Three Essays on Key Audit Matters Dissimilarity

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THREE ESSAYS ON KEY AUDIT MATTERS DISSIMILARITY

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Abstract

My dissertation consists of three essays reported in three different Chapters, each related to a different research question about the Key Audit Matters (KAM) section in audit reports. KAM disclosures have been implemented to enhance the communicative value of audit reports and to increase users' confidence in the audit process and the companies' financial statements (EY Reporting, 2015). KAMs reflect the greatest risks of material misstatements encountered during the audit process based on auditors' professional judgment (FRC, 2020). Their implementation represents the most significant change in the audit report for the past 70 years.

KAMs have first been implemented in the United Kingdom (UK) in 2013. To get the largest sample period possible, I use hand-collected data from premium-listed non-financial firms on the London Stock Exchange (LSE). KAMs represent additional qualitative disclosures in the audit report, where auditors report one KAM per risk encountered during the audit process. Each KAM is related to a significant matter and is composed of two parts. Auditors first describe the risk encountered and then explain the audit procedures performed to address the risk identified. I define these two parts as the following two KAM components: the risk description and the auditors' response and observation. Although auditors are encouraged to write KAMs in their own words (FRC, 2013b), critics of this new disclosure requirement fear that KAMs would be boilerplate and standardized (Citi Research, 2014; Gray, Turner, Coram, & Mock, 2011; Mock et al., 2013).

Although several researchers examine the consequences of the KAM regulation worldwide, I believe that examining the content of KAMs provides more granular insights into the audit process. I develop measures of dissimilarity to capture specific information in KAMs. These measures reflect differences in words written by auditors for the same type of KAM. My Thesis contributes to the KAM literature by providing a granular analysis of the content of KAM disclosures and by complementing studies examining textual features of KAMs (e.g.,

Burke, Hoitash, Hoitash, & Xiao, 2022; Chen, Nelson, Wang, & Yu, 2020; Gutierrez, Minutti-Meza, Tatum, & Vulcheva, 2018; Lennox, Schmidt, & Thompson, 2022).

Although textual analysis is gaining increased interest in accounting research, it is still sparse in auditing research. In the first Chapter of my Thesis entitled "*Key Audit Matters Dissimilarity: Determinants and Consequences*", we detail client and audit firm characteristics associated with client-specific (dissimilar) information in KAMs. Our findings suggest that the two KAM components, namely the risk description and the auditors' response and observation, are different, as the client-specific information they contain is driven by different factors. Our results indicate that the main characteristics explaining client-specific (dissimilar) KAMs are client-firm and audit partners' unobservable factors. We also show that controlling for similar risks (by grouping KAMs per topic) and the length of the KAM when computing the dissimilarity scores is important as it provides different results regarding KAM determinants. We find some evidence that KAM dissimilarity is associated with audit quality, and we also find that more dissimilar KAMs are associated with longer audit delays. We contribute to the literature by explaining differences among metrics capturing client-specific information in KAMs used in the literature (e.g., Chen, Nelson, et al., 2020; Zeng, Zhang, Zhang, & Zhang, 2021). We also complement the KAM literature that examines the content of KAMs by analyzing the determinants of KAM dissimilarity based on client and audit firm characteristics as well as some of its consequences.

In the second Chapter entitled "*Client-Specific Information in Key Audit Matters and Audit Risks*", we link the KAM and audit risks components. This association enables us to better understand the audit risk model, a foundation of the auditing literature. We find that client-specific information in the risk description of the KAM is associated with higher audit risks, reflecting inherent and control risks. We also find that client-specific information in the auditors' response and observation is associated with lower audit risks, reflecting detection

risks. Overall, auditors' disclosure of client-specific information in KAMs is associated with lower audit risks. We further show that client-specific information in the entire KAM and the auditors' response and observation are associated with higher audit quality and greater audit effort. This result suggests that auditors reduce detection risks and the overall level of audit risks without compromising audit quality or audit effort. Additional tests show that our results are stronger when KAM topics are new or infrequent, when auditors face lower industry litigation risks, when managers' compensation is linked to firm performance and firms are more profitable, and when auditors are industry experts and have a short tenure. By linking the textual content of KAMs with the audit risks components, we contribute to the audit risk literature and highlight the importance to examine the two KAM components separately, as they provide complementary insights about audit risks (e.g., Felix, Gramling, & Maletta, 2001; Hackenbrack & Knechel, 1997; Hogan & Wilkins, 2008; Mock & Wright, 1999).

In the third Chapter entitled "*Is Specific Information in Key Audit Matters Informative? The Role of Risk Disclosures*", I focus on the informativeness of auditors' risk disclosures. KAMs provide unique opportunities to examine auditors' risk disclosures. I thus complement the literature focusing on managerial risk disclosures (Beatty, Cheng, & Zhang, 2019; Elzahar & Hussainey, 2012; Tan, Zeng, & Elshandidy, 2017) by providing insights from auditors' risk disclosures. While risk disclosures represent a fundamental source of information for market participants, they become less informative as managers disclose fewer risks of material misstatements (Beatty et al., 2019). I find that auditors' risk disclosures are informative if they provide dissimilar information in two dimensions simultaneously: compared to (a) the previous year and (b) industry peers. My results are stronger when investors face greater information asymmetries, and when all the audit committee members are independent. This study contributes to prior literature that examines the informativeness of the implementation of KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022) and KAM features (e.g.,

Abbott & Buslepp, 2022; Chang, Chi, & Stone, 2022; Seebeck & Kaya, 2022) by providing granular analyses into the content of KAMs. This study is the first to examine two dimensions of KAM dissimilarity encompassing both temporal and cross-sectional variations.

