materiality disclosures into audit reporting model reform (IAASB 2011; PCAOB 2017). Understanding audit materiality judgments can help address potential concerns of "negative implications of audit quality" due to materiality disclosures (PCAOB 2017, 54), as well as evaluate the impact of disclosing audit materiality on the audit work and audit quality (FRC 2017).

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<sup>35</sup> Key audit matters (KAMs) have been required under the international audit standard ISA 701 since 2016 (IAASB 2015b). CAMs and KAMs are considered similar audit disclosures under the new audit reporting model that do not have fundamental distinctions between each other (e.g., Bédard, Coram, Espahbodi, and Mock 2016).

I apply attribution theory from psychology to examine the effect of materiality disclosures and uncertainty disclosures on auditors' fair value judgment and decisions. Using attribution theory, I draw on discounting and augmentation principles which relate to two competing factors in predicting how the effects of these disclosures interactively affect auditors' judgments and decisions. The discounting principle suggests that people diminish the role of a particular factor to explain an effect when other factors exist that can also explain the same effect (Kelley 1971). Conversely, the augmentation principle occurs when people assign greater importance to a factor that facilitates an effect, when other factors are present that inhibit the effect (Kelley 1971).

An audit materiality disclosure provides the auditors' materiality consideration to ensure that the audited financial information is reasonably reliable to the extent indicated in the disclosure (e.g., Eilifsen Hamilton, and Messier 2020). In contrast, uncertainty footnote disclosures provide primary valuation information about measurement uncertainty to inform financial statement users about risks of fair value measures, suggesting uncertainty that challenges the reliability of the financial information (e.g., Griffin 2014; Griffith et al. 2015). When the two disclosures are provided concurrently, they may produce effects which contribute to informing users about the reliability of financial statements and of the auditors' perceived role in ensuring the reasonableness of financial statements.

Based on discounting and augmentation principle, I expect that materiality disclosures and uncertainty disclosures are competing factors relating to the role of the auditor in providing reasonable assurance about the financial report. Specifically, auditors may feel that their role to ensure the reasonableness of financial reports is discounted due to the presence of uncertainty disclosures. Under these conditions, the auditors' reaction can be explained by the augmentation effect whereby auditors are likely to strengthen fair value misstatement

correction requirements. Accordingly, the effects of the two types of disclosures interact to increase auditors' accountability judgments and fair value decisions.

To investigate these issues, I conduct a  $2 \times 2$  between-subjects experiment in which forty-three auditor participants assess their perceived accountability and make fair value adjustment decisions. Audit materiality disclosures are either required or not required to be disclosed by the audit standard for each condition; management footnotes either include an additional paragraph discussing a range estimate and measurement inputs or do not include such paragraph.

Consistent with discounting and augmentation principles, the findings show that the audit materiality disclosure requirement and management uncertainty disclosures produce effects which interact to increase auditors' accountability perceptions in ensuring the reasonableness of the financial reports. Moreover, the results demonstrate that auditors are more likely to require their clients to make adjustments due to detected misstatements when both types of disclosures are provided compared to when only one type of disclosure is made available to users. Furthermore, the additional analysis shows that materiality disclosures and uncertainty disclosures also interactively increase auditors' tendency to make a related fair value CAM disclosure. Collectively, the results indicate that the requirement to provide audit materiality disclosures while measurement uncertainty disclosures are provided in the management footnotes can strengthen auditors' role in ensuring the reasonableness of financial information, and increase auditors' conservative fair value adjustment requirement decisions.

The study contributes to both research and practice. First, the findings suggest that auditors' perceptions of their role in ensuring reasonable financial statements can be influenced by disclosures, such that auditors perceive themselves to be more accountable when they are required to disclose materiality information and management have supplemented uncertainty



information. This is surprising, because audit standards do not suggest a different level of accountability to be assumed by auditors when providing assurance on financial statements under different disclosure requirements. This finding suggests that disclosure requirements can induce such a difference in auditors' accountability.

Second, I provide evidence that auditors can respond differently under alternative materiality disclosure regimes when management uncertainty disclosures are available. I find that given uncertainty information from management, auditors are more likely to require their clients to correct a material fair value misstatement under a materiality disclosure reporting regime than under a no materiality reporting regime. This finding serves to improve current understanding of auditors' reactions and the behavioural implications of audit materiality disclosure requirements. This unintended consequence also provides insights to standard setters for the assessment of the implications of audit materiality disclosure requirements on audit quality and effectiveness.

Third, the study also has implications for auditors' CAM disclosure decisions under the new audit reporting model. I illustrate that CAM decisions can be affected by other disclosures from both the auditors and management, such that auditors are more likely to disclose a material fair value issue as a CAM in the audit report under audit reporting regimes where audit materiality considerations are required to be disclosed. This finding indicates that increased visibility of audit materiality may enhance auditors' perceived importance of fair value estimates by considering additional audit discussions in CAM disclosures. In addition, the findings reveal that the increased tendency to require fair value adjustments positively correlates to auditors' CAM decisions, implying that these two materiality decisions are not substitutes for each other under the new audit reporting model.

The remainder of the paper is organised as follows. Section 3.2 presents the background and a review of related literature. Section 3.3 outlines the research method, survey design, and data collection. Section 3.4 reports and discusses the results obtained. Finally, section 3.5 concludes the paper.

## **3.2 Background**

### *3.2.1 Auditing Fair Value Estimates*

Fair value estimates are used to provide value relevant information to the market (Barth 2006; FASB 2010). However, these estimates may be unreliable and, due to estimation uncertainty and unobservability, difficult to verify (e.g. Laux and Leuz 2009; Cannon and Bedard 2016). To address these concerns, regulators and standard setters had been encouraging management to make voluntary disclosures concerning fair value estimates (SEC 2008a; 2008b) and later required uncertainty disclosures for highly uncertain fair value measures (FASB 2018). These management disclosures are intended to provide information to users about management considerations of the valuation and uncertainty of reported fair value estimates (FASB 2018).

Auditors are responsible for applying materiality judgments to determine the reasonableness of fair value estimates (e.g., Christensen et al. 2012; Griffin 2014; Cannon and Bédard 2017). While standard setters provide guidance for evaluating materiality of fair value misstatements (e.g., IAASB 2008a; 2008b), the evaluation of misstatement materiality is, to a large extent, subject to auditor discretion that is based on audit materiality judgments. After detecting misstatements of fair value estimates, auditors make a materiality judgment of fair value adjustment decisions, that is, whether to require management to adjust estimates, and if so, by how much (Griffin 2014).

Recent research has focused on the possible causes of deficiencies of auditing fair value estimates (Christensen et al. 2012; Griffith et al. 2015; Cannon and Bedard 2017; Glover et al. 2017). Research has identified factors that influence audit fair value decisions, including the unrealistic burden for auditors to provide reasonable assurance for highly uncertain estimates (Christensen et al. 2012); the fact that auditors may anchor on management's estimates (Griffith et al. 2015); or the use of specialists for evaluation decisions (Cannon and Bédard 2017). Of particular relevance to this study, two behavioural auditing studies find that auditors' judgments and decisions on fair value are also vulnerable due to management disclosures (Griffin 2014), and CAM disclosures (Asbahr and Ruhnke 2019). Researchers express the concern that auditors may not achieve the assurance expectations on fair value decisions that are imposed by current regulatory and legal requirements. I extend the current research of auditors' fair value decisions by investigating whether and how auditors' judgment and decisions are affected when *both* auditors and management disclosures are provided.

### **3.3 Theory and Hypotheses Development**

#### *3.3.1 Discounting and Augmentation*

Psychology literature documents “discounting” and “augmentation” principles under attribution theory. Accordingly, the principles operate when two causes are present simultaneously which can explain a given effect (Kelley 1971). Specifically, discounting suggests that the weight of a cause or factor to an effect may be judged to be diminished due to existence of another factor, or factors, responsible for the same effect. By contrast, augmentation occurs when greater weight or importance is placed on the role of a factor causing an effect (i.e., a facilitative cause) if another competing factor is present that inhibits the effect (i.e., the inhibitory cause) (Kelley 1971).

According to Kelley (1971), augmentation operates when discounting of a facilitative cause is anticipated, such that the role of the facilitative cause will be enhanced as a result. This effect is also consistent with “strategic exaggeration” in disclosure research (Cain, Loewenstein, and Moore 2005; Jamal 2012; Jamal, Marshall, and Tan 2016).<sup>36</sup> For example, a person’s ability (facilitative cause) to accomplish a task is likely to be rated higher when the task difficulty (inhibitory cause) is high compared to when it is low (Kelley 1971). The above effects are highly relevant in considering potential effects of disclosures in the current regulatory setting of auditing fair value estimates, in which auditors encounter management disclosures and there is a requirement for expanded audit disclosures. Specifically, I posit that these disclosures can have different effects on auditor reactions and behaviours, including materiality judgments.

### 3.3.2 *Management Uncertainty Disclosures*

Management uncertainty disclosures provide users of financial statements with the information necessary to understand and assess accounting information.<sup>37</sup> Empirical evidence shows that management disclosures have the potential to influence auditors’ materiality judgment and fair value decisions due to moral licensing (Griffin 2014). Specifically, auditors tend to require less fair value adjustments when management disclosures explain the subjectivity of measurement inputs and the imprecision of outputs with a range estimate. Griffin (2014) argues that when making materiality fair value judgment decisions, auditors acknowledge management’s effort to supplement information for users about management insights and estimation considerations about fair value measures. Auditors feel less responsible when they have exercised professional duty to ensure that sufficient important information

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<sup>36</sup> Strategic exaggeration suggests that professionals tend to strengthen their advice when they anticipate that advice recipients or audience are likely to discount it (Cain et al. 2005). This is common in a bargain situation where a seller often raises the asking price in anticipating a lowered offer from a buyer.

<sup>37</sup> Uncertainty information includes discussions of categories of input subjectivity and a range estimate suggesting output imprecision with multiple possible estimation outcomes of the financial statements (Griffin 2014).

about measurement uncertainty is made available to forewarn investors via management disclosures. Thus, auditors are more likely to make less conservative fair value decisions under these conditions (Griffin 2014; Libby, Rennekamp, and Seybert 2015).

### 3.3.3 *Materiality Disclosures*

Auditors apply materiality through the audit process to ensure that quality information is provided while taking a users' perspective of materiality (DeZoort, Holt, and Stanley 2019). Specifically, the auditors are responsible for ensuring that the audited financial information is reasonably reliable for decision-making with the application of a chosen level of quantitative audit materiality of an audit (e.g., Acito, Burks, and Johnson 2009; Eilifsen et al. 2020). The quantitative materiality level determines the amount of accounting errors that are assumed by the auditors to be material to influence users' decisions. Accordingly, audit specific materiality information is considered relevant and important for users for evaluating risks and the quality of financial reporting (Christensen, Eilifsen, Glover, and Messier 2020).

Disclosing audit materiality considerations is believed to be useful for investors to better understand the concept of materiality and facilitate their assessment of financial information (PCAOB 2011; FRC 2013), and therefore may contribute to narrowing the existing information gap<sup>38</sup> (e.g., Coram, Mock, Turner, and Gray 2011; IAASB 2011; Mock, Bédard, Coram, Espahbodi, and Warne 2013; FRC 2016). In some jurisdictions, regulators have responded to calls for audit materiality information (Singh and Peters 2015; FRC 2013). For example, auditors are required to provide materiality disclosures in the audit report by regulators in the UK and the Netherlands. The PCAOB and IAASB have been monitoring and evaluating the appropriateness of such requirements for future implementation in the US and more widely (IAASB 2015a; 2015b; 2015c; PCAOB 2017).

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<sup>38</sup> The information gap refers to the differences between the information that financial statement users desire and the information that is accessible and available to them (IAASB 2011; Mock et al. 2013).

Auditors exercise professional judgment when establishing and applying materiality. Audit specific information about materiality considerations is relevant for assessing and evaluating the risks of financial information and is therefore largely welcomed by users (Singh and Peters 2015). Disclosure requirements of audit materiality aim to increase transparency of audit work regarding materiality (FRC 2013). Materiality disclosures allow the auditors to communicate audit specific information regarding materiality applications and considerations during an audit with intended users, further indicating the professional work of the auditors and possibly also improving perceptions of audit effort by users.

#### 3.3.4 *Materiality Disclosures and Uncertainty Disclosures*

When auditing fair value estimates, management uncertainty disclosures and audit materiality assessments are both important for auditors to assess and determine the misstatement risks of financial statements. However, these two disclosures are competing factors in maintaining the professional role of auditors in the assessment of the reasonableness of financial reports. Materiality disclosures provide audit materiality considerations that are important for users when making their own materiality judgments (e.g., FRC 2013; Christensen et al. 2020). Arguably, by describing misstatement risks using quantifiable measures, quantitative audit materiality information establishes a benchmark for users when assessing the uncertainty risk of the financial statements as a whole, indicating a level of “precision” of the reported information (Eilifsen et al. 2020). The fact that audit materiality disclosures are made by the auditor reinforces the professional role of the auditor in ensuring reasonable financial information. Accordingly, materiality disclosures serve as a facilitative cause for auditors in fulfilling their role in aiming to ensure the integrity of financial statements.

By contrast, uncertainty disclosures provide primary financial information regarding fair value estimates (Dennis, Griffin, and Zehms 2019). Uncertainty disclosures discuss management considerations about significant accounting estimates, presenting to users the

risks of misstatements within the financial statements (Kelton and Montague 2018). Essentially, uncertainty footnotes increase the salience of measurement uncertainty of fair value estimates (e.g., Nelson, Smith, and Palmrose 2005; Griffin 2014) and challenge the reliability of the financial information. Arguably, uncertainty disclosures by management may also be seen by auditors as a means that diminish the auditor's role in aiming to ensure the reasonableness of the financial report. The auditor's discussion of misstatement risk may be seen as redundant if the same risk is disclosed by management in uncertainty disclosures. By contrast, the auditor's discussion of misstatement risk may be seen to be of greater significance when it has not been disclosed by management. As a result, uncertainty disclosures by management may be seen by auditors as a factor that diminishes their role for quality reporting in the eye of the users. As such, materiality and uncertainty disclosures can be competing factors that add to or detract from the perceived role of the auditors to ensure the reasonableness of financial statements.

Both discounting and augmentation principles can influence auditors' judgment and decisions when these two competing disclosures are presented during auditing of fair value estimates. When management uncertainty disclosures are provided, a discounting effect of audit materiality disclosures can be expected. Auditors may perceive that their role in ensuring quality financial reporting is diminished as a result of the significant measurement uncertainty conveyed through management's uncertainty disclosures. Anticipating such discounting, auditor judgments may become susceptible to the augmentation effect. That is, in providing reasonably reliable financial information to users, auditors may judge the efficacy of their materiality disclosures (i.e., indicating a certain level of precision within the financial statements) to be greater in response to the perceived discounting effect on their assurance role by users to management disclosures. Accordingly, the augmentation effect may operate in the case of auditing fair value estimates, such that auditors may perceive greater accountability for ensuring reasonable financial reporting, and make more conservative audit fair value decisions

when both types of disclosures are presented. When making fair value decisions, auditors often have to decide: 1) whether to require an adjustment for a detected fair value misstatement; and if so, 2) what the dollar amount adjustments would be (Griffin 2014). Therefore, I predict that:

**H1:** Auditors feel more accountable for ensuring the reasonableness of financial statements when both materiality disclosures and management uncertainty footnotes are provided compared to when only one type of disclosure is provided.

**H2:** Auditors are more likely to require fair value adjustments when both materiality disclosures and management uncertainty footnotes are provided compared to when only one type of disclosure is provided.

**H3:** Auditors are more likely to require a greater amount of fair value adjustments when both materiality disclosures and management uncertainty footnotes are provided compared to when only one type of disclosure is provided.

### **3.4 Research Methods**

#### *3.4.1 Design*

I use a  $2 \times 2$  between-subjects research design to test the hypotheses. I manipulate audit materiality disclosures at two levels: required and not required, by explicitly informing the participants whether the audit standard requires or does not require audit materiality information to be included in the audit report. I adopt the management footnote manipulation from Griffin (2014) by differentiating management disclosures at two levels: expanded and standard. Specifically, expanded footnote conditions include an uncertainty discussion paragraph beyond a standard footnote discussion of the fair value measure, whereas standard footnotes conditions only include a paragraph discussing the requirements of the standard.



### 3.4.2 *Participants*

I recruited 43 participants through the Qualtrics Panel Management service.<sup>39</sup> Qualtrics provided quality control to ensure that the participants were practicing external auditors in the United States, all of whom had at least 3 years of external audit experience. In addition, I included two screening questions to ensure that participants had sufficient knowledge of risk based external audit. Qualtrics administered the survey experiment by randomly allocating each participant into an experimental condition. All participants completed the online experiment on the Qualtrics survey platform via a unique survey link distributed by Qualtrics, such that the survey could only be taken once by each participant.

The demographic information of participants is summarised in Table 3.1. Within the sample, ninety-six percent of participants had five or more years of audit experience, with currently serving work positions including partner/director (19%), senior manager (30%), manager (21%), and senior auditor (30%). Among the participants, ninety-five percent had at least one professional accounting/finance qualification and the majority of the participants had audit experience in industry sectors including financial services/insurance, manufacturing and consumer products/retail. Participants (41 out of 43) reported a mean of 8.22 about their familiarity with auditing fair value estimates.<sup>40</sup> I consider the sample as appropriate to reflect fair value decisions in practice, because auditors across ranks contribute to the final fair value decisions from evidence collection and determination of material misstatements to propose adjustments. It is therefore reasonable to assume that these participants understood the process and had related materiality judgment experience with fair value auditing.

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<sup>39</sup> Significant amount of effort was put in to recruit these participants by Qualtrics. Multiple recruitment panels were opened starting from a regional location then to the entire country. The duration of the recruitments was more than nine months.

<sup>40</sup> Participants' self-reported familiarity with auditing fair value estimates under FAS 157 Fair Value Measurements is measured on a 10-point Likert scale with '1' = "Not familiar" and '10' = "Extremely familiar".