Résumé de la Thèse

Ma thèse se compose de trois essais rapportés dans trois chapitres différents, chacun lié à une question de recherche différente sur la section des Key Audit Matters (KAMs, en français, points clés d'audit) dans les rapports d'audit. Les KAMs ont été mis en œuvre afin d'accroître la valeur communicative des rapports d'audit et la confiance de ses utilisateurs dans le processus d'audit et les états financiers des sociétés (EY Reporting, 2015). Les KAMs reflètent les plus grands risques d'anomalies significatives rencontrés au cours du processus d'audit, sur la base du jugement professionnel des auditeurs (FRC, 2020). Leur mise en œuvre représente le changement le plus important apporté au rapport d'audit au cours des 70 dernières années. (EY Reporting, 2015 ; FRC, 2020)

Les KAMs ont été mis en œuvre pour la première fois au Royaume-Uni en 2013. Pour obtenir la plus grande période d'échantillonnage possible, j'utilise des données collectées manuellement auprès de sociétés non financières cotées à la Bourse de Londres. Les KAMs représentent des informations qualitatives supplémentaires dans le rapport d'audit, où les auditeurs signalent un KAM par risque rencontré au cours du processus d'audit. Chaque KAM représente un risque d'audit et est composé de deux parties. Les auditeurs décrivent d'abord le risque reconnu comme un KAM, puis ils expliquent les procédures d'audit suivies pour traiter le risque identifié. Je définie ces deux parties comme les composants des KAMs suivants : la description du risque et la réponse et l'observation des auditeurs. Bien que les auditeurs soient encouragés à rédiger les KAMs avec leurs propres mots (FRC, 2013b), les critiques de cette nouvelle exigence de divulgation craignent que les KAMs ne soient passe-partout et normalisées (Citi Research, 2014 ; Gray, Turner, Coram et Mock, 2011 ; Mock et coll., 2013).

Bien que plusieurs chercheurs examinent les conséquences de la réglementation des KAMs dans le monde entier, je pense que l'examen du contenu des KAMs fournit des informations plus granulaires sur le processus d'audit. Je développe des mesures de

dissimilarité pour capturer des informations spécifiques dans les KAMs. Ces mesures reflètent les différences dans les termes rédigés par les auditeurs pour le même type de KAM. Ma Thèse contribue à la littérature des KAMs en fournissant une analyse granulaire du contenu des KAMs et en complétant les études examinant les caractéristiques textuelles des KAMs (par exemple, Burke, Hoitash, Hoitash et Xiao, 2022 ; Chen, Nelson, Wang et Yu, 2020 ; Gutierrez, Minutti-Meza, Tatum et Vulcheva, 2018 ; Lennox, Schmidt et Thompson, 2022).

Bien que l'analyse textuelle suscite de plus en plus d'intérêt pour la recherche comptable, elle est encore rare dans la recherche en audit. Dans le premier Chapitre de ma Thèse intitulé « *Key Audit Matters Dissimilarity: Determinants and Consequences* », nous détaillons les caractéristiques des clients et des cabinets d'audit associées aux informations spécifiques aux clients (dissemblables) dans les KAMs. Nos résultats suggèrent que les deux composants des KAMs, c'est-à-dire la description du risque et la réponse et l'observation des auditeurs, sont différents, car les informations spécifiques au client qu'elles contiennent sont déterminées par des facteurs différents. Nos résultats indiquent que les principales caractéristiques expliquant les KAMs spécifiques au client (dissemblables) sont des facteurs non observables du client audité et des associés de l'entreprise d'audit. Nous montrons également qu'il est important de contrôler par la similarité des risques (en regroupant les KAMs par sujet) et la longueur du KAM lors du calcul des scores de dissimilarité car cela fournit des résultats différents concernant les déterminants des KAMs. Nous trouvons certaines preuves que la dissimilarité des KAMs est associée à la qualité de l'audit ; et nous trouvons également que la dissimilarité des KAMs est associée à des délais d'audit plus longs. Nous contribuons à la littérature en expliquant les disparités entre les différentes mesures reflétant l'information spécifique au client dans les KAMs utilisées dans la littérature (par exemple, Chen et coll., 2020 ; Zeng, Zhang, Zhang, & Zhang, 2021). Nous complétons également la littérature des KAMs qui examine leur contenu en analysant les déterminants de la dissimilitude des KAMs en fonction

des caractéristiques des clients et des cabinets d'audit ainsi que de certaines de ses conséquences.

Dans le deuxième Chapitre intitulé « *Client-Specific Information in Key Audit Matters and Audit Risks* », nous relions les composants des KAMs avec ceux des risques d'audit. Cette association nous permet de mieux comprendre le modèle de risque d'audit, un fondement de la littérature d'audit. Nous constatons que l'information spécifique au client dans la description des risques du KAM est associée à des risques d'audit plus élevés, reflétant les risques inhérents et de contrôle. Nous constatons également que l'information spécifique au client dans la réponse du KAM est associée à des risques d'audit plus faibles, reflétant les risques de détection. Dans l'ensemble, la divulgation par les auditeurs d'information spécifique aux clients dans les KAMs est associée à des risques d'audit plus faibles. Nous montrons en outre que l'information spécifique au client dans l'ensemble du KAM et dans la réponse et l'observation des auditeurs est associée à une meilleure qualité de l'audit et à un effort d'audit accru. Ce résultat suggère que les auditeurs réduisent les risques de détection et le niveau global des risques d'audit sans compromettre la qualité de l'audit ou les efforts d'audit. Des tests supplémentaires montrent que nos résultats sont plus robustes lorsque les sujets des KAMs sont nouveaux ou peu fréquents, lorsque les auditeurs sont confrontés à des risques de litiges sectoriels plus faibles, lorsque la rémunération des dirigeants est liée à la performance de l'entreprise et que les entreprises sont plus rentables, et lorsque les auditeurs sont des experts du secteur et ont une courte ancienneté. En reliant le contenu textuel des KAMs aux composants des risques d'audit, nous contribuons à la littérature sur les risques d'audit et soulignons l'importance d'examiner les deux composants des KAMs séparément, car ils fournissent des informations complémentaires sur les risques d'audit (par exemple, Felix, Gramling et Maletta, 2001 ; Hackenbrack et Knechel, 1997 ; Hogan et Wilkins, 2008 ; Mock et Wright, 1999).

Dans le troisième Chapitre intitulé « *Is Specific Information in Key Audit Matters Informative? The Role of Risk Disclosures* », j'examine le caractère informatif de la divulgation des risques par les auditeurs. Les KAMs offrent une opportunité unique d'examiner les risques du point de vue des auditeurs. Je complémente ainsi la littérature axée sur la divulgation des risques par les dirigeants (Beatty et coll., 2019 ; Elzahar et Hussainey, 2012 ; Tan et coll., 2017) en examinant la divulgation de risques par les auditeurs. Bien que la divulgation de risques représente une source fondamentale d'information pour les marchés de capitaux, elle devient moins informative à mesure que les gestionnaires divulguent moins de risques d'anomalies significatives (Beatty et coll., 2019). Je trouve que la divulgation de risques par les auditeurs est informative si elle fournit des informations spécifiques dans deux dimensions simultanément : par rapport (a) à l'année précédente et (b) aux pairs du même secteur. Mes résultats sont plus robustes lorsque les investisseurs sont confrontés à de plus grandes asymétries d'information et lorsque tous les membres du comité d'audit sont indépendants. Cette étude contribue à la littérature qui examine le caractère informatif de la mise en œuvre des KAMs (par exemple, Burke et coll., 2022 ; Gutierrez et coll., 2018 ; Lennox et coll., 2022) et les caractéristiques des KAMs (par exemple, Abbott et Buslepp, 2022 ; Chang et coll., 2022 ; Seebeck et Kaya, 2022) en fournissant des analyses détaillées du contenu des KAMs. Cette étude est la première à examiner deux dimensions de la dissimilitude des KAMs englobant à la fois les variations temporelles et transversales.

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LIST OF ABBREVIATIONS

AC	Audit Committee
AICPA	American Institute of Certified Public Accountants
Big 4	Deloitte, EY, KPMG, and PwC
CAMs	Critical Audit Matters
CSS	Cosine Similarity Score
D/E	Debt-to-Equity
ERC	Earnings Response Coefficients
EU	European Union
EY	Ernst & Young
FRC	Financial Reporting Council
FS	Financial Statements
GBP	Great Britain Pound
IAASB	International Auditing and Assurance Standards Board
ISA	International Standard on Auditing
IT	Information Technology
JOAs	Justifications of Assessments
KAMs	Key Audit Matters
LSE	London Stock Exchange
M&A	Mergers and Acquisitions
MD&A	Management Discussion and Analysis
PwC	PricewaterhouseCoopers
RMM	Risks of Material Misstatements
ROA	Return on Assets
ROE	Return on Equity
SG&A	Selling, General, and Administrative Expenses
UK	United Kingdom
US	United States

GENERAL INTRODUCTION

Three Essays on Key Audit Matters Dissimilarity

"You know, the result of months of our work is a three-page report. But there's so much work behind it which goes fully hidden." (Senior auditor in a Big 4)

1. Background and Motivation

The role of auditors is essential to ensure trust in the market and to provide assurance on firms' financial statements. For years, auditors provided a binary opinion (qualified versus unqualified) in the audit report providing very little client-specific information (Christensen, Neuman, & Rice, 2019). However, the audit is more than providing an opinion and a comprehensive definition of an audit is as follows: "*An economically motivated professional service designed to reduce information risk that relies on the knowledge and skills of experts used in a systematic process that considers the idiosyncratic needs of a client where the outcome is unobservable and subject to market forces and regulatory constraints*" (Knechel, 2021, p. 134).

Despite the extent of audit research, there are still many grey areas in the audit process, due to confidentiality issues rendering access to audit firms difficult (Pentland, 1993; Power, 1991; Radcliffe, 1999). For this reason, the audit process is often characterized as a "black box" and results in an expectation gap. This expectation gap is defined as "*the difference between what the public and financial statement users believe auditors are responsible for and what auditors themselves believe their responsibilities are*" (AICPA, 1993). To improve the communication between auditors and users of audit reports, new regulations on auditor's disclosures have been adopted.