All participants received the same survey information page followed by case materials at the beginning of the experiment. Then, participants were randomly assigned into an experimental manipulation condition. Lastly, participants responded to the survey questions and demographic questions to complete the survey.

### 3.4.3 *Case Materials*

I developed the case material by adopting the “more subjective and more imprecise” fair value measurement experiment condition of Griffin (2014).<sup>41</sup> This setting requires intensive exercise and considerations in applying audit materiality (Bell and Griffin 2012), therefore it allows us to capture the auditor materiality related judgments and discretions, and the behavioural impacts of making transparent a key materiality consideration – the overall materiality threshold. The case materials provided company background information about an audit client, ABC Integrated Products, Ltd, which is a profitable company with stable financial growth for the past five years. A fair value asset impairment audit task was presented detailing the client’s recognised fair value impairment and the difference to the estimates of the audit firm’s specialist. The fair value was derived from highly subjective measures using Level 3 inputs under the SFAS No. 157 fair value measurement input hierarchy and a wide range estimate of \$1,000,000 by the firm specialists to describe the significant degree of imprecision of the fair value measure.<sup>42</sup>

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<sup>41</sup> Permissions to use the survey material have been granted by the author.

<sup>42</sup> According to the audit standards (i.e., AS 2501; AS 2810.13), auditors shall require an adjustment between the recognised amount to the nearest boundary of the range. The \$1,000,000 range estimate by the audit firm specialist suggests a possible misstatement of the fair value estimate of between \$200,000 to 1,200,000.

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**TABLE 3.1****Demographic Information for Participants**

<b>External Audit Experience in Years</b>	<b>Participants</b>	<b>%</b>
10 years and above	11	26
5 to 10	30	70
3 to 5	2	4
Total	43	100
<b>Rank</b>		
Partner/Director	8	19
Senior Manager	13	30
Manager	9	21
Senior Auditor	13	30
Total	43	100
<b>At Least One of the Following Qualifications</b>		
AICPA/CFA/CMA/CIA/CFE	41	95
<b>Familiarity with Auditing Fair Value Estimates</b>		
Responded Participants	41	95
(Mean)	(8.22)	
<b>Industry</b>		
Financial Services/Insurance	34	
Manufacturing	12	
Consumer Products/Retail	11	
Technology (electronics, software, services, etc.)	10	
Construction/Real Estate	9	
Energy	9	
Government/Not-for-profit	6	
Communication/Media	3	
Healthcare/Pharmaceuticals	3	

**Note:** Table 3.1 presents the demographic profile of the auditors who participated in the experiment. Participants were all practicing auditors with at least three years of external audit experience. Demographic questions of “audit experience in years” and “current position in the firm” are single choice questions. For questions of “qualifications” and “industry of significant audit experience”, participants were asked to select all options that are applicable to them. Participants’ self-reported familiarity with auditing fair value estimates under FAS 157 Fair Value Measurements is measured on a 10-point Likert scale with ‘1’ = “Not familiar” and ‘10’ = “Extremely familiar”.

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Adapted from Griffin (2014), the case materials included the overall quantitative audit materiality threshold of the financial statements determined by this audit engagement with both magnitude (\$1,000,000) and percentage (5%) benchmarks.<sup>43</sup> In addition, consistent with the current auditing environment, the case materials also informed participants that AS 3101 has been effective since 2019, therefore CAMs would be disclosed where applicable.

#### 3.4.4 *Dependent Variables*

I measure three dependent variables. I adopt the accountability measure from Kang, Trotman, and Trotman (2015) to measure auditors' perceived accountability to ensure reasonableness of the financial statements, by asking participants to rate on a 10-point Likert scale about "to what extent did you feel accountable to ensure the reasonableness of the financial statements", from '1' being "significantly not accountable" to '10' being "significantly accountable". In addition, I adopt the two fair value decision measures from Griffin (2014), which are the likelihood of requiring fair value adjustments and the proposed adjustment amount. The likelihood of requiring an adjustment measure requires participants to rate their likelihood of requiring for a fair value adjustment on a 10-point Likert scale, with '1' = "very low likelihood of requiring adjustments" and '10' = "very high likelihood of requiring adjustments". The adjustment amount question follows the likelihood of requiring adjustment decision by asking participants to propose a dollar amount of fair value adjustments. Finally, the CAM decision measure is provided in all CAM conditions. This measure asks participants to rate how likely that they would disclose the fair value matter as a CAM in the audit report

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<sup>43</sup> In practice, both magnitude and percentage materiality thresholds were disclosed in the materiality disclosures in the UK and the most common overall threshold is 5% of profit before tax/adjusted profit before tax (FRC 2017).

on a 10-point Likert scale, with '1' = "very low likelihood of disclosing it as a CAM" and '10' = "very high likelihood of disclosing it as a CAM".

#### 3.4.5 *Independent Variables*

The two independent variables that are manipulated are materiality disclosures and management footnotes. Specifically, materiality disclosures are manipulated at two levels, by stating whether the audit materiality threshold \$1,000,000 and 5% of net profit before taxation *is required (or not required)* to be included in the audit report by the audit standard under the experimental conditions as shown below.

The 'No Materiality' conditions are presented as follows:

**"As is consistent with current auditing standards, the application of materiality will NOT be included in the audit report."**

The 'Materiality' conditions are presented as follows:

**"In this case scenario, I would like you to consider a hypothetical situation where there is a new auditing standard that requires materiality thresholds to be disclosed in the audit report similar to what currently occurs in the United Kingdom."**

**As noted in the Background Information, the materiality threshold applied during this audit is determined to be \$1,000,000, which is 5% of Net Profit before Taxation. Under the new auditing standard, the application of materiality will be included in the audit report."**

I adopt the management footnote manipulation by following Griffin (2014). The footnote conditions are at two levels. In the standard footnote conditions, the client provided disclosure compliance information is simply that the fair value was determined under SFAS No. 157. Whereas the expanded management footnotes conditions provide a standard footnote as well

as an additional paragraph about fair value uncertainty information. The uncertainty information includes discussions that the measure is derived from Level 3 measurement inputs based on “discounted cash flow model” and the measure estimated to be in a \$ 3–4 million range.

### **3.5 Results**

#### *3.5.1 Manipulation Checks*

I obtained 46 complete responses from Qualtrics. Of those responses, three participants failed both manipulation check questions for the two independent variables. I excluded all three from the sample, resulting in the final sample of 43 participants.

#### *3.5.2 Hypotheses Tests*

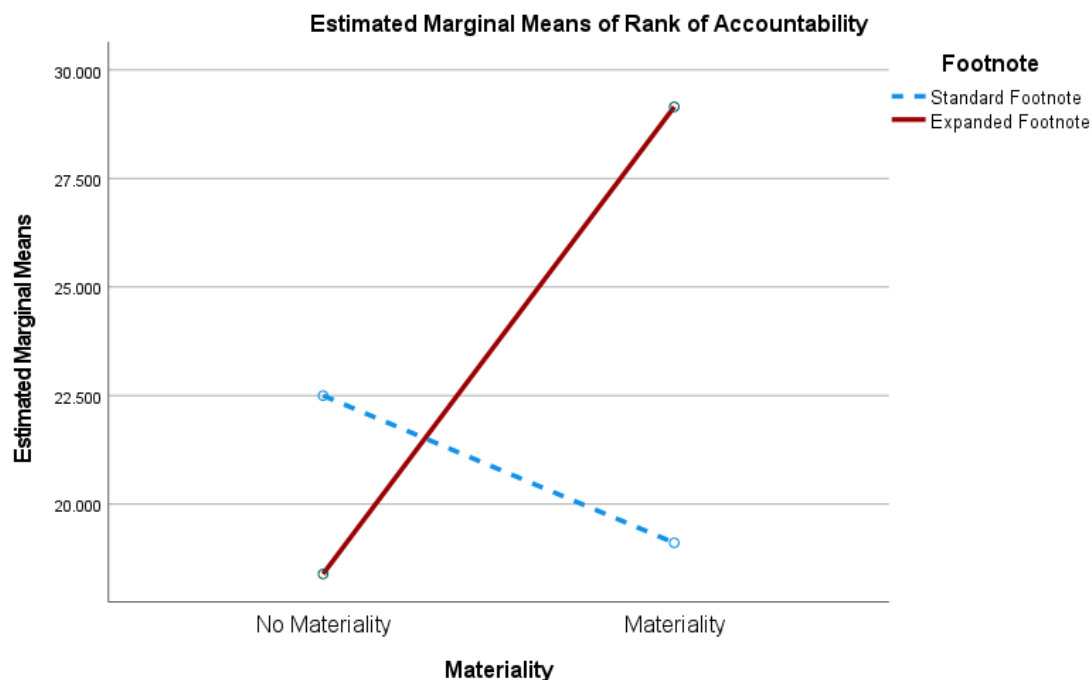
H1 predicts that auditors feel more accountable when both materiality disclosures and management uncertainty footnotes are provided than when only one of these disclosures is provided. Figure 3.1 illustrates experiment results for ranked (and actual) values of auditors’ perceived accountability, which is consistent with the predictions. Panel A of Table 3.2 summarises the descriptive statistics results of the ranked accountability measure regarding auditors’ perceived accountability.<sup>44</sup> Panel B of Table 3.2 presents the analysis of variance (ANOVA) results of the accountability measure. As expected, there is a significant interaction effect for *Materiality* × *Footnotes* ( $F = 3.65, p = 0.031$ ). I then perform simple effect tests for the interaction effect. As shown in Panel C of Table 3.2, the results of simple effect tests reveal that auditors’ perceived accountability is higher when both materiality disclosures and uncertainty disclosures are provided, compared to when only uncertainty disclosures are

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<sup>44</sup> Due to the sample size and the nonparametric nature of most dependent variable measures, I rank-transform all measures and perform univariate analysis for the rank transformed data to address concerns of lack of normality of the ordinal data. For consistency, I also rank-transform the measure for fair value adjustment amount decisions (Messier, Kachelmeier, and Jensen 2001).

provided ( $F = 4.77, p = 0.018$ ). Further, when materiality is disclosed, uncertainty disclosures result in higher perceived accountability, compared to when a standard footnote is provided ( $F = 3.37, p = 0.037$ ). These results support H1, suggesting that auditors' perceived accountability is subject to an augmentation effect when both materiality disclosures and uncertainty disclosures are available for users.

**FIGURE 1.1 – Ranked Perceived Accountability**



**Note:** Figure 3.1 plots observed means for ranked values of auditors' perceived accountability. Auditors indicate their perceived accountability on a ten-point Likert scale to the question "To what extent did you feel accountable to ensure the reasonableness of the financial statements?", where '1' = "significantly not accountable" and '10' = "significantly accountable". Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 3.2**

**Two-way 2 × 2 ANOVA of Materiality and Footnotes Effect on Accountability Perception**

**Panel A: Descriptive Statistics – Accountability rank value mean (Actual Mean) [standard deviation]**

Materiality Conditions	Footnotes Conditions						
	<u>n</u>	Footnote		<u>N</u>	Expanded Footnote		Total
No Materiality	10	22.50 (7.90)		14	18.39 (7.64)		20.10 (7.75)
		[18.39] [2.28]			[12.22] [1.65]		[12.77] [1.89]
Materiality	9	19.11 (8.00)		10	29.15 (9.00)		24.39 (8.53)
		[11.84] [1.23]			[9.14] [0.94]		[11.43] [1.17]
Total	19	20.89 (7.95)		24	22.88 (8.21)		22.00 (8.09)
		[12.65] [1.81]			[12.10] [1.53]		[12.24] [1.65]

**Panel B: Two-way ANOVA model of Accountability Measure**

Source of Variation	SS	df	MS	F	<i>p</i> <sup>45</sup>
Materiality	141.92	1	141.92	1.00	0.162
Footnotes	91.98	1	91.98	0.65	0.213
Materiality * Footnotes	523.11	1	523.11	3.65	0.031
Error	5524.50	39	141.65		

R Squared = .122 (Adjusted R Squared = .055)

**Panel C: Simple effect tests for Accountability**

Source of Variation	F	<i>p</i>
Effect of materiality disclosure given a standard footnote	3.39	0.270
Effect of materiality disclosure given an expanded footnote	4.77	0.018
Effect of expanded footnote under No Materiality conditions	0.70	0.205
Effect of expanded footnote under Materiality conditions	3.37	0.037

<sup>45</sup> Reported *p*-values in this table are one-tailed.

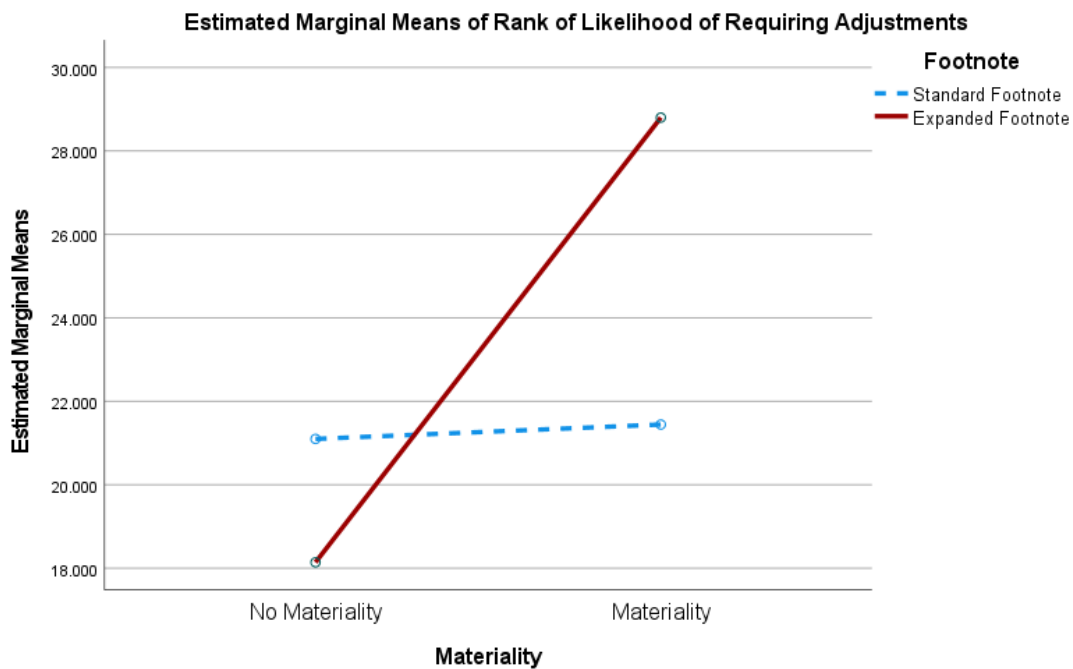
Table 3.2 presents analysis of auditors' perceived accountability. The dependent variable is perceived accountability, for which participants were asked to respond to the following question on a ten-point Likert scale: "To what extent did you feel accountable to ensure the reasonableness of the financial statements?", where '1' = "significantly not accountable" and '10' = "significantly accountable".

Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.



H2 and H3 examine whether auditors' fair value decisions are affected by the augmentation effect when both materiality disclosures and uncertainty disclosures are provided concurrently. I predict that auditors' fair value decisions are more conservative when both disclosures are provided compared with when only one form of disclosure is provided. I use two measures for auditors' fair value decisions: 1) H2 – the likelihood of requiring for adjustments, and 2) H3 – the dollar amount of adjustments.

**FIGURE 3.2 – Ranked Likelihood of Requiring Audit Adjustments**



**Note:** Figure 3.2 presents the means of the ranked likelihood of requiring fair value adjustment. Auditors provided their assessments of their likelihood to require fair value adjustments, when responded to the following question: “How likely is it that you would require management to make an adjustment to the recorded value of any dollar amount?”, where ‘1’ = “very low likelihood of requiring adjustments” and ‘10’ = “very high likelihood of requiring adjustments”. Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 3.3****Two-way 2 × 2 ANOVA of Materiality and Footnotes Effect on Fair Value Decisions****Panel A: Descriptive Statistics – Likelihood of Requiring Adjustment Rank Value Mean (Actual Mean) [Standard Deviation]**

Materiality Conditions	n	Footnotes Conditions			
		Footnote		Expanded Footnote	
No Materiality	10	21.10 (7.50)	14	18.14 (7.43)	19.38 (7.46)
		[14.15] [2.55]		[11.70] [1.79]	[12.57] [2.09]
Materiality	9	21.44 (7.89)	10	28.80 (8.90)	25.32 (8.42)
		[11.44] [1.76]		[10.90] [1.20]	[11.48] [1.54]
Total	19	21.26 (7.68)	24	22.58 (8.04)	22.00 (7.88)
		[12.58] [2.16]		[12.36] [1.71]	[12.33] [1.91]

**Panel B: Two-way ANOVA Model of Ranked Likelihood of Requiring Adjustment Decisions**

Source of Variation	SS	df	MS	F	p <sup>46</sup>
Materiality	316.40	1	316.40	2.17	0.075
Footnotes	50.57	1	50.57	0.35	0.280
Materiality * Footnotes	278.02	1	278.02	1.90	0.088
Error	5699.44	39	146.14		

R Squared = .107 (Adjusted R Squared = .038)

**Panel C: Simple Effect Tests for Ranked Likelihood of Requiring Adjustment Decisions**

Source of Variation	F	p
Effect of materiality disclosure given a standard footnote	0.00	0.475
Effect of materiality disclosure given an expanded footnote	4.53	0.020
Effect of expanded footnote under No Materiality conditions	0.35	0.280
Effect of expanded footnote under Materiality conditions	1.75	0.097

<sup>46</sup> Reported *p*-values in this table are one-tailed.

Table 3.3 presents analysis of auditors' likelihood of requiring for fair value adjustments. The dependent variable is the likelihood of requiring for fair value adjustments, for which participants were asked to respond to the following question on a ten-point Likert scale: "How likely is it that you would require management to make an adjustment to the recorded value of any dollar amount?", where '1' = "very low likelihood of requiring adjustments" and '10' = "very high likelihood of requiring adjustments".

Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

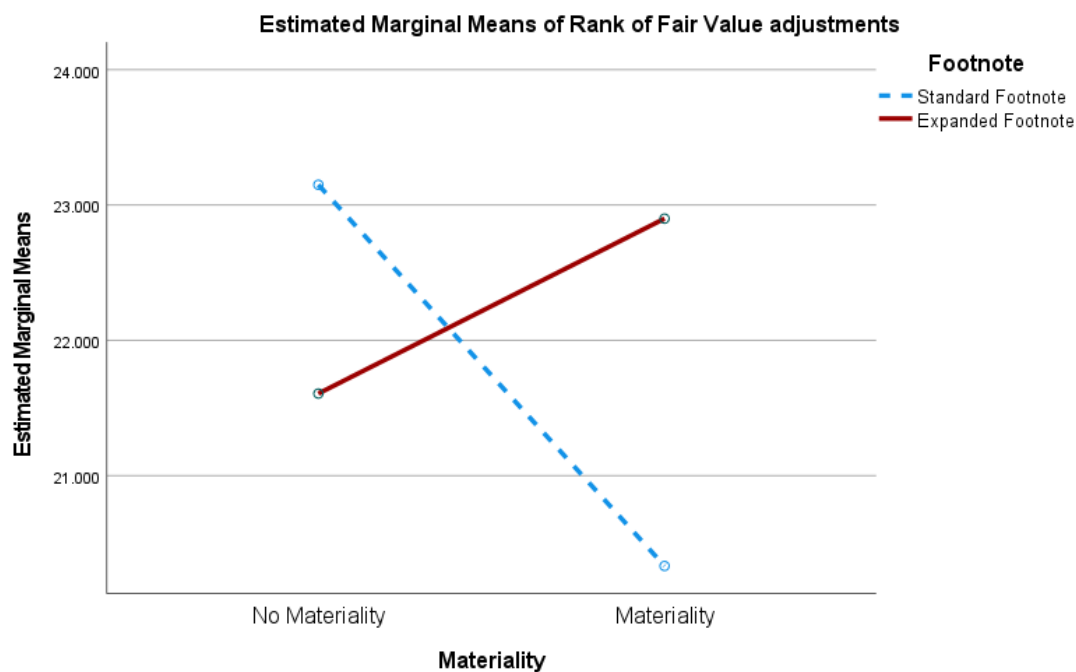
Figure 3.2 graphically depicts the results for the likelihood of requiring adjustments, showing that results are consistent with the predictions for H2.

Panel A of Table 3.3 provides descriptive statistics for H2 in both ranked and actual values of the likelihood of requiring adjustment decisions. I then conduct univariate analysis and simple effect tests for the likelihood of requiring adjustment. Results of the ANOVA model in Panel B of Table 3.3 show that there is a marginally significant interaction effect ( $F = 1.90, p = 0.088$ ) for *Materiality*  $\times$  *Footnotes* and a marginally significant main effect for materiality disclosures ( $F = 2.17, p = 0.075$ ). Simple effect test results of Panel C Table 3.3 reveal that auditors' tendency to require adjustments is higher when both materiality and uncertainty disclosures are provided than when only an uncertainty footnote is provided ( $F = 4.53, p = 0.020$ ). Additionally, when materiality is disclosed, uncertainty disclosures result in marginally higher tendency to require adjustment compared to when a standard footnote is provided ( $F = 1.75, p = 0.097$ ). Hence, the results support H2 that auditors are more likely to require their clients to make adjustments when both materiality disclosures and management uncertainty footnotes regarding the fair value are presented concurrently than when each is presented separately, suggesting a possible augmentation effect from when the two types of disclosures are present.

H3 predicts that auditor proposed adjustment amount is higher when both materiality and uncertainty disclosures are provided than when one type of disclosures is provided. Table 3.4 and Figure 3.3 show the analysis results. For fair value adjustment amount decision, the interaction term is insignificant ( $F = 0.26, p = 0.306$ , Panel B of Table 3.4). In addition, simple effect tests for planned comparisons are insignificant for both disclosures present condition compared with a materiality disclosure only ( $F = 0.06, p = 0.406$ , Panel C of Table 3.4), and both disclosure present condition compared to an uncertainty disclosure only ( $F = 0.19, p =$

0.335, Panel C of Table 3.4). Interestingly, Figure 3.3 graphically illustrates the cross-over interaction effect for *Materiality* × *Footnotes* for auditors’ adjustment amount decisions. However, the results are insignificant. As such, the results suggest that auditors proposed adjustment amounts do not differ due to the two types of disclosures in the setting. Therefore, H3 is not supported.

**FIGURE 3.3 – Ranked Fair Value Adjustment Decisions**



**Note:** Figure 3.3 presents the means of the ranked auditors’ fair value adjustment amount decisions. The dependent variable is the proposed fair value adjustment amount, for which participants were required to respond to the following question: “Please indicate the most likely dollar amount of the required adjustment”. Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 3.4**

**Two-way 2 × 2 ANOVA of Materiality and Footnotes Effect on Fair Value Decisions**

**Panel A: Descriptive Statistics – Fair Value Adjustment Rank Value Mean (Actual Mean) [Standard Deviation]**

Materiality Conditions	n	Footnotes Conditions			
		Footnote	N	Expanded Footnote	Total
No Materiality	10	23.15 (\$306,275) [15.04] [\$411,577]	14	21.61 (\$172,334) [13.22] [\$256,809]	22.25 (\$242,829) [13.71] [\$344,573]
Materiality	9	20.33 (\$218,629) [12.96] [\$324,336]	10	22.90 (\$170,627) [10.05] [\$206,005]	22.15 (\$171,435) [11.78] [\$224,792]
Total	19	21.82 (\$255,148) [13.78] [\$357,339]	24	21.68 (\$198,628) [11.26] [\$276,854]	22.00 (\$218,159) [12.54] [\$305,535]

**Panel B: Two-way ANOVA Model for Ranked Fair Value Adjustment Decisions**

Source of Variation	SS	df	MS	F	p <sup>47</sup>
Materiality	6.07	1	6.07	0.04	0.425
Footnotes	2.74	1	2.74	0.02	0.500
Materiality * Footnotes	44.15	1	44.15	0.26	0.306
Error	6560.01	39	168.21		

R Squared = .007 (Adjusted R Squared = -.069)

**Panel C: Simple Effect Tests of CAM for Ranked Fair Value Adjustment Decisions**

Source of Variation	F	p
Effect of Materiality requirements given a standard footnote	0.22	0.320
Effect of Materiality requirements given an expanded footnote	0.06	0.406
Effect of expanded footnote under No Materiality conditions	0.08	0.388
Effect of expanded footnote under Materiality conditions	0.19	0.335

<sup>47</sup> Reported *p*-values in this table are one-tailed.

Table 3.4 presents analysis of auditors' fair value adjustment amount decisions. The dependent variable is the proposed fair value adjustment amount, for which participants were required to respond to the following question: "Please indicate the most likely dollar amount of the required adjustment".

Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

Taken together, the results of H2 are supportive of the decision requiring adjustments, but results for H3 are not supportive of the adjustment amount decision. Results for H2 indicate that auditors are more likely to make more conservative fair value decisions by requiring fair value adjustments when both materiality disclosures and uncertainty footnotes are provided, compared with when only management supplemented uncertainty disclosures are provided. However, the results of H3 suggest that auditors' proposed adjustment amounts may not differ.

Overall, the test results indicate that materiality disclosures and management uncertainty footnotes can jointly affect auditors' accountability perceptions and fair value decisions. In particular, auditors' accountability perceptions and their tendency to require adjustments are increased when auditors are required to disclose materiality information and management provide uncertainty footnotes. This is consistent with an augmentation effect from two competing causes, indicating that when both disclosures are present, auditors may consider that management uncertainty footnotes challenge the reliability of the financial information and their ability to provide assurance on the information. The results show that auditors are more likely to require clients to correct detected fair value misstatements and this is more likely to occur when audit materiality and uncertainty disclosures are provided at the same time.

### 3.5.3 *Additional Analyses*

I also examine the likelihood that these disclosures affect auditors' CAM disclosure decisions. I collected data on the CAM disclosure decision by asking the participants to rate the likelihood that they would disclose the fair value matter as a CAM.

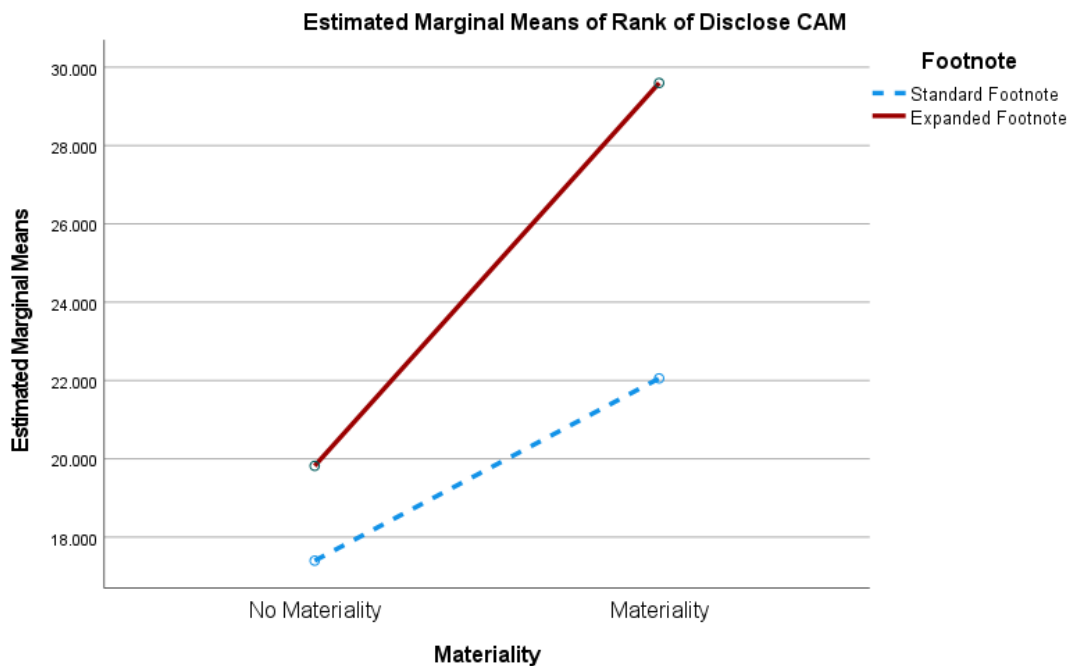
The ANOVA results for CAM disclosure decisions are presented in Table 3.5 and Figure 3.4.<sup>48</sup> Panel B of Table 3.5 shows that there is a significant main effect of materiality

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<sup>48</sup> For consistency with the analyses on the ordinal variables, I test on the ranked CAM decision values in the ANOVA model and report results in Table 3.5.

disclosures on auditors' CAM disclosure decisions ( $F = 3.80, p = 0.029$ ), suggesting that auditors are more likely to disclose a fair value CAM when materiality disclosures are reported than when they are not reported (ranked value means = 26.03 vs. 18.81). There is also a marginally significant footnote effect ( $F = 1.81, p = 0.093$ ), indicating that auditors' tendency to disclose a fair value CAM is higher when uncertainty disclosures are provided than when they are not provided (ranked value means = 23.90 vs. 19.61).

**FIGURE 3.4 – Ranked Likelihood of Disclosing a Fair Value CAM**



**Note:** Figure 3.4 presents the means of the ranked auditors' likelihood of disclosing the fair value as a CAM. The dependent variable is the likelihood of disclosing the fair value as a CAM, for which participants were asked to respond to the following question on a ten-point Likert scale: "How likely would you disclose this matter as a Critical Audit Matter in the audit report?", where '1' = "very low likelihood of disclosing it as a CAM" and '10' = "very high likelihood of disclosing it as a CAM". Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.

**TABLE 3.5**

**Two-way 2 × 2 ANOVA of Materiality and Footnotes Effect on CAM Decisions**

**Panel A: Descriptive Statistics – Likelihood of Disclosing a Fair Value CAM Rank Value Mean (Actual Mean) [Standard Deviation]**

Materiality Conditions	n	Footnotes Conditions						
		Footnote		N	Expanded Footnote		Total	
No Materiality	10	17.40 [12.86]	(5.80) [2.82]	14	19.82 [11.63]	(6.64) [2.06]	18.81 [11.94]	(6.29) [2.39]
Materiality	9	22.05 [11.23]	(7.22) [1.56]	10	29.60 [12.17]	(8.00) [2.40]	26.03 [12.05]	(7.63) [2.03]
Total	19	19.61 [12.02]	(6.47) [2.37]	24	23.90 [12.60]	(7.21) [2.27]	22.00 [12.39]	(6.88) [2.31]

**Panel B: Two-way ANOVA Model of Ranked Likelihood of Disclosing a Fair Value CAM**

Source of Variation	SS	df	MS	F	p <sup>49</sup>
Materiality	544.63	1	544.63	3.80	0.029
Footnotes	259.63	1	259.63	1.81	0.093
Materiality * Footnotes	68.61	1	68.61	0.48	0.247
Error	5589.83	39	143.33		

R Squared = .133 (Adjusted R Squared = .066)

**Panel C: Simple Effect Tests for Ranked Likelihood of Disclosing a Fair Value CAM**

Source of Variation	F	p
Effect of materiality disclosure given a standard footnote	0.72	0.202
Effect of materiality disclosure given an expanded footnote	3.89	0.028
Effect of expanded footnote under No Materiality conditions	0.24	0.314
Effect of expanded footnote under Materiality conditions	1.88	0.089

<sup>49</sup> Reported *p*-values in this table are two-tailed.

Table 3.5 depicts analysis of auditors' likelihood of disclosing the fair value as a CAM. The dependent variable is the likelihood of disclosing the fair value as a CAM, for which participants were asked to respond to the following question on a ten-point Likert scale: "How likely would you disclose this matter as a Critical Audit Matter in the audit report?", where '1' = "very low likelihood of disclosing it as a CAM" and '10' = "very high likelihood of disclosing it as a CAM".

Materiality conditions were manipulated at two levels, between-subjects, by explicitly indicating whether a materiality disclosure will be included in the audit report or will not be included. Footnotes conditions were manipulated at two levels, between-subjects, by including or not including an additional paragraph discussing the uncertainty about the fair value estimate in the management footnote.



I then conduct simple effect test to further investigate how materiality and uncertainty footnotes affect CAM decisions and present the results in Panel C of Table 3.5. As shown, the effect of materiality disclosures is significant on CAM disclosure decisions ( $F = 3.89$ ,  $p = 0.028$ ), such that when uncertainty footnotes are provided, auditors are more likely to disclose the fair value issue as a CAM when they are required to disclose materiality information than when they are not required to disclose materiality. In addition, there is also a marginally significant effect of uncertainty disclosures when materiality is required to be disclosed ( $F = 1.88$ ,  $p = 0.089$ , Panel C of Table 3.5), indicating that under the materiality disclosure reporting regime, auditors are more likely to disclose the fair value issue as a CAM when uncertainty footnotes are provided than when they are not provided.

Lastly, I provide a correlation matrix of all the measure variables in Table 3.6. I use Nonparametric Spearman correlation analysis for all the measures since all the measures are ordinal, except for the adjustment amount measure. The correlation results illustrate that measures of auditors' accountability perceptions, fair value adjustment requirement decisions and CAM disclosure decisions are positively correlated, suggesting that these audit judgments and decisions are likely to be influenced and linked simultaneously in the same direction in the experiment setting. Moreover, the requirement for adjustment decisions is also positively correlated with measures of perceived fair value significance, footnote usefulness, auditors' familiarity with fair value, and auditors' confidence with fair value estimates. Interestingly, the fair value adjustment amount measure does not appear to be correlated with any another measures.

**TABLE 3.6**

**Spearman Correlation Matrix for All Measured Variables**

	<b>Accountability</b>	<b>Require Adjust.</b>	<b>Adjustments</b>	<b>Disclose CAM</b>	<b>FV sign.</b>	<b>Footnote Usefulness</b>	<b>Familiarity FV</b>	<b>Experience</b>	<b>Experience Listed</b>	<b>Position</b>
<b>Require Adjustments</b>	0.555**									
<b>Adjustments</b>	-0.095	-0.107								
<b>Disclose CAM</b>	0.342*	0.445**	-0.172							
<b>FV significance</b>	0.641**	0.448**	-0.119	0.268						
<b>Footnote Usefulness</b>	0.614**	0.373*	0.045	0.122	0.701**					
<b>Familiarity FV</b>	0.630**	0.363*	-0.179	0.237	0.527**	0.432**				
<b>Experience</b>	0.277	0.237	0.253	0.061	0.146	0.358*	0.162			
<b>Experience Listed</b>	0.192	0.168	0.080	0.109	0.136	0.158	0.213	0.822**		
<b>Position</b>	0.056	0.070	0.095	0.040	-0.196	-0.164	-0.071	0.304	0.460**	
<b>Confidence FV</b>	0.712**	0.551**	-0.173	0.363*	0.699**	0.413**	0.707**	0.217	0.127	-0.191

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

### 3.6 Conclusion

I find evidence that materiality disclosures from auditors and uncertainty disclosures from management jointly affect auditors' accountability perceptions and fair value decisions. Specifically, the results show that audit materiality disclosures and management uncertainty disclosures interact to enhance auditors' perceived accountability to ensure the reasonableness of financial reports. The results also indicate that auditors are more likely to require their clients to correct misstatements when auditors are required to disclose materiality information and fair value measurement uncertainty is highlighted by management in the footnotes. In addition, I provide evidence that when fair value uncertainty is discussed in the management footnotes and when audit materiality is also provided in the audit report, auditors are more likely to disclose the fair value as a CAM in the expanded audit report. The findings suggest that providing audit materiality information in the audit report can affect auditors' materiality related judgments and decisions under the new audit reporting model.

The findings contribute to three streams of research. First, I extend research that investigates how disclosure preparers react to disclosure requirements (Dennis et al. 2019). I show that auditors' perceptions of their role in ensuring reasonable financial reports are strengthened due to the requirement for audit materiality disclosures *and* presence of management disclosures. In contrast to the moral licensing effect revealed in research pertaining to one type of disclosures (e.g., Griffin 2014; Asbahr and Ruhnke 2019), I show that the effects produced by the two types of disclosure can interact to enhance auditors' accountability reactions to disclosure requirements.