The Financial Reporting Council (FRC) first mandated auditors to disclose Risks of Material Misstatements (RMM), the precursor of Key Audit Matters (KAMs), for premium listed firms with fiscal year-end on or after September 30th, 2013, in the United Kingdom (UK)

and Ireland. Similar legislations of the expanded audit report have then been adopted worldwide, especially since the introduction of Key Audit Matters in December 2016 in the European Union (EU) (International Standard on Auditing ISA701). KAMs represent a risk-based exercise from the auditors' perspective. Based on professional judgment, auditors identify the greatest risks of material misstatement that occurred during the fiscal year and report them as KAMs. KAMs are defined as "*Those matters that, in the auditor's professional judgment, were of most significance in the audit of the financial statements of the current period. Key audit matters are selected from matters communicated with those charged with governance.*" (IAASB, 2015). A similar regulation has been adopted in the United States (US) in 2019 with Critical Audit Matters (CAMs), which focus on material misstatements.[1]

KAMs represent the biggest change in the audit report for the past 70 years and aim to improve the communication between auditors and users of the audit report. Auditors can identify KAMs based on client-specific events or transactions that occurred during the fiscal year. KAMs represent qualitative disclosures in the audit report, where auditors report one KAM per risk of material misstatement. Each KAM is composed of two components: the risk description, where auditors describe the risk disclosed as a KAM, and the auditors' response and observation, where auditors detail the procedures performed to address the risk identified. Appendix A provides examples of KAMs. Each KAM is identified by a different title. In the first example, auditors provide the risk description on the left and the auditors' response on the right. In the second example, auditors first refer to the related financial statement footnotes and then clearly separate the risk description, the auditors' response, and their observations.

[1] Throughout my Thesis, I refer to Key Audit Matters as KAMs, and Critical Audit Matters as CAMs. KAMs are implemented globally while CAMs are specific to the United States. KAMs and CAMs are similar, however, with a notable distinction. While KAMs refer to the greatest risks of material misstatements, CAMs represent material items communicated to the audit committee.

The notion of expanded audit reports is not new and expanded audit reports have already been implanted with the objective to reduce the expectation gap. In the US, the audit report has been subject to new regulations leading to an expanded form of the audit report after September 1993. Several studies concluded that the then-expanded audit report did not reduce the expectation gap (T. Brown, Hatherly, & Innes, 1993; Gwee, Lim, & Ng, 1996; Hatherly, Innes, & Brown, 1991; Innes, Brown, & Hatherly, 1997; Manson & Zaman, 1999, 2001). Similar results are found in France with the new audit report of 1995 not reducing the expectation gap (Gonthier-Besacier, 2001).

The implementation of KAMs relates to another expectation gap and aims to reduce the audit information gap by providing users of the audit reports with more information about the audit. Most qualitative papers analyzing KAMs examine the perceptions of auditors and users of the audit reports concerning the new regulation and whether the expectation gap is reduced. The main finding is that while useful and enhancing audit report transparency, KAM disclosures do not reduce the expectation gap (e.g., Kutera, 2019; Levanti, 2019; Simnett & Huggins, 2014).

Despite the KAM literature growing quickly, research examining the content of KAMs is still sparse. The two KAM components serve different purposes, however, only a few papers examine them separately (e.g., Anding, Blay, & Bozanic, 2022; Chen, Nelson, et al., 2020). Moreover, the literature on KAMs is often mixed, especially regarding the informativeness of the implementation of KAM disclosures. This suggests that there is a need to better understand KAM disclosures as several important questions remain unanswered. Are KAMs boilerplate? Which factors are associated with auditors writing different KAMs? What do KAMs reflect? Under which conditions are KAMs informative? My Thesis helps answer these questions by focusing on textual analyses of the content of KAMs with dissimilarity measures to capture specific information disclosed in KAMs.

The rest of the general introduction is structured as follows. I first review the KAM literature. Second, I define the dissimilarity measures and explain how they are computed. Third, I provide an overview of the three Chapters of the Thesis. Each Chapter focuses on a different research question about KAM dissimilarity. The rest of the Thesis is composed of the three research articles in three different Chapters. I finally end my Thesis with an overall conclusion stating the limitations of my analyses and avenues for future research.

2. Literature Review of KAM Research

The KAM literature is expanding quickly and spans several research areas. Appendix B and C present graphs and summary tables of all the quantitative papers related to KAMs, respectively. Each Panel covers a different research area related to KAMs. Most of the literature on KAMs examines the determinants and consequences of the number and types of KAMs disclosed (Appendix B and C Panel A). The second most researched area investigates the consequences of the implementation of the expanded audit report, mostly reflecting the regulatory change related to KAMs, on audit fees, audit quality, audit delay, and investors' reactions among others (Appendix B and C Panel B). Using textual analysis, some researchers examine the determinants and consequences of textual features of KAM (such as their readability, tone, similarity, and specificity) (Appendix B and C Panel C). The consequences of audit firm culture on KAM disclosures are also examined by a few researchers (Appendix B and C Panel D). Finally, the other papers examining a specific type of KAM are summarized in Appendix B and C Panel E. In this section, I provide a summary of the findings from prior literature related to KAMs.