Second, the research adds to current audit materiality disclosures research by offering evidence on the effect of materiality disclosures on auditors' judgments and decisions (Christensen et al. 2020; Eilifsen et al. 2020). To the best of my knowledge, this study is one of the first to find evidence pertaining to the influence of materiality disclosures effects in the

audit report on auditor reactions and behaviours. The study offers important implications from the auditors' perspective by showing that auditors' accountability perceptions and materiality judgments and decisions can be affected by disclosures from both auditors and management on financial reporting issues.

Finally, the study contributes to audit fair value research by providing evidence about changes of auditors' materiality judgments and decisions in different disclosure requirement conditions. Prior research suggests that management can strategically supplement uncertainty information in the footnotes to avoid stringent audit fair value adjustment decisions (Griffin 2014). However, I show that auditors may become more conservative when uncertainty information is disclosed by management *and* when auditors are required to disclose materiality considerations.

The study informs the current debates among stakeholders concerning possible implementation of audit materiality disclosures in regulation. The setting enables us to investigate how auditors' judgments and decisions may be affected due to the materiality disclosure requirement. I find that auditors' fair value decisions differ as a result of this requirement. Specifically, when audit materiality disclosures are required to be disclosed in audit reports, auditors are more likely to require fair value adjustments when a fair value management footnote is provided than when it is not provided. The finding suggests that under the current fair value disclosure requirements (ASC Topic 820), high quality audited fair value estimates can be expected when audit materiality disclosures are required to be disclosed.

Additionally, I provide evidence about how CAM decisions are influenced in the new audit reporting model. I show that auditors are more likely to disclose a fair value CAM in the materiality disclosure regime. In addition, I find that fair value CAM disclosure decisions are not a trade-off for the fair value adjustment requirement decision when both materiality

disclosures and uncertainty footnotes are provided. This finding is important for standard setters in evaluating the quality of financial reporting as some research suggests that CAM disclosures may be perceived as a “disclaimer” of the auditors to not require misstatement adjustments (Kachelmeier, Rimkus, Schmidt, and Valentine 2020).

The study is subject to some limitations. First, I only use the overall materiality threshold in the setting to suggest audit materiality consideration. Future research may consider other audit materiality thresholds, such as performance materiality, which can be more closely related to audit fair value materiality judgments and may provide further insights into auditors’ application of the materiality concept in making fair value decisions. Second, I only consider fair value decisions for a certain period. However, the setting does not reflect auditors’ reaction to recurring fair value and management disclosures. It would be beneficial to also consider the firms’ prior fair value decisions in future studies. Third, the evidence about the audit CAM decision comes from the United States, an environment where CAM disclosures are relatively new. It is possible that auditors’ decisions may be influenced by the duration of the presence of CAMs (Vinson and Robertson 2019). Future research may consider capturing auditors’ decision trends for fair value CAMs and fair value adjustment decisions over several periods. Lastly, the study is limited due to the sample size, although the participants were reasonably experienced. Despite these limitations, the study provides important evidence that materiality disclosures and management uncertainty disclosures jointly affect auditors’ judgments and decisions, which can result in unintended consequences on auditors’ fair value decisions.

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## **APPENDIX B – INSTRUMENT 2**

### **SURVEY MATERIALS**

#### **Company Background – [For All Conditions]**

##### **ABC Integrated Products, Ltd.**

The client, ABC Integrated Products, Ltd. is a publicly traded manufacturing company. ABC Integrated is a profitable company with stable financial growth for the past five years. Financial indicators of the company, such as liquidity and leverage are at industry average. Prior audit engagements show that there is no identifiable material weaknesses in the company's internal control.

Materiality was established at \$1,000,000, which is 5% of Net Profit before taxation for the financial statements overall. During the audit, the materiality level is agreed to be appropriate. During the current audit, all standard tests have been completed by competent staff of the audit team and the results have been reviewed to the satisfaction. Other than the unresolved matter described on the following page, there are no further adjustments being considered for the financial statements. In addition, there are no significant qualitative materiality factors identified in the audit during this year.

The client believes that the financial statements are presented fairly, and insists on receiving an unqualified opinion as soon as possible. The client is firmly opposing any proposed audit adjustments and is pressuring you to waive all the adjustments.

## **Audit Background Information**

### **Critical Audit Matters - [For All Conditions]**

Currently, Auditing Standard PCAOB AS 3101, “*The Auditor’s Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion*”, has been effective since December 2019. AS 3101 requires auditors to disclose Critical Audit Matters that in the auditor’s professional judgment, are material to the financial statements and involves especially challenging, subjective, or complex auditor judgment.

## **Materiality Disclosure Manipulation**

*(The manipulated paragraph below is placed under each corresponding condition in the beginning of the audit workpaper)*

### **Materiality Absent – [For Materiality Disclosures Absent Conditions Only]**

**As is consistent with current auditing standards, the application of materiality will NOT be included in the audit report.**

### **Materiality Present – [For Materiality Disclosures Present Conditions Only]**

**In this case scenario, I would like you to consider a hypothetical situation where there is a new auditing standard that requires materiality thresholds to be disclosed in the audit report similar to what currently occurs in the United Kingdom.**

**As noted in the Background Information, the materiality threshold applied during this audit is determined to be \$1,000,000, which is 5% of Net Profit before taxation. Under the new auditing standard, the application of materiality will be included in the audit report.**

### **Asset impairment Workpaper – [For All Conditions]**

Due to product innovation and revision, the client identified a piece of manufacturing equipment that may be impaired at the end of the reporting period. According to SFAS No. 144 “*Accounting for the Impairment or Disposal of Long-lived Assets*”, the client measured the recoverable amount of the equipment and determined that the carrying value of this equipment exceeded its recoverable amount. The client applied SFAS No. 157 “*Fair Value Measurements*” to determine the fair value of the equipment. Due to an absence of relevant observable inputs, such as quoted price in an active market for this type of equipment or its similar kind, the client used unobservable inputs to determine the fair value. Unobservable inputs are categorized as level 3 inputs under SFAS No. 157 fair value hierarchy. The client developed unobservable inputs and valued this equipment based on estimated future cash flows. The recorded value of this equipment was at \$ 3,450,000.

The audit team involved the firm’s valuation specialists to evaluate the client’s estimate. The firm’s specialists provided the following advice:

*“I measure these assets based on discounted future cash flows, as there is no active market for these assets. The estimated range for these assets is approximately between \$ 2,250,000 and \$ 3,250,000. This range was developed using level 3 inputs under SFAS No. 157. The estimate is lower than the client’s, because I take a different view of the industry prospects from the audit client.”*

## **Client's Draft footnote Manipulation**

### **Standard Footnote – [For Standard Footnote Conditions Only]**

The Company applies SFAS No. 157 *Fair Value Measurements (FAS 157)*, where warranted for both financial and nonfinancial assets. FAS 157 defines fair value, establishes a framework for measuring fair value that is required or permitted by other accounting standards, and expands disclosures about fair value measurements.

### **Uncertainty Footnote – [For Uncertainty Footnote Conditions Only]**

The Company applies SFAS No. 157 *Fair Value Measurements (FAS 157)*, where warranted for both financial and nonfinancial assets. FAS 157 defines fair value, establishes a framework for measuring fair value that is required or permitted by other accounting standards, and expands disclosures about fair value measurements.

Due to an unobservable market, the recoverable amount of the equipment is estimated to be between \$3 and \$4 million, by using a discounted cash flow model prepared under a value – in – use based approach. In addition, a sensitivity analysis has been undertaken to examine the effect of any changes in the key variables, which would result in a change in the assessed value in use. The recognized amount represents the company's best estimate from within that range.

### Field Senior's Conclusion – [For All Conditions]

The client's fair value measurement is different from the firm specialists'. The specialists' range estimate suggests that the client's recorded asset impairment loss should increase by approximately \$ 200,000 to \$ 1,200,000. The client believes that its own estimate is more appropriate based on present facts and circumstances. Thus, the different estimates result in the proposal of the following adjustment amount to the client's financial statements:

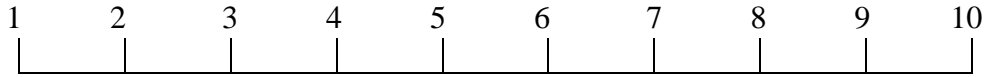
Dr Impairment Loss           \$ xx

Cr Accumulated Depreciation and Impairment Losses           \$xx  
(Impairment loss on asset)

## SURVEY QUESTIONS

### Survey Questions:

1. Given the audit environment presented to you in the case material, to what extent did you feel accountable to ensure the reasonableness of the financial statements? Please indicate the answer by using the following scale, with 1 being “significantly not accountable” and 10 being “significantly accountable”.



Significantly  
not  
accountable

Significantly  
accountable

### Misstatement Adjustment Decisions

2. Based on the case information provided about the client and the firm’s partial workpaper, how likely is it that you would require management to make an adjustment to the recorded value of any dollar amount? Please indicate the answer by using the following scale, with 1 being “very low likelihood of requiring adjustments” and 10 being “very high likelihood of requiring adjustments”.



Very low  
likelihood of  
requiring  
adjustments

Very high  
likelihood of  
requiring  
adjustments

3. Please indicate the most likely dollar amount of the required adjustment:

\$\_\_\_\_\_.

4. If you would like to comment on the reasons for the decisions, please do so in the space provided below (optional):



5. How likely would you disclose this matter as a Critical Audit Matter in the audit report? Please indicate the answer by using the following scale, with 1 being “very low likelihood of disclosing it as a CAM” and 10 being “very high likelihood of disclosing it as a CAM”.



Very low  
likelihood of  
disclosing it  
as a CAM

Very high  
likelihood of  
disclosing it  
as a CAM

6. If you would like to comment on the reasons for the CAM decisions, please do so in the space provided below (optional):

**Debriefing questions**

1. How confident/certain are you in the assessment of the likelihood of requiring a misstatement correction (on the previous question)? Please indicate the answer by using the following scale, with 1 being “Not Confident” and 10 being “Completely Confident”.



Not Confident

Completely  
Confident

2. Are disclosing Critical Audit Matters (CAMs) required in this case study? Please select the answer below.

- Required
- Not required

3. Is materiality threshold going to be disclosed in the audit report in this case study? Please select the answer below.

- Yes, materiality threshold is going to be disclosed.
- No, materiality threshold is not going to be disclosed.

4. Please rate the significance level of the fair value measurement in the case by using the following scale, with 1 being “Not Significant” and 10 being “Extremely Significant”.



Not  
Significant

Extremely  
Significant

5. Please briefly describe the understanding of “Materiality”.

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## A Few Questions about You

6. Please indicate any of the following industries in which you have significant auditing experience by selecting one or more of the following:

- Communications/Media
- Construction/Real Estate
- Consumer Products/Retail
- Energy
- Financial Services/Insurance
- Government/Not-for-profit
- Healthcare/Pharmaceuticals
- Manufacturing
- Technology (electronics, software, services, etc.)
- Other (Please specify) \_\_\_\_\_

7. Please indicate the audit experience in years

- Below 5
- 5 – 10
- 11 – 15
- Above 15

8. Please indicate the audit experience of listed companies in years

- Below 5
- 5 – 10
- 11 – 15
- Above 15

9. Please indicate the experience of developing audit reports of listed companies in years

- Below 5
- 5 – 10
- 11 – 15
- Above 15

10. What's the current position in the firm?

- Partner
- Director
- Sr. Manager
- Manager
- Senior
- In-charge
- Staff
- Other (please specify) \_\_\_\_\_

11. Please indicate if you have obtained any accounting qualifications:

- CPA    CFA    CMA    CIA  
 Other (please specify) \_\_\_\_\_

12. How would you characterise the familiarity with auditing fair value estimates under FAS 157 *Fair Value Measurements*? Please indicate the answer by using the following scale, with 1 being “Not At All Familiar” and 10 being “Extremely Familiar”:



Not At All  
Familiar

Extremely  
Familiar

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## CHAPTER 4 – STUDY THREE

### AUTHORSHIP DETAILS

#### Statement of Authorship

Title of Paper	The Effect of Key Audit Matters and Uncertainty Disclosures on Auditors' Accountability Perceptions and Fair Value Decisions
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input type="checkbox"/> Submitted for Publication <input checked="" type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style
Publication Details	- Presented at Doctoral Symposium of Accounting and Finance Association of Australia and New Zealand 2021 - Presented at Accounting Discipline Research Day 2021 at The University of Adelaide - Currently preparing for journal submission

#### Principal Author

Name of Principal Author (Candidate)	Jin Ma			
Contribution to the Paper	I reviewed the literature and relevant theories, identified the research question, designed the experiment, collected and analysed data, and contributed to write up of the paper			
Overall percentage (%)	70			
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.			
Signature	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;"></td> <td style="width: 20%;">Date</td> <td>29 March 2022</td> </tr> </table>		Date	29 March 2022
	Date	29 March 2022		

#### Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

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Signature	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;"></td> <td style="width: 20%;">Date</td> <td>4/4/22</td> </tr> </table>		Date	4/4/22
	Date	4/4/22		

Name of Co-Author	Indrit Troshani			
Contribution to the Paper	Indrit has contributed to the development of the paper including theme identification, synthesizing of extant literature, theorisation and hypotheses development, discussion, and future research directions. Contribution percentage (%): 15%			
Signature	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;"></td> <td style="width: 20%;">Date</td> <td>4/4/22</td> </tr> </table>		Date	4/4/22
	Date	4/4/22		

Please cut and paste additional co-author panels here as required.

# The Effects of Critical Audit Matter and Audit Materiality Disclosures on Investors' Risk Perceptions

## ABSTRACT

We examine the joint effect of two audit disclosures, materiality and critical audit matter (CAM) disclosures, on nonprofessional investor judgments and decisions. We find that audit materiality disclosures and CAM disclosures influence nonprofessional investor risk perceptions in different ways. While investors perceive heightened investment risk due to CAM disclosures, disclosing materiality information serves to reduce this effect. We also find that either of these disclosure types can enhance investor confidence in there being no material misstatements. Moreover, we demonstrate that these disclosures interactively affect nonprofessional investors' investment decisions, and this interaction effect is fully mediated by investors' perceptions of misstatement risks. Our results indicate that these audit disclosures can influence nonprofessional investors' evaluation of financial statements. These results provide important implications for various stakeholders including regulators, policy makers, audit practitioners, and the wider investing community.

**Keywords:** expanded audit reports; materiality disclosures; CAM disclosures; risk perceptions.

## 4.1 Introduction

There have long been concerns regarding users' ability to account for uncertainty within the financial statements when making investment decisions (e.g., SEC 2006; 2011). Regulators and researchers have been seeking ways to address this uncertainty (e.g., Bratten et al. 2013; IAASB 2011; PCAOB 2013; 2016). There have been calls by users for audit reports to include additional disclosures of specific credible and quality information related to the audit. Auditors are now required to include critical audit matters (CAMs)<sup>50</sup> in the audit report (e.g. PCAOB 2017). According to AS 3101, CAM disclosures are intended to provide investors with new information about the audit, specifically information regarding audit of significant issues that are material to the financial statements (PCAOB 2017). In conjunction with these changes, materiality disclosures in audit reports have been required in some jurisdictions, such as the UK and the Netherlands (FRC 2013b; NBA 2014), while also being considered by regulators

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<sup>50</sup> Key audit matters (KAMs) have been required under the international audit standard ISA 701 since 2016 (IAASB 2015b). CAMs and KAMs are considered similar audit disclosures under the new audit reporting model that do not have fundamental distinctions between each other (e.g., Bédard, Coram, Espahbodi, and Mock 2016).

in other major jurisdictions (IAASB 2015a, 2015c; PCAOB 2017). It is expected that materiality threshold information may help users to evaluate the degree of uncertainty communicated in the financial statements (IAASB 2009; Eilifsen et al. 2020).

While it is believed that more information is needed in the audit reports (e.g., Gray, Turner, Coram, and Mock 2011; IAASB 2012), there is limited understanding if and how the new audit information, especially CAMs and audit materiality, might be useful to and used by users, particularly the extent to which it affects users' judgments and decisions (e.g., Coram, Mock, Turner, and Gray 2011; Mock, Bédard, Coram, Davis, Espahbodi, and Warne 2013; Bédard et al. 2016; Sirois, Bédard, and Bera 2018; Christensen, Eilifsen, Glover, and Messier 2020).

The materiality concept is fundamental in auditing, (e.g., Frishkoff 1970; Messier, Martinov, and Eilifsen 2005; IAASB 2009; FRC 2017). It indicates auditors' judgment towards detected misstatements, and the extent to which a knowledgeable user may be influenced. Investors and some regulators believe that information about audit materiality is useful for users' decision-making (PCAOB 2011; Singh and Peters 2015; FRC 2013a; 2016). For example, a quote from a CFA Institute survey states that "This (the method by which the auditor determines/assesses materiality) will help the user understand what level of tolerable error to allow for analysis of the income statement and balance sheet..." (Singh and Peters 2015, 10). However, some commenters argue that disclosing materiality information may result in perceived inconsistent communication arising from the difficulty of choosing quantitative materiality levels across different industries and firms (PCAOB 2011). The PCAOB focuses on the consequences of the type of materiality disclosures and believes that disclosing materiality information as a quantitative measure may result in overlooking the qualitative aspects of materiality by users (PCAOB 2017).



Research suggests that insufficient knowledge of audit materiality can make it difficult for users to integrate materiality into their judgment and decisions (e.g., Gray et al. 2011; DeZoort, Holt, and Stanley 2019; Christensen, Eilifsen, Glover, and Messier 2020). Little is known as to whether disclosing materiality thresholds can be useful in users' analysis of financial information. However, the answer to this question can offer insights into the implications of including additional regulation concerning materiality disclosures into the audit reporting model (Gray et al. 2011).