Before the introduction of KAMs, some jurisdictions experienced similar expanded audit reports. In France, auditors must justify the findings made during the audit and disclose them in a Justifications of Assessments (JOAs) section in the audit report. JOAs aim to enhance the informative value of audit reports. JOAs are part of the French expanded audit reports and

represent matters that are important in the audit. Research on JOAs became more popular as regulators were discussing the expanded audit report with KAMs. However, JOAs differ from KAMs in that auditors are not required to explain why the matter is important in JOAs (Bédard, Gonthier-Besacier, & Schatt, 2019). Despite JAOs being implemented since 2003, two decades ago, the literature on JOAs in France is sparse. The characteristics of JOAs are quite similar from one year to the other (Gonthier Besacier & Bedard, 2013). The disclosure of JOAs in France does not influence investors' reactions and does not change the audit report lag, audit quality, or audit fees (Bédard et al., 2019). The literature on KAMs began with the decision of the FRC to expand audit reports in the UK and Ireland starting in 2013 (FRC, 2013a), a decade after the implementation of JOAs in France.

Most of the literature on KAM disclosure is experimental and quantitative. There are some qualitative papers on KAMs, especially literature reviews that highlight the academic literature related to KAMs (e.g. Bédard, Coram, Espahbodi, & Mock, 2016; Gimbar, Hansen, & Ozlanski, 2015; Gold & Heilmann, 2019; Masdor & Shamsuddin, 2018; Velte & Issa, 2019). The literature reviews focus on both experimental and archival research. Academic papers on KAM-related topics are recent and thus generally have a few years of data for the analyses. Qualitative papers related to KAMs other than literature reviews usually focus on the perceptions of auditors and users of the audit reports concerning the new regulation and whether the expectation gap is reduced after the disclosure of KAMs. The main finding is that while useful and enhancing audit report transparency, KAM disclosures do not reduce the expectation gap (e.g. Kutera, 2019; Levanti, 2019; Segal, 2019; Simnett & Huggins, 2014). Audit partners feel that ISA701 is ambiguous and they have discretion in its application (Abdullatif & Al-Rahahleh, 2020). Recent studies in the US examine the implementation of CAMs. These papers find that auditors engage in herding behavior when writing CAMs and avoid standing out from

their peers (Dannemiller, Doxey, Hoang, & Houston, 2022; Griffith, Rousseau, & Zehms, 2022).

Experimental research on KAMs typically focuses on the association between KAM disclosures and auditors' litigation risks. When an accounting estimate is reported as a KAM, auditors express lower skeptical action in proposing adjustment amounts (Asbahr & Ruhnke, 2019). Auditors are perceived as more negligent if they disclose a KAM without clarification of reasonable assurance, but auditor liability exposure is mitigated if they include such clarification (A. Backof, Bowlin, & Goodson, 2019). Auditors have reduced litigation risks when they disclose KAMs related to undetected misstatements, which are difficult to foresee, but there is no relation between auditor litigation risks and KAMs related to detected misstatements (Brasel, Doxey, Grenier, & Reffett, 2016). Moreover, audit committee members perceive auditor litigation risks as higher when auditors disclose a KAM dissimilar to a note in the financial statements (Lee, Moroney, & Phang, 2019).

The literature on KAMs triggers many interests and is rapidly growing. Researchers worldwide have published a high number of papers in local journals examining statistics of KAM disclosures in various countries (e.g., France, Thailand, Romania, Spain, the UK, Malaysia, Belgium, Brazil, Turkey, etc.). Many authors examine the determinants and consequences of KAM disclosures based on the number and types of KAMs disclosed (see Appendix B and C Panel A for an overview of these papers). They usually look at the determinants of KAMs and their characteristics (numbers and type of KAMs disclosed) by industry, and by audit firms. Both auditor and client characteristics explain the magnitude and type of KAMs disclosed.

Several researchers examine audit firms characteristics associated with the number and type of KAMs disclosed. Audit fees are found to be positively associated with the number of KAMs disclosed (Danielsson & Sundberg, 2019; Ferreira, 2018; Oghuvwu & Orakwue, 2019).

However, in Zagreb, the disclosures of the amount of fees (audit and non-audit related fees) paid to the auditor are not associated with the number of KAMs disclosed (Šušak & Filipović, 2020). In another study, audit fees and audit firm rotation are not found to be associated with the number of KAMs disclosed (Hategan, Pitorac, & Crucean, 2022). There are differences in the number of KAMs disclosed depending on the audit firms (Danielsson & Sundberg, 2019). More profitable audit firms (Chen, Elemes, Hope, & Yoon, 2020) and auditors facing greater litigation risks (Sulcaj, 2020) are associated with more KAMs and CAMs disclosed, respectively. Audit firm (whether the auditor is a Big 4) and the audit opinion (whether a modified opinion is issued) are negatively related to the number of KAMs disclosed (Ferreira, 2018; Ferreira & Morais, 2019; Sierra-García, Gambetta, García-Benau, & Orta-Pérez, 2019; Tušek & Jezovita, 2018).

Audit partners play a greater role than audit firms in influencing the similarity of the number, type, length, and tone of KAMs disclosed (H.-L. Lin & Yen, 2022; Rousseau & Zehms, 2022). In South Africa, a change in audit partner is not associated with the number of KAMs disclosed, while a change in audit firm is (Duboisée de Ricquebourg & Maroun, 2022). Regarding the audit partner's gender, the results are mixed. Female audit partners are more likely to disclose more KAMs compared to male audit partners (Abdelfattah, Elmahgoub, & Elamer, 2020), but there is also contrary evidence that female audit partners disclose significantly less but longer KAMs compared to male audit partners (Shao, 2020). Danielsson and Sundberg (2019) find that audit partner gender does not have a significant effect on the number of KAM disclosed. Auditor experience and industry expertise positively reflect the number of KAMs disclosed but are not associated with the type of industry-specific KAMs disclosed (Shao, 2020).