We expect that auditors' disclosures of both audit materiality and CAMs have the potential to influence investors' assessment of financial information and potentially their risk perceptions, especially perceptions of investment risk and material misstatement risk. In providing a threshold of potential misstatements and uncertainty of financial statements, materiality disclosures may become an important reference for users when evaluating the risk of misstatements (DeZoort et al. 2019; Eilifsen et al. 2020). Therefore, we expect that materiality disclosures reduce perceptions of investment risk and enhance investor confidence that there are no material misstatements beyond audit materiality.

CAM disclosures provide information about auditors' judgments and considerations that may be useful for users (e.g., PCAOB 2017; Sirois, Bédard, and Bera 2018). CAM disclosures highlighting significant fair value issues can raise awareness of estimation uncertainty and may potentially affect users' perceived risk of financial reports (e.g., Dennis, Griffin, and Zehms 2019). Hence, we expect that CAM disclosures increase perceptions of investment risk in a company. However, it is also reasonable to assume that CAM disclosures could also imply that the risk of material misstatements has been assured by the auditors that it is within the disclosed audit materiality level (PCAOB 2017). Since existing evidence and theory are not sufficient to establish a directional prediction (Gold and Heilmann 2019), we expect that there would be no change on the effect of CAM disclosures on investor confidence of no material misstatement.

We test our hypotheses experimentally using a  $2 \times 2$  between-subjects design in which we manipulate 1) presence *versus* absence of audit materiality disclosures specifying the quantitative materiality threshold of an audit, and 2) including *versus* not including a CAM disclosure. The accounting issue in this experiment is a fair value setting which we chose for two key reasons. First, due to significant estimation uncertainty, fair value measurements are one of the most common CAMs disclosed in the audit reports under current practice (e.g., KPMG, 2017). Second, fair value measurements are a critical part of the financial statements and an area which requires significant professional judgment and the application of materiality by auditors (e.g., Griffith, Hammersley, and Kadous 2015). Accordingly, the fair value setting allows us to investigate whether and how the additional audit disclosures, separately and jointly, can be useful for investors in their risk assessment when evaluating a company's financial information.

Using a sample of 157 nonprofessional investors, we find that materiality and CAM disclosures interactively affect nonprofessional investors' risk perceptions. Specifically, we find that CAM disclosures result in heightened perceived investment risk of a company by nonprofessional investors when audit materiality disclosures are not made available. This finding suggests that increased perceptions of investment risk due to CAM disclosures can be alleviated by disclosing audit materiality information in the audit report. Moreover, we find a substitution effect of these two disclosures on investor misstatement risk perceptions, such that either of the two audit disclosures can enhance nonprofessional investors' confidence of no material misstatements in the financial statements.

Our study contributes to accounting research, practice and policy by providing insights into the implications of the effects of audit materiality and CAM disclosures on nonprofessional investors' risk perceptions. Our research adds to a growing body of research exploring the impact of expanded audit disclosures on users' judgment and decisions. While a few recent

studies have examined how materiality disclosures affect investor judgments and behaviours (Christensen et al. 2020; Eilifsen et al. 2020), there is still limited research on how audit materiality information and other audit disclosures, such as CAM disclosures, may interactively influence investor risk judgments. We provide evidence that materiality and CAM disclosures can influence nonprofessional investors' risk assessments. Our findings also suggest that there is a potential negative impact of CAM disclosures on perceived risk of an investment which can be mitigated by audit materiality disclosures. The interaction effect of materiality and CAM disclosures that we find in this research can inform regulators and standard setters when evaluating the communicative value of expanded audit disclosures, and their potential impact on the wider, nonprofessional investor community.

The next section reviews related studies, followed by hypotheses development. Sections 4.4 and 4.5 discuss the method used to test the hypotheses and results of the study, respectively. Section 4.6 summarises the findings, and discusses implications and limitations.

## **4.2 Related Literature**

### *4.2.1 Materiality Disclosures*

According to ISA 320, auditors should consider the investor's perspective when establishing materiality thresholds such that "... judgments about matters that are material to users of the financial statements are based on a consideration of the common financial information needs of users as a group..." (IAASB 2009, 2). Materiality thresholds are a measure of the magnitude of misstatements that are considered and allowed by auditors for the financial statements.<sup>51</sup> The level of materiality is indicative of the scope of an audit approach and audit effort, and therefore forms an important part of audit specific information. Some

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<sup>51</sup> Materiality thresholds and considerations have not previously been disclosed in audit reports.

regulators believe that communicating such information is beneficial for improving users' understanding about how auditors apply materiality during an audit and can therefore help users' evaluation of the audit quality and outcomes (FRC 2013b).

There are a few experimental studies that examine audit materiality disclosures on investors' judgment and decision-making with mixed results. Fisher (1990) conducts an experiment to investigate how auditor's materiality disclosures affect investors' decisions about security process, trading volume and trading profit. The findings indicate that materiality disclosures improve market efficiency, and that publicly disclosed materiality information is more useful than private information to investors. Tuttle, Collier and Plumlee (2002) investigate materiality levels from a user perspective to see if misstatements determined by auditors affect individuals' investment decisions. Specifically, Tuttle et al. (2002) use a series of virtual trading markets, in which undergraduate business students make investment decisions based on financial information. Participants are provided financial information that was manipulated at three levels as follows: containing no misstatements; misstatements below materiality; or misstatements above materiality. They find that undisclosed immaterial misstatements do not change investment decisions; however, material misstatements do make a difference in investment decisions.

In a fair value setting, Eilifsen, Hamilton, and Messier (2020) investigate the effects of audit materiality disclosures and management sensitivity analysis disclosures on investors' judgments of the reliability of fair value estimates. They conduct a  $2 \times 2$  between-subjects experiment with independent variables of sensitivity analysis of a fair value estimate at two levels (precise *vs.* imprecise) and audit materiality threshold (disclosed *vs.* not disclosed). Eilifsen et al. (2020) find that when materiality disclosures are provided, investors judge precise accounting estimates to be more reliable than imprecise ones; however, when materiality disclosures are absent, investors are not able to distinguish between the two levels

of imprecision of reported fair values. The results imply that the audit materiality threshold of a company can assist investors' assessments as a benchmark to differentiate risks of measurement uncertainty in fair value estimates.

Christensen et al. (2020) experimentally examine whether audit materiality disclosures affect investors' decision-making across different investment contexts. They recruit professional investors to participate in a  $2 \times 3 + 1$  between-subjects experiment with two levels of materiality disclosures (four percent vs. ten percent), three types of investments (public equity vs. private equity vs. public debt), and a control condition of a public equity company without audit materiality disclosures. Christensen et al. (2020) find that including audit materiality disclosures does not change investors' investment decisions between treatment conditions and the control condition. In subsequent tests for the treatment conditions with materiality disclosures, they find that investors are more likely to increase investment when the materiality threshold level is at ten percent compared to four percent. However, subsequent survey responses reveal that investors are more likely to increase their investment when materiality is higher, because they consider that a higher level of materiality is associated with greater audit effort and greater precision in financial statements. Christensen et al. (2020) argue that investors do not understand or misunderstand the relationship between materiality and audit effort, suggesting that investors may not find different levels of materiality thresholds with regard to a single company or across different entities as cognitively accessible information.

Doxey, Hatfield, Rippey, and Peel (2020) investigate the effects of subsequent events (gain or loss events) and materiality disclosures on investors' materiality judgments and investment decisions. They use an experiment manipulating subsequent events that lead to either a gain or a loss, and materiality disclosures at three levels (high, low, or absent). Consistent with loss aversion, they find support for the prediction that investor judgments of materiality limits are

imbalanced under a gain *versus* a loss situation, such that investors expect lower materiality levels when there is a loss compared to a gain. They also find that when materiality disclosures are absent, investors' preferred materiality levels are lower than auditors' materiality thresholds in practice. When materiality disclosures are available, investors' expected materiality thresholds judgments appear to converge towards the disclosed threshold. However, this anchoring effect of investors' materiality judgments does not influence investment judgments that investment actions remain consistent with loss aversion.

While extant research on materiality disclosures has made important contributions, it is inconclusive about the effect of materiality disclosures on investors' judgment of financial information and investment decisions. It is also yet to address the question of whether and how materiality disclosures may influence investors' risk perceptions when evaluating financial statements. Further, there been no research that we are aware of that has examined how materiality disclosures might interact with CAM disclosures by auditors.

#### 4.2.2 *CAMs Background and Research*

CAMs are audit disclosures that "... relate[s] to matters or disclosures that are material to the financial statements and involved especially challenging, subjective, or complex auditor judgment" (PCAOB 2017, 16). CAMs disclosures aim to improve the communicative value of audit reports to be "more informative and relevant" to users of financial statements (PCAOB 2017, 15). Whether CAM disclosures facilitate improvements of the information communication by auditors is of great interest for both academe and the practice (e.g. Mock et al. 2013; CAQ 2013).

Early behavioural evidence of CAMs disclosures is mostly from a user's perspective. Bédard et al. (2016) review and synthesise current audit literature regarding the new standard changes and identify gaps for future research. They point out that research is needed to examine

how users interpret and use additional audit information that is being presented in the audit reports.

A few CAMs studies investigate financial statement users' perceptions about the new audit reporting information (Christensen et al. 2014; Sirois et al. 2018). These studies reveal that CAMs have the potential to affect users' judgments and decisions. Christensen et al. (2014) investigate investors' investment decisions under CAMs. Christensen et al. (2014) observe an information effect of CAMs in that investors are more likely to stop considering an investment when receiving both CAMs and footnotes than when receiving footnotes alone. In addition, aside from the fact that CAMs are more convenient than lengthy footnotes for users' analysis, the credibility of CAM disclosures by auditors is relatively higher compared with management footnotes. Therefore, they expect CAMs also offer a source credibility effect on users. They find evidence supporting their prediction that investors are more likely to stop considering a firm for investment when receiving CAMs than when receiving the same information in the footnotes. They conclude that CAMs indicate great estimation uncertainty which negatively influences investors' decisions to invest in a company. These results indicate that CAMs may have a negative effect on investors' investment decisions, and that the CAMs effect can outweigh the reported face value of the information in affecting investors' decisions.

Using eye-tracking technologies, Sirois et al. (2018) examine the information value of CAMs to users. They find that the availability of CAM information affects users' information search behaviour in reading the financial statements by directing users' attentions to CAM related information. Moreover, CAM disclosures including several CAMs may become a substitute for financial statements as users pay less attention to non-CAM related areas of the financial statements. However, they do not find evidence suggesting that CAMs might affect users' investment decisions.

Dennis et al. (2019) explore the value relevance of CAMs and management disclosures on users' valuation of material measurement uncertainty. They find that both types of disclosures are value-relevant to users, given that information provided in these disclosures is fundamentally different (first- or second-order<sup>52</sup>), but addressing the same underlying measurement uncertainty. They show that users react to CAMs and management disclosures jointly (but not separately) by taking price protection in response to measurement uncertainty communicated through those disclosures. They also find that when providing visual cues<sup>53</sup> by highlighting significant fair values disclosed in CAMs, investors take further price discounts than when not providing visual cues; but this price protection can be alleviated by management supplemental disclosures.

Prior behavioural research provides empirical evidence that CAMs can increase users' awareness of the information that is discussed in CAMs, and may contain information that is relevant to inform uncertainty. Therefore, it is likely that CAMs may serve to facilitate users' evaluation of financial information and potentially influence users' perceptions about audited financial statements.

As the UK was an early adopter of CAMs, it provided the opportunity for the first archival studies on this new disclosure (e.g., Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2018; Lennox, Schmidt, and Thompson 2018; Reid, Carcello, Neal, and Francis 2019). Gutierrez et al. (2018) find that additional audit disclosures have no incremental market effect in terms of abnormal returns and trading volume, and make no significant changes to audit quality or audit fees. Similarly, Lennox et al. (2018) argue that increased audit disclosures are not

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<sup>52</sup> Dennis et al. (2019) consider that information contained in management disclosures is first-order as it is the primary source of measurement information reflecting management assertions of underlying economic activities (Silverstein 2001). Whereas, audit information about those measures is the primary source of attestation information about audit assertions of those measures, therefore is secondary for measurement evaluation purposes.

<sup>53</sup> The visual cue conditions use a label (i.e., "M") which was defined in the audit report to identify the CAM related uncertainty measure, as well as a red box placed around the uncertainty measure in the management footnote.



incrementally informative to investors, as risks discussed in audit disclosures are already known prior to CAMs through other types of company disclosures. By contrast, Reid et al. (2019) report that audit quality, proxied by absolute abnormal return and management propensity to meet or beat analyst forecast, is improved under the CAMs regime.

Extant archival research provides incremental effects of additional audit disclosures on outcomes of audit quality and market reaction. However, the results are mixed and unable to inform individual level effects on investors' judgments and decisions in response to specific audit disclosures, and to understand whether and how additional audit disclosures may facilitate users' understanding of financial reporting and subsequent decision-making. The individual effects on users was highlighted as one of the motivations for disclosing CAMs in the first place, as noted in the original Invitation to Comment issued by the IAASB, which states that "More than ever before, however, users of audited financial statements are calling for more pertinent information for their decision-making in today's global business environment with increasingly complex financial reporting requirements." (IAASB 2012, 1).

Current CAM research is yet to address questions of whether and how CAMs play a role in the users' evaluation of material misstatements of financial statements and if the assessment directly influences investment decisions. The answers to these questions are important to understand and assess the value of CAMs in promoting communication of important information and to identify potential unintended consequences influencing users' perceptions toward financial information.

While extant research has improved our understanding of the effect of materiality disclosures and CAM disclosures, we are unaware of any research that has explored the joint effect of these disclosures. This study contributes to fill this research gap by examining whether and how CAMs and materiality disclosures, as two important but different types of audit

disclosures, improve users' understanding of materiality of financial statements, and affect their risk judgments and investment decisions.

### **4.3 Hypotheses Development**

#### *4.3.1 Investment Risk and Misstatement Risk Perceptions*

Information seeking theory and source credibility theory form a basis of the expectation that audit disclosures can affect investor information processing. Information seeking theory suggests that uncertainty brings cognitive discomfort and motivates individuals to seek information to facilitate cognition and judgment to formulate order and meaning in uncertain environments (e.g., Wilson and Walsh 1996). Information sources constitute an important determinant of information seeking behaviour. According to source credibility theory, communicators' credibility affects the acceptance of messages they convey (Ohanian, 1990). Information receivers tend to put more weight on information from more credible sources (Birnbaum and Stegner 1979; Eagley and Chaiken 1993; Beaulieu 2001; Ohanian, 1990).

Investors often bear high levels of risk of investment uncertainty (Eilifsen et al. 2020), resulting from lack of available information (information asymmetry) and low quality information (information risk) (Holt and DeZoort 2009).<sup>54</sup> Investment risk refers to “the chance that an investment will not provide the expected return” (Brigham and Houston 1998, 122). Investors assess investment risks while evaluating information available for investment opportunities. Financial and audit disclosures supplying sufficient and appropriate information can be useful to investors in understanding and evaluating a company's overall economic risk (Elliott and Jacobson 1994; IAASB 2011), whereby the influence of users' perceptions of

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<sup>54</sup> According to Francis, LaFond, Olsson, and Schipper (2005), information risk is “the likelihood that firm-specific information that is pertinent to investor pricing decisions is of poor quality” (Francis et al. 2005, 296).

investment risk through reduced information risk results in better understanding and cognitive ability to assess uncertain economic environments and investment opportunities (Holt and DeZoort 2009).

Material omissions and misstatements in financial statements are the extreme form of information risk. Material misstatements have the potential to influence users' decisions (PCAOB 2010). As an important risk consideration for audit decisions (Coram, Ng, and Woodliff 2004), misstatement risk judgment determines the level of imprecision that users may accept within audited the financial statements (Eilifsen et al. 2020). When evaluating financial statements, investors also face the challenge of understanding the risks of material misstatements in financial statements, especially when judging misstatement risks for uncertain accounting estimates. Prior research shows that expanded audit disclosures can become an important source of information for investors when evaluating significant measurement uncertainty, and serve their investment decisions (e.g., Dennis et al. 2019; Sirois et al. 2018). However, some research claims that additional audit disclosures are not useful for users, as there is lack of market reactions to these disclosures (e.g., Lennox et al. 2018).

Taken together, theory and some research suggest that additional audit disclosures can be useful for investors' judgment processes under uncertainty conditions. We extend prior research by examining whether and how audit disclosures, specifically materiality and CAM disclosures, may be useful for investors' investment decisions and material misstatement risk assessments.

#### *4.3.2 Audit Materiality Disclosures*

Audit standards in the UK and the Netherlands have mandated audit materiality disclosures (FRC 2013b; NBA 2014). Users in other jurisdictions have also expressed interest in having access to similar disclosures (e.g., Mock et al. 2009; PCAOB 2011; Singh and Peters 2015).

For example, in a survey study conducted by the CFA Institute, the majority of respondents were supportive of audit materiality disclosures (Singh and Peters 2015). Having important implications in practice (Doxey et al. 2020), audit materiality disclosures are expected to reduce the audit expectation gap (Mock et al. 2013) "...between ...what the users expect from the auditor and the financial statement audit, and the reality of what an audit is" (IAASB 2011, 7). Regulators in the UK believe that audit materiality disclosures are useful for users in "assessing not only the audited financial statements but also the quality of the audit" (FRC 2013b, 4). Despite this, there are concerns about users' lack of working knowledge in being able to understand materiality (e.g., Mock et al. 2013; FRC 2017).

Audit materiality judgments incorporate auditor considerations of acceptable risk and the nature and extent of audit scope and effort for an audit in forming an opinion on the overall financial statements (Tuttle et al. 2002). In determining materiality, auditors exercise professional judgment to determine the extent of information risk of audited financial information and ensure that audited information is of sufficient importance and value for users to make informed decisions (Lev 1968; IAASB 2004; FASB 2010; Doxey et al. 2020). An important judgment of materiality is the resolution and magnitude of misstatements (Eilifsen and Messier 2015), which reflects auditors' consideration of the level of "precision" that is ensured for an audit (Christensen et al. 2020). Audit materiality disclosures specify the overall materiality level applied during an audit, and thus have the potential for allowing users to gain a sense of this "precision" that the auditors have established for the financial statements (Christensen et al. 2020; Eilifsen et al. 2020; FRC 2017). For example, Eilifsen et al. (2020) demonstrate that using audit materiality information, investors are able to accurately differentiate risks of uncertainty in fair value measures of varying measurement precisions.

Materiality disclosures offer a sense of certainty about the magnitude of misstatements (Eilifsen et al. 2020). This certainty is expected to be incrementally informative for users

regarding the auditors' materiality threshold applied in the audit and the level of reasonable assurance that auditors have provided for the financial statements (FRC 2013a; Christensen et al. 2020). When facing an uncertain investment environment, investors have the tendency to seek credible information to help evaluate risks of investment (Holt and DeZoort 2009). Audit materiality, providing credible and important information and references regarding risks of misstatements (Eilifsen et al. 2020), can facilitate investor risk assessments. As a result, audit materiality disclosures enriching users' information environment may reduce investors' perceived uncertainty of information risk of financial statements to some extent, leading to reduced perceptions of investment risk of the reporting company. Therefore, we posit that:

**H1a:** Nonprofessional investors' perceived risks of investment is lower when audit materiality disclosures are provided compared with when they are not provided.

Audit materiality emphasises the level of precision that auditors use to judge material misstatements for a company's financial statements (Eilifsen et al. 2020), and to maintain reporting quality throughout an audit to ensure the reasonableness of financial information. Intuitively, audit materiality information may also be used by the investors for their own material misstatement risk judgments, and to enhance investor confidence that the financial report is reasonably free from material misstatements. Therefore, we predict that:

**H1b:** Nonprofessional investors are more confident that there are no material misstatements within the financial statements when audit materiality disclosures are provided compared with when they are not provided.

#### 4.3.3 *CAM Disclosures*

Under the current audit reporting environment, CAM disclosures are intended to discuss

significant audit issues and related audit procedures to aid users' assessments of financial information and related decision-making (e.g., Dennis et al. 2019). By disclosing CAMs on these significant audit issues, auditors communicate their judgments about why these uncertain measurements are determined to be significant during an audit and how these issues have been addressed in audit procedures performed (e.g., AS 3101). Empirical evidence suggests that CAMs are valuable to users in highlighting uncertainty information and draw their attention to the uncertainty and CAM-related areas in the financial statements (e.g., PCAOB 2013; Christensen et al. 2014; Sirois et al. 2018). CAMs have also been found to have the potential to reduce investors' tendency to invest when related audit procedures are not discussed (Christensen et al. 2014) and result in investors taking price protection (Dennis et al. 2019). Dennis et al. (2019) argue that CAMs disclosures, discussing materially uncertain accounting issues within the financial statements, are the auditors' method of communicating concerns about these issues in a credible manner.

Discussions of auditors' insights of reported items in CAMs, highlighting the significant level of uncertainty implied in these accounting areas through auditors' reasoning and extensive audit procedures conducted, may potentially raise the awareness of risks of uncertainty perceived by users. Therefore, we predict that:

**H2a:** Nonprofessional investors' perceived risks of investment are greater when CAM disclosures are provided compared with when they are not provided.

It is also important to note that CAMs "... should not be interpreted as altering the level of assurance" apart from an auditor's report (PCAOB 2017, 95). AS 3101 requires a statement preceding CAMs in the audit report indicating that "The communication of critical audit matters does not alter in any way [the auditor's] opinion on the financial statements" and "... [the auditor is not] ... providing separate opinions on the critical audit matters or on the

accounts or disclosures...” (AS 3101, para. 15). Accordingly, the audit process of CAM related issues should follow closely with audit judgments of materiality of an audit. In this sense, a CAM, although it may be considered as a “forewarning” of subsequent misstatements (Christensen et al. 2014; Kachelmeier, Rimkus, Schmidt, and Valentine 2019), implies that risk of misstatements of the reported value is within the overall audit materiality applied for the financial statements.

CAM disclosures may relate to significant risk of misstatements in areas of financial statements, but do not suggest a materiality level that is different from the applied overall financial statements (PCAOB 2017). Therefore, audit standards indicate that CAMs, like the rest of the audit disclosures, are subject to the same level of assurance. In addition, CAMs discuss auditor judgments about the risks of these issues and may discuss specific audit procedures that have been performed to address these issues, indicating that necessary fiduciary duty has been exercised to ensure reasonable reporting. Therefore, CAM disclosures should provide users more confidence that care has been taken to ensure reasonable assurance is provided on the matter (or matters).

Alternatively, as discussed earlier, CAMs also signal significant risks of misstatements in certain reporting areas for investors (e.g., Brasel, Doxey, Grenier, and Reffett 2016; Kachelmeier et al. 2019), and influence their perceptions of risks of material uncertainty. Hence, it is also possible that CAM disclosures can reduce investors’ perceptions that there are no material misstatements in the financial report. Therefore, it is difficult to make a directional prediction of the CAM effect on investor confidence of no material misstatements. We present our hypothesis in the null form as follows:

**H2b:** Nonprofessional investor confidence of no material misstatements does not differ between when CAM disclosures are provided and when they are not provided.

## **4.4 Research Method**

### *4.4.1 Participants*

The experiment participants are 157 US nonprofessional investors. We recruited all participants from the Amazon Mechanical Turk (AMT) platform. This platform allowed us to specify that participants were US citizens, at least 18 years of age, and personally owned common stocks. In total, 456 AMT workers accessed the survey, 246 passed the screening question; of these 220 provided usable responses. We deleted participants who spent less than 120 seconds for the survey (9), or failed both manipulation checks for materiality and CAM disclosure conditions (33), or had too limited experience with financial reports (21) (had 0 to 2 years of investment experience, and never evaluated a company's financial statements, and never referred to the auditor's opinion). After these filtering procedures, the final sample was 157.

These participants received US\$2.00 for completing the survey, which is consistent with prior research, and is considered reasonable in similar experimental tasks using AMT workers as proxies for nonprofessional investors (e.g., Rennekamp 2012; Dennis et al. 2019). The survey was administered on the Qualtrics platform. The participants correctly answered a screening question about a concept of financial reporting, before they could proceed to the survey section. This screening question ensured that participants had a basic understanding of the purpose of financial reporting and could be considered appropriate proxies for nonprofessional investors.



**TABLE 4.1****Demographic Information for Participants**

Work Experience (in years)	N	%
≥ 3	157	100
Mean	19	
Median	16	
SD	11	
<b>Investment Experience (in years)</b>		
≥ 11	48	31
6 - 10	51	32
3 - 5	35	22
0 - 2	23	15
<b>Experience Analysing Financial Statements (in times)</b>		
1 - 5	74	47
≥ 6	74	47
<b>Number of Accounting Courses Taken</b>		
None	32	
1 - 3	78	
4 - 10	36	
≥ 11	11	
<b>Number of Finance Courses Taken</b>		
None	33	
1 - 3	89	
4 - 10	29	
≥ 11	6	
<b>Education Completed</b>		
Bachelor's Degree	98	62
Master's Degree/M.B.A	45	29
Ph.D/J.D.	6	4
<b>Reference to Audit Opinion</b>		
Always	38	24
Sometimes	97	63
Never	21	13
<b>Participants</b>		
Female	59	38
Speak English at Home	154	98

**Note:** Table 4.1 presents the demographic profile of the auditors who participated in the experiment. Participants were recruited from MTurk. MTurk ensures that these participants personally own stocks. Demographic questions of “Investment Experience”, “Experience Analysing Financial Statements”, “Education Completed”, and “Reference to Audit Opinion” are single choice questions. For questions of “Work experience” and the number of “Accounting Courses” and “Finance Courses”, participants provided a numeric value accordingly.

The participant demographic information is presented in Table 4.1. Participants have an average of 19 years of work experience and 85 percent of the participants have three or more years of investment experience. Participants on average have taken three college level accounting courses and three finance courses, and 91 percent of the participants have a Bachelor's or Master's/MBA degree. Ninety-four percent of the participants indicated that they have had experience evaluating a company's performance by analysing its financial statements, and 87 percent participants responded that they sometimes or always refer to the auditor's opinion on the company's financial statements to inform investment decisions. Thirty-eight percent of participants are female. Compared with prior accounting research, demographic statistics of our sample indicate that participants of our study are a representative group of nonprofessional investors (e.g., Rennekamp 2012; Koonce, Miller, and Winchel 2015; Dennis et al. 2019).

#### 4.4.2 *Experimental Task and Design*

We adapt the survey instrument used in Clor-Proell et al. (2014).<sup>55</sup> The case provides information about a mid-sized publicly traded company manufacturing specialty tools. The information includes comparable industry information for the company, excerpts of income statements, and a fair value accounting footnote. We designed the materiality and CAM disclosures based on corresponding audit standards and audit disclosures from real financial statements. Participants read company background information, income statements and the footnote, and then they view the auditor's report before proceeding to the survey questions.

We employ a  $2 \times 2$  between-subjects design. CAMs disclosures are manipulated at two levels. CAMs conditions include a standard audit opinion paragraph, the definition of CAMs, and additional paragraphs with the auditors' description about the investment gain as a CAM

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<sup>55</sup> Permissions to use the instrument in Clor-Proell et al. (2014) was granted and we thank the authors for sharing their instrument.

issue and related audit procedures conducted, whereas no CAMs conditions use standard wording of the audit standard AS 3101, stating that no CAM is communicated under the auditor considerations. Likewise, materiality disclosures are manipulated at two levels. Specifically, under materiality disclosure present conditions, audit reports include materiality disclosures with information about the definition of materiality and the materiality threshold applied during the audit at the overall financial statement level. Materiality disclosures absent conditions do not provide materiality information.

Following the manipulations, participants respond to a number of survey questions, including our two main dependent variables. These two variables are both 11-point Likert scale measures: 1) perceived risk of stock, which asks the participants to assess the risk of an investment in the Company's common stock, where '1' = "very low", '6' = "neutral", and '11' = "very high"; and 2) confidence of no material misstatements, which asks the participants to indicate how confident they are that there are no material misstatements individually or in aggregate greater than the auditor's materiality threshold applied during the audit, where '1' = "not confident", '6' = "somewhat confident", and '11' = "highly confident". After the survey questions, participants then respond to two attention check questions, two manipulation check questions, and demographic questions.

## **4.5 Results**

### *4.5.1 Manipulation Checks*

We include two manipulation check questions. These questions are single answer questions for participants to indicate whether or not the auditor's report includes a materiality disclosure and also whether it includes a CAM. Of the 220 useable responses, 33 (15 percent) participants failed to correctly indicate whether materiality or CAM disclosures are included

in the audit report. We removed all 33 participants who failed the manipulation check from the analysis. The results are statistically similar with the reported results if these participants who failed the manipulation check are included.

**TABLE 4.2**

**MANOVA of Materiality and CAM Disclosures Effect on Investment Risk Perceptions and Confidence of No Material Misstatements**

$$\text{MANOVA Model: } y_{ij} = \mu + \alpha_i + \beta_j + \gamma_{ij} + \varepsilon$$

where,  $y_{ij}$  is a composite variable of participant responses in two dependent variables – Risk of Investment and Confidence of No Material Misstatements,  $\alpha_i$  is the effect of materiality disclosures on composite variable,  $\beta_j$  is the effect of CAM disclosures,  $\gamma_{ij}$  is the interaction effect of the materiality and CAM disclosures.

Source of Variation	Test Statistics <sup>a</sup>	df	F	p
Materiality	0.97	2	2.78	0.065
CAM	0.94	2	4.87	0.009
Materiality × CAM	0.94	2	4.70	0.010
Error		152		

a. The Wilks' Lambda, Pillai's Trace, Hotelling's Trace, and Roy's Largest Root testing methods returned identical test statistics for analysis.

#### 4.5.2 Hypotheses Tests

We examine how the independent variables simultaneously affect the two dependent variables, perceived risks of investment and confidence of no material misstatements, by using a multivariate analysis of variance (MANOVA) test presented in Table 4.2.<sup>56</sup> The MANOVA shows that materiality and CAM disclosures marginally significantly affect the composite

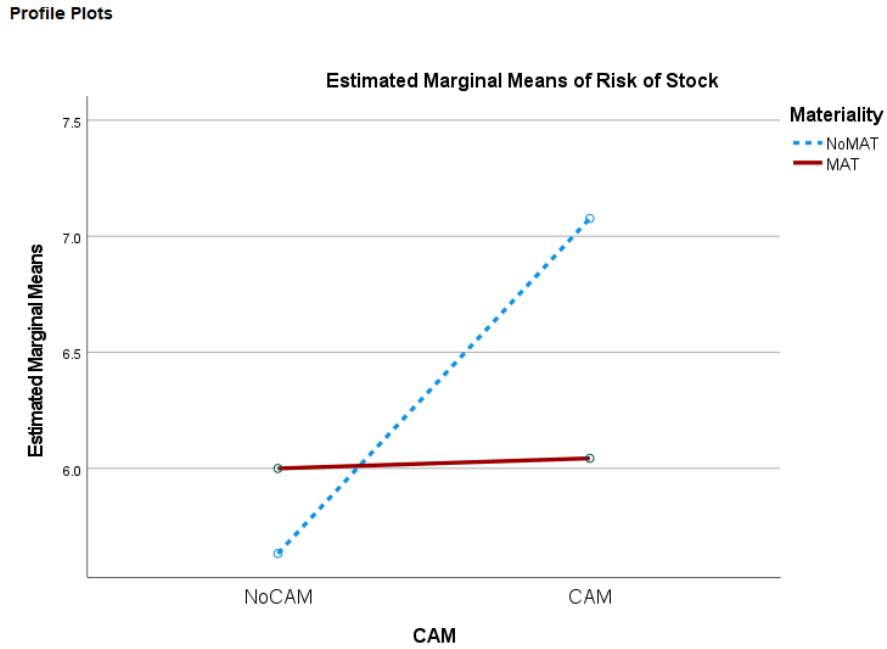
<sup>56</sup> Our dependent variables are nonprofessional investors' perceptions of risks, risks of investment and risks of material misstatements. A further correlation test shows that these two variables are weakly and negatively correlated ( $\rho = -0.127$ ,  $p = 0.114$ , two-tailed). Therefore, a MANOVA test is appropriate to examine effects of independent variables on these dependent variables, as well as to control for statistical power lost due to weak correlations between the two dependent variables.

variable of both the dependent variables (Wilks'  $\lambda = 0.97$ ,  $F = 2.78$ ,  $p = 0.065$ , and Wilks'  $\lambda = 0.94$ ,  $F = 4.87$ ,  $p = 0.009$ ). The interaction of materiality and CAM disclosures also have a significant effect (Wilks'  $\lambda = 0.94$ ,  $F = 4.70$ ,  $p = 0.010$ ). These results warrant separate univariate analysis for the two dependent variables.

#### *Tests of H1: Effects of Materiality Disclosures*

We report individual analysis of variance (ANOVA) results for nonprofessional investors' perceived risks of investment in Table 4.3. Hypotheses H1a states that the effects of materiality disclosures on nonprofessional investor judgments, such that materiality disclosures can reduce nonprofessional investors' perceived investment risks. Descriptive statistics for perceived risks of investment are presented in Table 4.3, Panel A. The ANOVA results are shown in Table 4.3, Panel B, and Figure 4.1 graphically shows the results in testing H1a. The ANOVA model uses participants' perceived risks of stock as a dependant variable. The results indicate that there is an insignificant materiality main effect on nonprofessional investors' investment risk perceptions ( $F = 1.10$ ,  $p = 0.148$ , one-tailed, Panel B, Table 4.3), and there is a significant interaction effect of materiality and CAM on nonprofessional investors' investment risks perceptions ( $F = 4.85$ ,  $p = 0.015$ , one-tailed, Panel B, Table 4.3). We further conduct simple effect tests and present the results in Panel C of Table 4.3. We find that when CAM disclosures are provided, nonprofessional investors perceived risk of stock is significantly lower when audit materiality disclosures are provided (Mean = 6.04) than when they are not provided (Mean = 7.08) ( $F = 5.83$ ,  $p = 0.009$ , one-tailed, Panel C, Table 4.3); while, perceived risks of stock do not differ when CAM disclosures are not provided ( $F = 0.61$ ,  $p = 0.219$ , one-tailed, Panel C, Table 4.3). This indicates that materiality disclosures can reduce nonprofessional investors' perceived risks of stock when CAM information is also disclosed. Therefore, these results partially support H1a.

**FIGURE 4.1 – Risk of Stock**



**Note:** Figure 4.1 plots observed means for investors’ perceptions of investment risk. Participants indicate their perceived investment risk on an 11-point Likert scale of the following question: “Please assess the risk of an investment in Trans-Global Export Ltd.’s common stock”, where ‘1’ = “very low”, ‘6’ = “neutral”, and ‘11’ = “very high”.

Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

**TABLE 4.3****Two-way 2 × 2 ANOVA of Materiality and CAM Disclosures Effect on Investment Risk Perceptions****Panel A: Descriptive Statistics – Mean (standard deviation) of Risk of Stock**

<b>Materiality Conditions</b>					
<b>CAM Conditions</b>	<b>n</b>	<b>No Materiality</b>	<b>N</b>	<b>Materiality</b>	<b>Total</b>
No CAM	30	5.63 (1.63)	42	6.00 (2.14)	5.85 (1.94)
CAM	39	7.08 (1.93)	46	6.04 (2.03)	6.52 (2.04)
Total	69	6.45 (1.93)	88	6.02 (2.07)	6.21 (2.02)

**Panel B: Two-way ANOVA model of Risk of Stock**

<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>p<sup>57</sup></b>
Materiality	4.25	1	4.25	1.10	0.148
CAM	21.16	1	21.16	5.47	0.011
Materiality × CAM	18.76	1	18.76	4.85	0.015
Error	591.65	153	3.87		

R Squared = .067 (Adjusted R Squared = .049)

**Panel C: Simple effect tests for Risk of Stock**

<b>Source of Variation</b>	<b>F</b>	<b>p</b>
Effect of materiality disclosure given no CAM	0.61	0.219
Effect of materiality disclosure given a CAM	5.83	0.009
Effect of CAM under No Materiality conditions	9.14	0.002
Effect of CAM under Materiality conditions	0.01	0.459

<sup>57</sup> Reported *p*-values in this table are one-tailed.