Regarding client characteristics, there is a positive association between client firms' size, profitability, leverage, complexity, riskiness, and clients with recent financial reporting

issues and the number of KAMs disclosed (Alkelin & Karlsson, 2018; Andersen & Hansen, 2018; Bepari, Mollik, Nahar, & Islam, 2022; Ferreira & Morais, 2019; Genç & Erdem, 2021; Hategan et al., 2022; Lennox et al., 2022; Pinto & Morais, 2019; Sierra-García et al., 2019). Firms' lifecycle is also associated with the number of KAMs disclosed. Auditors disclose fewer KAMs for firms in the introduction stage of the lifecycle, and more KAMs for firms in the growth and later stages of the lifecycle (Bepari et al., 2022). More precise accounting standards are associated with a greater number of KAMs disclosed (Pinto, Morais, & Quick, 2020). The number of KAMs disclosed also depends on the industry affiliation of the client firm, with banks having on average fewer KAMs (Andersen & Hansen, 2018; Pinto & Morais, 2019). Lower financial reporting quality is associated with fewer CAMs reported (Sulcaj, 2020), however, earnings management is not found to be associated with the number of KAMs in Germany (Loew & Mollenhauer, 2019). Audit committee expertise (Zhang & Shailer, 2022) and high-quality and sustainable governance systems (Fera, Pizzo, Vinciguerra, & Ricciardi, 2022) are associated with fewer KAMs disclosed. Moreover, managerial legal liability coverage is positively associated with the number of KAMs disclosed (C. Lin, Hsu, Chou, Chao, & Li, 2020).

Prior literature also examines the consequences of the number and type of KAMs disclosed on audit fees, audit quality, and investors' reactions among others, but provides mixed results (Appendices B and C Panel A). Prior literature finds that the magnitude and types of KAMs disclosed are not significantly associated with incremental information content, audit fees, audit quality, or audit firm switch (Gu & Ncuti, 2020; Kitiwong & Sarapaivanich, 2020; Liao, Minutti-Meza, Zhang, & Zou, 2022; Rousseau & Zehms, 2022; Su & Li, 2020).

On the other hand, other studies show that the number and uniqueness of KAMs are positively associated with audit fees (Al-mulla & Bradbury, 2022). The number of KAMs is positively associated with accruals and discretionary revenues and negatively associated with

earnings management proxied by operations through discretionary expenses, providing mixed evidence regarding audit quality (dos Santos, Guerra, Marques, & Junior, 2020). KAM length is also shown to be positively associated with audit quality in Thailand (Suttipun, 2020). A greater number of KAMs reported is associated with a lower likelihood of getting an unqualified audit opinion in the next financial year (Grosu, Robu, & Istrate, 2020) and is associated with a higher level of financial distress in the client firm (Camacho-Miñano, Muñoz-Izquierdo, Pincus, & Wellmeyer, 2022).

As the number and accuracy of KAMs increase, institutional investors withdraw more investments (X. Li, 2020) lending support that the number of KAMs provides useful information to investors (Sawangjan, 2020). Firms with more KAMs are characterized by lower returns, a larger reduction and greater dispersion in analysts' earnings forecasts, and more volatile stock prices (Dal Bem Venturini, Bianchi, Noguez Machado, & Paulo, 2022; Klevak, Livnat, Pei, & Suslava, 2022). The expanded audit report is associated with improved lending conditions as lenders see borrowers with fewer KAMs as less risky (H. Liu, Ning, Zhang, & Zhang, 2022; Porumb, Zengin-Karaibrahimoglu, Lobo, Hooghiemstra, & Waard, 2021).

Researchers also examine the effects of the new regulation of the expanded audit report on users of the audit reports, such as investors, providing mixed results, and lenders as well as managerial and auditors' behavior. In these studies, authors focus on the effects of the KAM disclosure per se, by examining changes before and after their implementation in various jurisdictions, rather than their magnitude and type. The summary of these articles is provided in Appendix B and C Panel B.

Prior literature suggests that audit reports are not easily understandable by many users (Barnett & Leoffler, 1979; Pound, 1981). KAMs aim to increase the communication between auditors and users of the audit reports and thus provide room for auditors to have a "voice" in explaining the audit process (Smith, 2022). However, critics of this new regulation fear that

KAMs would be boilerplate, therefore, not increasing the audit report readability and its information content (Citi Research, 2014; Gray et al., 2011; IAASB, 2011; Mock et al., 2013). Whether KAM improves audit report readability provides mixed results: decreased readability based on an experiment (Carver & Trinkle, 2017) versus increased readability based on archival data (Meechumnan, Sarapaivanich, Tulardilok, & Sittisombut, 2019; Nuntathanakan, Sarapaivanich, Kosaiyakanont, & Suwanmongkol, 2020; Smith, 2022). The tone of the audit report is more negative following the implementation of KAMs (Meechumnan et al., 2019; Nuntathanakan et al., 2020)