Table 4.3 presents analysis of nonprofessional investor perceptions of investment risk. The dependent variable is perceived risk of stock, for which participants were asked to respond to the following question on an 11-point Likert scale: “Please assess the risk of an investment in Trans-Global Export Ltd.’s common stock.”, where ‘1’ = “very low”, ‘6’ = “neutral”, and ‘11’ = “very high”.

Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

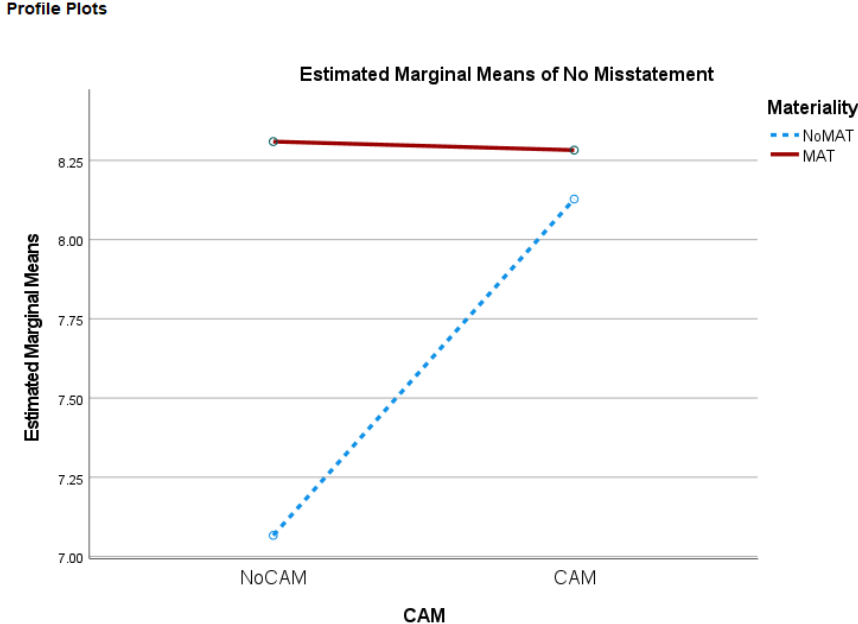
H1b predicts that materiality disclosures increase nonprofessional investor confidence that there are no material misstatements in the financial statements. The ANOVA run to test H1b relating to nonprofessional investors' perceived confidence of no material misstatements is shown in Table 4.4. Panel A of Table 4.4 shows the descriptive statistics of investor confidence of no material misstatements and Panel B presents the univariate analysis (ANOVA Model) results. Figure 4.2 graphs the results of H1b. Panel B of Table 4.4 shows that there is a significant materiality disclosure main effect ( $F = 5.12, p = 0.013$ , one-tailed), as well as a significant interaction effect ( $F = 3.11, p = 0.040$ , one-tailed) on investor confidence of no material misstatements measure. We present simple effect test results in Panel C of Table 4.4, which indicate that materiality disclosures significantly increase investor confidence of no material misstatements when CAM disclosures are not provided ( $F = 7.41, p = 0.004$ , one-tailed), but do not change investor confidence when CAM disclosures are provided ( $F = 0.14, p = 0.356$ , one-tailed). These results also partially support H1b.

#### *Tests of H2: Effects of CAM Disclosures*

H2a predicts that CAM disclosures increase nonprofessional investors' perceived risks of stock. Table 4.3 presents the test results for H2a. As shown in Panel B of Table 4.3, there is a significant CAM main effect on perceived risks of stock ( $F = 5.47, p = 0.011$ , one-tailed). Simple effect tests provided in Panel C of Table 4.3 show that CAM disclosures increase perceived risks of stock when materiality information is not provided ( $F = 9.14, p = 0.002$ , one-tailed), but CAM disclosures do not affect investor perceived risks of stock when materiality information is made available ( $F = 0.01, p = 0.459$ , one-tailed). Therefore, H2a is partially supported.



**FIGURE 4.2 – Confidence of No Material Misstatements**



**Note:** Figure 4.2 plots observed means for nonprofessional investors’ confidence of material misstatements. Nonprofessional investors indicate their confidence that there were no material misstatements by responding to this question: “Given the auditor’s opinion, please indicate how confident you are that there are no material misstatements individually or in aggregate greater than the auditor’s materiality threshold applied during the audit.”, where ‘1’ = “not confident”, ‘6’ = “somewhat confident”, and ‘11’ = “highly confident”. Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

**TABLE 4.4****Two-way 2 × 2 ANOVA of Materiality and CAM Disclosures Effect on Material Misstatement Perceptions****Panel A: Descriptive Statistics – Investor Confidence of No Material Misstatements Mean (Standard Deviation)**

CAM Conditions	Materiality Conditions				
	<u>n</u>	No Materiality	<u>N</u>	Materiality	Total
No CAM	30	7.07 (2.27)	42	8.31 (1.76)	7.79 (2.07)
CAM	39	8.13 (2.07)	46	8.28 (1.63)	8.21 (1.83)
Total	69	7.67 (2.21)	88	8.30 (1.68)	8.02 (1.95)

**Panel B: Two-way ANOVA Model of Investor Confidence of No Material Misstatements**

Source of Variation	SS	df	MS	F	<i>p</i> <sup>58</sup>
Materiality	18.68	1	18.68	5.12	0.013
CAM	10.21	1	10.21	2.81	0.096
Materiality × CAM	11.34	1	11.34	3.11	0.040
Error	558.53	153	3.65		

R Squared = .058 (Adjusted R Squared = .040)

**Panel C: Simple Effect Tests for Investor Confidence of No Material Misstatements**

Source of Variation	F	<i>p</i>
Effect of materiality disclosure given no CAM	7.41	0.004
Effect of materiality disclosure given a CAM	0.14	0.356
Effect of CAM under No Materiality conditions	5.23	0.024
Effect of CAM under Materiality conditions	0.00	0.948

<sup>58</sup> Reported *p*-values in this table are one-tailed (except where there is no directional hypothesis).

Table 4.4 presents analysis of nonprofessional investors' perceptions of material misstatements. The dependent variable is investor confidence of no material misstatements, for which participants were asked to respond to the following question on an 11-point Likert scale: "Given the auditor's opinion, please indicate how confident you are that there are no material misstatements individually or in aggregate greater than the auditor's materiality threshold applied during the audit.", where '1' = "not confident", '6' = "somewhat confident", and '11' = "highly confident".

Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

H2b states that CAM disclosures do not affect investor perceived material misstatements. We provide the test results in Table 4.4 for nonprofessional investors' perceived material misstatements. The ANOVA results in Panel B of Table 4.4 indicate that there is a significant interaction effect of CAM and materiality disclosure ( $F = 3.11$ ,  $p = 0.040$ , one-tailed), suggesting that CAM disclosures may affect investors' material misstatements perceptions. Panel C of Table 4.4 presents the simple effect tests and shows that when audit materiality disclosures are not provided, investors perceived confidence of no material misstatements is significantly greater when CAM disclosures are provided than when they are not provided ( $F = 5.23$ ,  $p = 0.024$ , two-tailed). However, when materiality information is provided, perceived material misstatements do not differ between CAM and no CAM conditions ( $F = 0.00$ ,  $p = 0.948$ , two-tailed). These results suggest that CAM disclosures can increase investors' assessment of perceived material misstatements when audit materiality information is not made available. Therefore, we reject the null for H2b that CAM disclosures do not affect investor perceptions of material misstatements.

Taken together, the results reveal significant interaction effects of materiality and CAM disclosures on the dependent variables – perceived risks of stock and confidence of no material misstatements. First, we find that audit materiality disclosures mitigate the negative impact of CAM disclosures on nonprofessional investors' perceptions of investment risk. Specifically, CAM disclosures only increase investors' perceived risks of stock when audit materiality information is not provided but do not increase perceived risks of stock when materiality is provided. This is in line with the notion that audit materiality provides an important reference – a level of “precision” for users when evaluating the financial statements (Christensen et al. 2020; Eilifsen et al. 2020).

Second, our results suggest a substitution effect of materiality and CAM disclosures, such that either materiality or CAM disclosures can enhance nonprofessional investor confidence of

no material misstatements of the financial statements. Specifically, CAM (materiality) disclosures increase confidence of no material misstatements when materiality (CAM) disclosures are not provided. This is consistent with prior research that audit disclosures supplementing credible information, may increase investor confidence in the quality of financial statements (e.g., Kelton and Montague 2018).

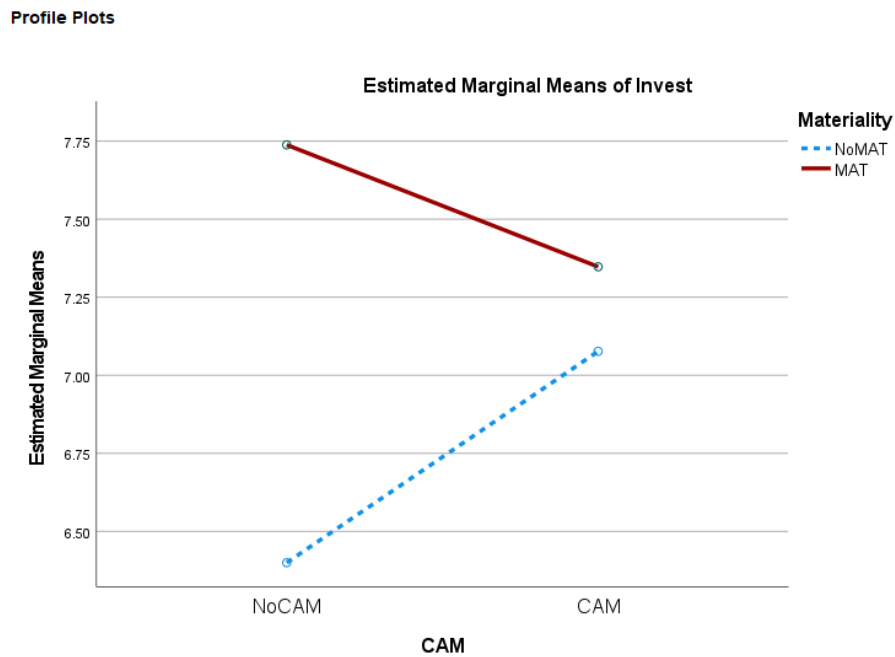
#### 4.5.3 *Additional Analyses*

To better understand the effects of materiality and CAM disclosures on nonprofessional investors' judgments and decisions in our setting, we also collect a set of supplementary dependent variables, in addition to our main dependent variables. We measure another dependent variable, participants' tendency to invest in the company.<sup>59</sup> Table 4.5 and Figure 4.3 present the testing results for investors' likelihood of investing. ANOVA results are shown in Panel B of Table 4.5, indicating that there is a significant materiality main effect ( $F = 5.17, p = 0.024$ , two-tailed) on nonprofessional investors' tendency to invest. Simple effect tests in Panel C of Table 4.5 further show that the materiality main effect is driven by the significant materiality effect when no CAM disclosure is provided ( $F = 6.55, p = 0.011$ , two-tailed). Specifically, when no CAM is disclosed, nonprofessional investors are more likely to increase their investment when audit materiality information is provided (Mean = 7.74) compared with when materiality is not provided (Mean = 6.40). However, when CAM disclosures are also provided, we show that investors' likelihood of investing does not differ regardless of whether materiality is disclosed or not.

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<sup>59</sup> The measure of investors' tendency to invest requires participants to respond using an 11-point Likert scale on the question "Based on the information provided about Trans-Global Export Ltd., please indicate how the reported investment gains affect the likelihood that you would invest in the company", where '1' = "greatly decrease the likelihood of investing", '6' = "do not change", and '11' = "greatly increase the likelihood of investing".

**FIGURE 4.3 – Investment Decisions**



**Note:** Figure 4.3 presents the means of nonprofessional investors' likelihood of investing. Participants provided their assessments of their likelihood to invest, when responded to the following question: "Based on the information provided about Trans-Global Export Ltd., please indicate in the following scale how the reported investment gains affect the likelihood that you would invest in the company.", where 1 = "greatly decrease the likelihood of investing", 6 = "do not change", and 11 = "greatly increase the likelihood of investing". Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

**TABLE 4.5**

**Two-way 2 × 2 ANOVA of Materiality and CAM effect on Investment Decisions**

**Panel A: Descriptive Statistics – Likelihood of Investing mean (standard deviation)**

CAM Conditions	Materiality Conditions				
	<u>n</u>	No Materiality	<u>N</u>	Materiality	Total
No CAM	30	6.40 (1.98)	42	7.74 (2.11)	7.18 (2.15)
CAM	39	7.08 (2.63)	46	7.35 (1.97)	7.22 (2.29)
Total	69	6.78 (2.38)	88	7.53 (2.03)	7.20 (2.22)

**Panel B: Two-way ANOVA model for Likelihood of Investing**

Source of Variation	SS	df	MS	F	<i>p</i> <sup>60</sup>
Materiality	24.77	1	24.77	5.17	0.024
CAM	0.79	1	0.79	0.16	0.686
Materiality × CAM	10.90	1	10.90	2.28	0.133
Error	732.53	153	4.79		

R Squared = .043 (Adjusted R Squared = 0.024)

**Panel C: Simple effect tests for Likelihood of Investing**

Source of Variation	F	<i>p</i>
Effect of Materiality requirements given no CAM	6.55	0.011
Effect of Materiality requirements given a CAM	0.32	0.570
Effect of CAM under No Materiality conditions	1.62	0.205
Effect of CAM under Materiality conditions	0.70	0.405

<sup>60</sup> Reported *p*-values in this table are two-tailed.

Table 4.5 presents additional analysis of nonprofessional investors' investment decisions. The dependent variable is the likelihood of investing, for which participants were required to respond to the following question: "Based on the information provided about Trans-Global Export Ltd., please indicate in the following scale how the reported investment gains affect the likelihood that you would invest in the company.", where 1 = "greatly decrease the likelihood of investing", 6 = "do not change", and 11 = "greatly increase the likelihood of investing". Materiality conditions were manipulated at two levels, between-subjects, by including or not including a materiality disclosure specifying the quantitative materiality level (in both percentage and dollar amount) applied for the audit. CAM conditions were manipulated at two levels, between-subjects, by including or not including a CAM disclosure about the trading securities in the audit report.

**TABLE 4.6**

**Mediation Tests**

	<b>Step 1</b> IV effect on DV	<b>Step 2</b> IV effect on mediator	<b>Step 3</b> Mediator effect on DV	<b>Step 4</b> IV effect on DV with mediator
<b>IV: MAT × CAM</b>	$F = 2.28$	$F = 3.11$	$F = 8.77$	$F = 0.45$
<b>DV: Investment</b>	$p = 0.067$	$p = 0.040$	$p = 0.000$	$p = 0.503$
<b>Mediator: Confidence of No Material Misstatements</b>				Mediator: $F = 58.74$ $p = 0.000$
<b>IV: MAT × CAM</b>	$F = 2.28$	$F = 4.85$	$F = 4.45$	$F = 2.61$
<b>DV: Investment</b>	$p = 0.067$	$p = 0.015$	$p = 0.000$	$p = 0.054$
<b>Mediator: Risk of Stock</b>				Mediator: $F = 0.58$ $p = 0.22$

Reported  $p$ -values in this table are one-tailed.

Potentially, investors’ judgments of material misstatement risks may influence their investment decisions. We then conduct mediation analyses to test if perceived material misstatements and risks of stock are mediators of the interaction effect between materiality and CAM disclosures on investment decisions. We follow the four-step procedure in prior literature (e.g., Baron and Kenny 1986; Clor-Proell 2009; Kenny, Kashy, and Bolger 1998). The mediation analyses results are summarised in Table 4.6. Step 1 results are from testing results of Panel B of Table 4.5 for investment decisions, indicating a significant interaction effect ( $F = 2.28$ ,  $p = 0.067$ , one-tailed). Step 2 results are obtained from previous ANOVA results reported in Table 4.3 and Table 4.4 for the dependent variables, showing significant interaction

effects on confidence of no material misstatements ( $F = 3.11, p = 0.040$ , Panel B, Table 4.4) and on perceived investment risk ( $F = 4.85, p = 0.015$ , Panel B, Table 4.3). In step 3, both perceived confidence of no material misstatements and risks of stock have a significant correlation with investment decisions ( $F = 8.77, p = 0.000$  and  $F = 4.45, p = 0.000$ , respectively).

For step 4, after controlling for confidence of no material misstatements, the interaction effect becomes insignificant for investment decisions ( $F = 0.45, p = 0.503$ ), and the significant effect of confidence of no material misstatements remains ( $F = 58.74, p = 0.000$ ), suggesting that confidence of no material misstatements fully mediates the interaction effect on investment decisions. However, after controlling for risk of stock, the interaction effect is still significant on investment decisions ( $F = 2.61, p = 0.054$ , Table 4.6). This suggests that although investors' perceived investment risk is highly correlated with their tendency to invest, investment risk perceptions are not a mediator for investment decisions in our research setting.

#### **4.6 Conclusion**

This study reports results of an experiment examining the joint effect of audit materiality and CAM disclosures on nonprofessional investors' risk perceptions. The results show that materiality and CAM disclosures interactively affect investor perceptions of investment risk and material misstatement risks. Specifically, the findings suggest that CAM disclosures can heighten nonprofessional investor perceived investment risks of a company. The heightened investment risk perceptions can be alleviated by providing audit materiality information. In addition, the results indicate that either materiality or CAM disclosures can serve to enhance nonprofessional investors' confidence of no material misstatements. Furthermore, the results reveal that there is an interaction effect of these two disclosures on nonprofessional investors'



investment decisions. This effect is fully mediated by investor confidence of no material misstatements.

The findings contribute to research and practice in a number of ways. First, we examine the effect of two expanded audit disclosures by providing evidence of the impact of materiality and CAM disclosures from a users' perspective. We draw on information seeking theory and source credibility theory to form the basis of our study that audit specific information can be useful for nonprofessional investors. Second, this study responds to recent calls for research concerning the communicative value of CAM and audit materiality disclosures (PCAOB 2013; Mock et al. 2016). We show that audit disclosures can be important influencing factors for financial statement users by providing evidence about how audit information is considered by nonprofessional investors in their decision-making process. Third, this study provides evidence that can be generalisable to accounting practice about the use of audit disclosures where there are uncertain financial disclosures. Lastly, our findings offer insights to regulators and standard setting bodies for implementing, evaluating and revising the new audit standards, and the potential implications of related changes.

This study is subject to a number of limitations, which provide opportunities for future research. For instance, we only focus on nonprofessional investors in our study. The impact of these new audit disclosures may be different for users who might have different information needs and levels of sophistication. In addition, our study is confined by using CAM disclosures of one type of matter-fair value estimates. It is possible that investor judgments on CAMs may vary due to variations in topics and/or numbers of CAM items. Lastly, our study only examines variations of materiality information between conditions where disclosure information is either present or absent. Future research should investigate varying levels of quantitative materiality to better understand materiality judgments of investors and the implications of practices of audit materiality from an investor standpoint.

Despite these limitations, our study provides new and important evidence on the joint effect of audit materiality and CAM disclosures on nonprofessional investor judgments and decisions.

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## APPENDIX C – INSTRUMENT 3

### EXPERIMENTAL MATERIALS

#### Company Description – [Same for all conditions]

Trans-Global Exports, Ltd. (the “Company”) is a publicly traded mid-sized specialty manufacturer of tools. The Company ships first-rate tools to carpenters, contractors, production facilities and fabricators across North America. Trans-Global’s products are largely sold directly to the end users, but the Company also sells to select distributors in certain high-demand markets. (This company and the industry sector appear to have experienced limited impact due to the COVID-19 pandemic.)

#### Industry Information

	<u>Return on Assets (ROA)</u>		<u>Profit Margin on Sales</u>	
	2020	2019	2020	2019
Trans-Global	1.61%	1.50%	6.70%	5.92%
Industry Average	1.55%	1.50%	5.93%	5.90%

The following selected financial information and audit report were obtained from the Company’s investor relations department and are available from public filings and the company website.

**Information on The Independent Auditor’s Report – [All conditions receive a baseline audit report as follows]**

Opinion

We have audited the accompanying consolidated statements of financial position of Trans-Global Exports, Ltd. (the “Company”) as of December 31, 2020, the related consolidated statements of income, comprehensive earnings, stockholders’ equity, and cash flow for each of the three years in the period ended December 31, 2020, and the related notes and financial statement schedule. In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020, and the results of its operations and its cash flows in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Big 4 Auditor  
February 12, 2021

**Critical Audit Matters Manipulation – [CAMs conditions include the CAMs disclosure as shown below immediately following the baseline audit report]**

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical matters does not alter in any way our opinion on the financial statements, and we are not, by communicating the critical audit matters, providing separate opinions on the critical audit matters on the accounts or disclosures to which they related.

*Trading securities*

As described further in Note 9 to the financial statements, Trans-Global Export Ltd. (the “Company”) reported investment gains of \$60.4 million that have arisen from Level 3 trading securities. The amounts of investment gains and Level 3 trading securities are significant imprecise estimates, based on unobservable inputs from the Company’s own assumptions and projections, and therefore have involved significant audit judgments to obtain the reasonableness of the presented results.

As a response to the identified critical audit matter, we obtained a detailed understanding and evaluated the design and implementation of the controls that the Company has established in relation to the determination of the estimates. In addition, our substantive audit procedures included the following: (1) evaluating management’s methods and assumptions used to estimate the Level 3 trading securities; (2) walking through management’s model and model inputs used to estimate these trading securities and the related gains/(losses); and (3) testing a sample of Level 3 trading securities by incorporating key data inputs to verify the accuracy of those data inputs. Based on our audit procedures we have concluded that the Level 3 trading securities and related gains recognized in the year are within an acceptable range.

**Critical Audit Matters Manipulation – [No CAMs conditions include the no CAMs discussion as shown below immediately following the baseline audit report]**

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We have determined that there are no critical audit matters to communicate in our report.

**Materiality Disclosure Manipulation – [Only Materiality disclosure present conditions include the materiality information below as the final part of the audit report]**

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. 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 determined materiality for the Company to be \$14.5 million, which is 5% of profit before tax. We believe that profit before tax provides us with an appropriate basis for materiality and is the most relevant measure for stakeholders as it is a focus of both management and investors.

Big 4 Auditor  
February 12, 2021

## Trans-Global Exports Financial Information – [Same for all conditions]

*Excerpts from the 2020 audited financial statements are provided below.*

**Trans-Global Exports, Ltd.**  
**Statements of Comprehensive Income**  
**For the year ended December 31, 2020**  
(Amounts in thousands)

	<b>2020</b>
Net Sales	\$2,716,256
Cost of goods sold	1,831,250
Gross profit	885,006
Selling, general & administrative expenses	402,500
Income from operations	482,506
Investment gains	60,400
	542,906
Interest expense	252,378
Income before income taxes	290,528
Income tax	108,571
Net income	\$181,957

The Fair Value Accounting Footnote from Trans-Global's 2020 annual report provides the following information:

The Company uses fair value accounting for its trading securities. Fair value is measured based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions. These two types of inputs create the following fair value hierarchy:

- Level 1 – Quoted prices for identical instruments in active markets.
- Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations whose inputs are observable.
- Level 3 – Model-derived valuations that reflect the Company's own assumptions and projections.

A portion of the Company's trading securities are measured at fair value using the company's assumptions (Level 3). The entire amount \$60,400,000 of the reported investment gains is due to changes in the Level 3 investment securities.

## SURVEY QUESTIONS

### Survey questions

- The Financial Accounting Standards Board (FASB) defines reliable information as information that is reasonably free from error and bias and faithfully represents what it purports to represent. Please indicate how reliable you perceive the overall financial statements of Trans-Global Export Ltd. to be.

Not Reliable	2	3	4	5	Somewhat Reliable	7	8	9	10	Highly Reliable
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- Based on the information provided about Trans-Global Export Ltd., please indicate in the following scale how the reported investment gains affect the likelihood that you would invest in the company.

Greatly decrease the likelihood of investing	2	3	4	5	Do not change	7	8	9	10	Greatly increase the likelihood of investing
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- Please rate Trans-Global Export Ltd.'s potential for future earnings growth.

Very Weak Potential	2	3	4	5	Neutral	7	8	9	10	Very Strong Potential
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- Please assess the risk of an investment in Trans-Global Export Ltd.'s common stock.

Very Low	2	3	4	5	Neutral	7	8	9	10	Very High
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5. Please rate the significance level do you consider the amounts of investment gains described in the financial information and information of management footnotes.

Not Significant	2	3	4	5	Somewhat Significant	7	8	9	10	Highly Significant
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6. The FASB defines relevant information as information that makes a difference in a decision by helping users to form predictions about the outcomes of past, present, and future events. Please indicate how relevant you perceive the overall financial statements of Trans-Global Export Ltd. to be.

Not Relevant	2	3	4	5	Somewhat Relevant	7	8	9	10	Highly Relevant
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7. Given the auditor's opinion, please indicate how confident you are that there are no material misstatements individually or in aggregate greater than the auditor's materiality threshold applied during the audit.

Not Confident	2	3	4	5	Somewhat Confident	7	8	9	10	Highly Confident
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8. Please indicate the usefulness of the information of Independent Auditor's Report for you to understand the financial information of Trans-Global.

Not Useful	2	3	4	5	Somewhat Useful	7	8	9	10	Highly Useful
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9. Please indicate the usefulness of the information of Independent Auditor's Report for you to assess the risks of misstatements of the financial information of Trans-Global.

Not Useful	2	3	4	5	Somewhat Useful	7	8	9	10	Highly Useful
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## Post-survey questions

1. In this study, Trans-Gobal Export Ltd.'s gains on its trading securities for the year ended December 31, 2020 was due to changes in the fair value of:
  - the Level 1 trading securities
  - the Level 3 trading securities
  - I do not recall
  
2. In this study, did information of Independent Auditor's Report include a Critical Audit Matter on Trading Securities?
  - Yes, it did include.
  - No, it did not include.
  
3. In this study, did information of Independent Auditor's Report include a discussion of the audit materiality applied the audit?
  - Yes, it did include.
  - No, it did not include.
  
4. The FASB defines reliable information as information that is reasonably free from error and bias and faithfully represents what it purports to represent. Please rank each level of the fair value hierarchy based on how reliable you think it is, with 1 = most reliable and 3 = least reliable. If two levels are equally reliable, assign them equal ranks.
  - \_\_\_\_ Level 1
  - \_\_\_\_ Level 2
  - \_\_\_\_ Level 3

## Demographic questions

1. How many college-level accounting courses have you taken?

\_\_\_\_\_

2. How many college-level finance courses have you taken?

\_\_\_\_\_

3. How many years of work experience do you have?

- 0-3 years
- 4-10 years
- 11-20 years
- 21-30 years
- 31 years and above

4. Please indicate how many times you have evaluated a company's performance by analysing its financial statements.

- Never
- 1 - 5 times
- 6 or more times

5. How many years of investment experience do you have?

- 0-2 years
- 3-5 years
- 6-10 years
- 11 years and above

6. For a **standard audit**, what do you think the size of an error would need to be considered material by the auditor as a percentage of net profit before tax?

0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	>10%	>20%
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7. How often do you refer to the auditor's opinion on the company's financial statements to inform you investment decisions?

- Always
- Sometimes
- Never

8. What does materiality mean?
- a) All risks are identified by the auditor
  - b) 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
  - c) Management discloses all relevant information to users
9. What are Critical Audit Matters (CAMs)?
- a) A misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced
  - b) Management disclosure of all relevant information to users
  - c) Matters arising from the current period audit of the financial statements that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments.
10. What is your gender?
- Male
  - Female
  - Other
11. What is the highest level of education you have completed?
- High School Diploma
  - Associate Degree
  - Bachelor's Degree
  - Master's Degree
  - M.B.A.
  - Ph.D.
  - J.D.
  - Other (please indicate) \_\_\_\_\_

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## **CHAPTER 5**

### **CONCLUSION**

#### **5.1 Introduction**

The primary objective of this dissertation is to improve understanding of the behavioural effects of expanded audit disclosures on auditors and users. Extant research mainly focuses on the potential for increased legal liabilities of auditors due to expanded audit disclosures (e.g., Brasel, Doxey, Grenier, and Reffett 2016; Gimbar, Hansen, and Ozlanski 2016; Kachelmeier, Rimkus, Schmidt, and Valentine 2019). This dissertation improves current understanding of the new audit disclosures by providing empirical evidence from both auditors' and users' perspectives. This chapter summarises the main findings of the three studies, and discusses their implications and contributions. Lastly, this chapter concludes with discussions of limitations of the studies and future research directions.

#### **5.2 Summary of Research Findings**

This dissertation consists of three separate but closely related studies with a focus on the new audit reporting model incorporating expanded audit disclosures, especially KAM and audit materiality disclosures (FRC 2013; 2017; IAASB 2015b). The first study, presented in Chapter Two, focuses on KAM and management uncertainty disclosures and examines the effect of these disclosures on auditors' accountability perceptions and fair value decisions. Using a fair value setting where there is uncertainty, this study examines auditors' fair value decisions under the current reporting environment in which auditors may disclose significant audit findings and make related audit decisions. Consistent with discounting and augmentation principles, Study One demonstrates that when KAM and uncertainty disclosures are provided

concurrently, auditors tend to make more conservative fair value decisions by proposing greater amounts of fair value adjustments for detected misstatements. Additionally, consistent with moral licensing (Jamal 2012; Koch and Schmidt 2010), Study One also finds that auditors feel less accountable for ensuring the reasonableness of financial statements when either form of disclosures are available.

Study Two, presented in Chapter 3, focuses on a different audit disclosure requirement, namely, the inclusion of audit materiality disclosures in the audit report. Study Two follows Study One to examine the effect of these disclosures on auditors by investigating whether and how the requirement to disclose audit materiality information, along with uncertainty disclosures, may affect auditors' judgment and decisions. Drawing on discounting and augmentation principles (Kelley 1971), Study Two predicts and finds that auditors feel more accountable when materiality information is required and management uncertainty disclosures are provided. Moreover, auditors are more likely to require their clients to make fair value adjustments when materiality disclosures and uncertainty footnotes are provided simultaneously.

Study Three, presented in Chapter 4, examines the effect of additional audit disclosures from a user's perspective. Specifically, Study Three examines the effect of KAM and audit materiality disclosures on nonprofessional investors' risk assessments. It finds that a fair value KAM and materiality disclosures interactively increase investor investment risk perceptions of a company and enhance investors' confidence that there are no material misstatements. Finally, Study Three illustrates that there is an interaction effect of these two disclosures on investment decisions and that this effect is fully mediated by investors' confidence of no material misstatements.

### **5.3 Research Implications**

The studies in this dissertation provide contributions to research, regulation, standard setting bodies, and accounting practice. First, existing auditing research on disclosure effects shows that management disclosures may affect individuals' judgments and decisions due to moral licensing (e.g., Griffin 2014; Jamal 2012; Koch and Schmidt 2010). Moral licensing suggests that individuals may feel licensed to act in an unethical manner after engaging in good behaviour (i.e., they have made proper disclosures) (Jamal 2012). Study One demonstrates that KAM and uncertainty disclosures can affect auditors' accountability perceptions due to the moral licensing effect. Specifically, Study One extends this stream of research by showing that KAM disclosures or uncertainty footnotes may reduce auditors' perceived accountability towards their assurance of the reasonableness of financial reports when either type of disclosure is provided. Thus, Study One provides theory-consistent evidence that KAM disclosures may decrease auditors' perceived accountability due to the moral licensing effect.

Second, prior psychology research demonstrates that discounting and augmentation principles affect individuals' judgments and decisions (Kelley 1971). The discounting principle suggests that an individual may discount the role of a factor to an effect when there are other possible factors that also exist to explain the same effect (Kelley 1971). However, the augmentation effect may occur when one factor (facilitative) enhances the effect while the other factors (inhibitory) reduce the same effect, such that an individual may put more weight on the facilitative factor when explaining the effect (Kelley 1971).

Study One and Study Two both draw on discounting and augmentation principles to predict auditors' fair value judgments and decisions, and demonstrate that additional audit disclosures and management uncertainty disclosures may become competing factors relating to the role of the auditors in ensuring the reasonableness of financial reports. Specifically, management disclosures may be considered by auditors as an inhibitory factor that diminishes

the auditors' role of assuring reasonable reporting. In anticipating such discounting, auditors' fair value decisions may be explained by the augmentation effect, such that auditors may choose to enhance the efficacy of their own disclosures (KAMs in Study One and materiality disclosures in Study Two) through their adjustment decisions. Therefore, the augmentation effect may manifest when both types of disclosures are provided simultaneously, such that auditors tend to make more conservative fair value decisions as a means of enhancing emphasis on their assurance roles.

Study One shows that auditors may propose a greater degree of adjustments when KAM and uncertainty disclosures are both provided than when only one type of disclosures is available. Similarly, Study Two demonstrates that when audit materiality and uncertainty disclosures are both presented, auditors' tendency to require fair value adjustments increases. Thus, Study One and Study Two provide theory-consistent evidence that additional audit disclosures may result in more conservative fair value decisions, when management disclosures are also provided than when only one type of disclosure is provided.

These findings have practical implications for audit firms and financial statement users. The findings show auditors' fair value judgments and decisions change due to the new disclosure requirements. For financial statement users, the findings imply that auditors may become more conservative when auditing significant fair value measures when auditors also need to provide additional audit disclosures (e.g., KAM or audit materiality disclosures).

Study Three, presented in Chapter 4, extends recent research on audit materiality (Christensen, Eilifsen, Glover, and Messier 2020; Eilifsen, Hamilton, and Messier 2020), demonstrating that KAM and audit materiality disclosures jointly affect user judgments. The findings inform auditing practice and standard setters about how materiality information and KAMs may interact to influence risk perceptions of nonprofessional investors. In addition,



findings of Study Three may be valuable for regulators and standard setters when evaluating the benefit of including audit materiality disclosures in reporting models in other jurisdictions, such as the US and Australia where it is not currently required (e.g., IAASB 2015a; PCAOB 2017).

#### **5.4 Research Limitations and Future Research**

All three studies in this dissertation use the experimental method that allows the opportunity to provide empirical evidence prior to actual implementations of changes to regulations and standards (e.g., Elliott 2015). This is important for regulators and standard setting bodies, because *ex ante* evidence provides implications of unintended consequences of proposed changes to the new regulation, mitigating potential costs relating to standard implementations, revisions, and unintended consequences (Leuz and Wysocki 2016). Unlike other research methods, such as the archival method, experimental research often has the advantage of removing extraneous factors by using highly simplified and tightly controlled experimental settings, but which can limit external validity (Bloomfield, Nelson, and Soltes 2016). However, the simplified and controlled "... settings may not precisely mimic the real environment in which individuals make these judgments and decisions..." (Elliott 2015, 529). Accordingly, the studies in this thesis, using controlled experimental settings, have to trade-off the benefit of increased internal validity with limited external validity.

In terms of other limitations, for each study in the dissertation there is only one significant audit issue to investigate related KAM and uncertainty disclosure effects. Thus, the results and interpretations are confined by the specific experimental conditions. However, the fair value settings are appropriate to test the new audit disclosure effects, as auditors' fair value related considerations and decisions are found to be common KAM issues, and are typical materiality

applications during an audit (KPMG 2017). Nonetheless, in real practice, multiple significant issues are usually included in an audit (KPMG 2017). Future research may explore whether findings of studies of this dissertation still hold for multiple KAM-related issues. Future research may also expand KAM issues in other accounting areas other than fair value to enrich our understanding of additional audit disclosures on financial statement users' and preparers' judgments and decisions. Finally, as audit reporting regulations and standards mature, future research using different research settings may expand to include different types of audit disclosures and other concurrent disclosures within the information environment of the users to better understand disclosure effects on individual behaviours.

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