While several researchers find no impact of the implementation of KAMs on audit quality, audit fees, financial reporting quality, and investors' reactions (Al-mulla & Bradbury, 2022; Bédard et al., 2019; Burke et al., 2022; Domingos, 2018; Gutierrez et al., 2018; Lennox et al., 2022; Hao Li, 2017; Liao et al., 2022), others find a positive association (Altawalbeh & Alhajaya, 2019; Alves Júnior & Galdi, 2019; Bens, Chang, & Huang, 2019; Elsayed, Elshandidy, & Ahmed, 2023; Goh, Lee, Li, & Wang, 2022; Gold, Heilmann, Pott, & Rematzki, 2020; Hong Li, Hay, & Lau, 2019; Reid, Carcello, Li, Neal, & Francis, 2019; Zeng et al., 2021; Zhai, Lu, Shan, Liu, & Zhao, 2021). In an experimental study, Gold et al. (2020) show that managers reduce their tendency to make aggressive financial reporting decisions in the presence of KAMs, suggesting higher financial reporting quality. The implementation of KAMs improves financial reporting quality in the UK based on a decrease in absolute abnormal accruals and the propensity to just meet or beat analyst forecasts, and a significant increase in earnings response coefficients (Reid et al., 2019), as well as in China and Hong Kong (Zeng et al., 2021). Auditors also perform the audit more conservatively since the introduction of KAMs (In, Kim, & Park, 2020). There is a reduction in bid-ask spreads and the dispersion of earnings forecasts by security analysts following the regulation on the expanded audit report in the UK (Bens et al., 2019). Abnormal trading volume and earnings response coefficients are higher and

stock price synchronicity is lower after the implementation of KAMs in China (Goh et al., 2022). Mixed results also appear regarding audit fees, with no impact documented (Gutierrez et al., 2018; Reid et al., 2019), and a positive association found (Hong Li et al., 2019). Audit delay seems not to be impacted by this new regulatory change (Al-mulla & Bradbury, 2022; Bédard et al., 2019; Reid et al., 2019).

The introduction of KAMs increases companies' cost of capital, but companies in better information environments are less affected (Zhou, 2019). On the other hand, Fangjie (2020) finds a reduction in firms' cost of debt, cost of equity, and weighted average cost of capital since the implementation of the extended audit report. The adoption of the expanded audit report is associated with improved lending terms in the UK, characterized by reduced loan spreads and longer loan maturities (Porumb et al., 2021). However, based on an experiment, expanding the audit report does not change the bank director's perceptions of the financial statements, the audit, and the audit report, but disclosing the assurance level does (Boolaky & Quick, 2016).

Appendix B and C Panel C summarize the papers examining the determinants and consequences of textual features of KAMs such as readability, tone, similarity, and specificity. Determinants of audit reports' readability have been examined in prior literature. More precise accounting standards, defined as more rules-based compared to principles-based, decreases the readability of auditors' reports (Pinto et al., 2020). Higher auditors' litigation risks are characterized by lower financial reporting quality and thus lower audit report readability (Sulcaj, 2020). The percentage of women in the audit committee as well as financial and industry experts in audit committees are associated with greater KAM readability in audit reports (Velte, 2018, 2019). However, audit reports are found to be less readable and less optimistic when the audit partner is a female compared to a male (Abdelfattah et al., 2020). Audit partners modify their new clients' KAM according to their own reporting style (Rousseau

& Zehms, 2022). Audit partner gender, education, and experience do not affect the auditor's style to report KAMs (Rousseau & Zehms, 2022). The financial position of the firm, especially a stable equity basis, is associated with more similar KAMs of the same topic over time for the same client (Carlé, Pappert, & Quick, 2023). KAMs become more similar over time (Carlé et al., 2023).

Researchers also examined the consequences of textual features of KAM disclosures. Longer, more complex, litigious, and weak tone of KAM disclosures are associated with an increase in audit fees, while audit fees decrease with the similarity of KAMs to industry peers (Chen, Nelson, et al., 2020). Similarly, the number of KAMs and their textual features in the full KAM disclosure (specificity, similarity, readability, and length) is associated with audit effort (Zeng et al., 2021). These KAM characteristics signal auditors' concerns about their client's earnings quality, and the propensity of auditors to issue modified opinions in China and Hong Kong (Zeng et al., 2021). Using machine learning tools, the sentiment users perceive in KAMs, suggesting trustworthiness in the financial statements, is positively associated with the current and next-years firms' performance (W.-P. Liu, Yen, & Wu, 2022).

In the UK, the unexpected number of KAMs, the negative tone and uncertainty words in KAMs, new KAMs, KAM readability, length, and number are not incrementally informative to the market (Lennox et al., 2022; Seebeck & Kaya, 2022), but specificity related to specific words mentioned in KAMs (such as locations, names, currency, percentages, date, etc.) are informative (Seebeck & Kaya, 2022). In the US, distinct and more diverse CAMs are also found to be informative to sophisticated market participants (Anding et al., 2022). The tone of the audit report is not associated with short-window abnormal returns (Lennox et al., 2022). While KAM disclosure improves loan contracting terms, this effect is reduced when the tone of the KAM disclosure is more uncertain (Porumb, Karaibrahimoglu, Lobo, Hooghiemstra, & Waard, 2018). Examining the KAM similarity of KAM pairs, Burke et al. (2022) show that CAM

disclosures are not boilerplate and that management changes financial statements footnotes referenced by a CAM by expanding the related footnote disclosure and its clarity.

Few studies analyzed cultural differences of KAM characteristics in different countries based on Hofstede indexes. These studies are detailed in Appendix B and C Panel D. Studies examining the effect of audit firm culture on KAM disclosures find a significant difference in KAM reporting depending on the national culture of the auditor (Calixto de Sousa, 2018; Fidalgo, 2019; Kitiwong & Srijunpetch, 2019). Auditors working in countries characterized by more uncertainty avoidance and individualism values are more likely to report a greater number of entity-level risks (KAMs related to client risk) versus account-level risks related-KAMs (KAMs related to specific items in the financial statements) (Calixto de Sousa, 2018). Auditors in a country with strong uncertainty avoidance are more likely to disclose industry-specific KAMs, but the country's cultural characteristics in terms of uncertainty avoidance and masculinity are not related to the number and types of KAMs disclosed (Kitiwong & Srijunpetch, 2019). Auditors in countries characterized by a greater power distance and individualism report on average fewer KAMs (Fidalgo, 2019). These results demonstrate that the cultural characteristics of the country where the audit firm is located influence auditors' behavior and professional judgment.

Finally, Appendix B and C Panel E summarize the other quantitative articles examining the consequences of a specific type of KAM. Material risks cannot be fully communicated through a binary audit report, lending support for KAM disclosures to better communicate risks identified during the audit process and auditors' corresponding responses (Christensen et al., 2019). Firms with greater tax avoidance and more volatile effective tax rates are more likely to receive tax-related KAMs. Firms that stop receiving tax-related KAMs increase their purchases of auditor-provided tax services and increase their tax avoidance (Lynch, Mandell, & Rousseau, 2021). Disclosures of tax-related KAMs reduce the likelihood that the client firm uses tax

expenses to meet analysts' earnings forecasts, suggesting a decrease in the use of tax expenses as an earnings management tool (Drake, Goldman, Lusch, & Schmidt, 2021).

Asset impairment KAM disclosure leads to an increased quality of audited asset impairments (Wu, Fan, & Yang, 2019). Goodwill impairment KAM disclosure is associated with managers increasing goodwill impairment disclosure in financial statement footnotes, while managers do not react to the elimination of the mention in KAMs (Andreicovici, Jeny, & Lui, 2021). The primary factor associated with auditors reporting KAMs related to accounting estimates and asset impairment is measurement uncertainty (Lau, 2021). Focusing on business combination CAMs in the US, Abbott and Buslepp (2022) find that investors react more negatively to merger and acquisition announcements when a business combination CAM is disclosed before the announcement, suggesting that this type of CAM is informative.

All in all, research on KAM disclosures is an emerging and growing theme in the academic literature driving research interest globally. Prior literature suggests that the expanded audit report does not reduce the expectation gap. The current literature generally focuses on the first year(s) after KAMs have been mandated. My research complements these studies by providing the longest time-series possible with seven years of data. Some findings provide mixed results regarding the impact of the implementation of KAMs on financial reporting quality, audit fees, audit report readability, and the informativeness of KAMs. These mixed results can be explained by different research designs and proxies used, as well as potential macro-economic differences among the various jurisdictions. In my Thesis, I examine the content of KAM disclosures to provide more granular analyses compared to examining the implementation of KAMs per se or features of KAMs such as their number and length.

3. Dissimilarity Measures

The three Chapters of this Thesis share a common theme investigating client-specific information related to risks contained in KAMs, as well as the usefulness of auditors' disclosures to financial statement users. Critics fear that KAMs would be boilerplate (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013) and recent research finds that auditors engage in herding behavior when disclosing KAMs to avoid standing out from their peers (Dannemiller et al., 2022; Griffith et al., 2022). KAMs are likely to be similar for the same risk, and for firms in the same industry during the same time period. Thus, the difference between two KAMs reflects client-specific information.

Providing client-specific information in KAMs is important for financial statements' users to understand the specificities of the audit risk of the client firm. Moreover, to keep audit risk at an acceptable level, auditors adapt their effort and procedures to address the risks identified (Hogan & Wilkins, 2008). Audit effort is a direct indicator of audit quality, thus providing client-specific information in KAMs could indicate higher audit quality.

In my Thesis, I capture client-specific information in KAMs with dissimilarity measures. I define dissimilarity as differences in words written by auditors for the same type of risk. I argue that KAM dissimilarity captures client-specific information for each audit engagement related to the risks identified during the audit process and audit procedures performed to address these risks. In this section, I explain how I measure the dissimilarity variables used in my research.

I use the Cosine Similarity Score (CSS) to get a score measuring the similarity between a pair of documents (S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). I follow the same methodology for the entire KAM disclosures (*KAM_DISSIMILARITY*) and its two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response

and observation (*RESP_DISSIMILARITY*). Each text is first transformed into a vector following the Vector Space Model (VSM) in an *n*-dimensional Euclidian space, where *n* represents the number of unique words appearing in the pair of documents analyzed. I then clean the text transformed into an array of words in several steps.

First, I ensure similar words are written in the same way. To this end, I put all the text in lowercase and remove hyphens. I also verify words written differently with the American versus English writing styles. I convert n-grams into their corresponding abbreviation, as they capture the same words. Second, I keep only the alphanumerical characters by removing numbers, special characters, and punctuation. Third, I remove stop words based on the list of stop words available on the Notre Dame Software Repository for Accounting and Finance.[2] To ensure the applicability of the list to my setting, I also add stop words, mainly including locations, currencies, and firm names found in my sample. I further remove words unique to a firm and those that appear only once in the full database. These words are likely to be firm names, erroneous words, or stop words. The final step in cleaning the text is to lemmatize and stem the text to its root form. [3, 4]

Using the term-frequency-inverse document frequency (TF-IDF), the value of each vector element is the frequency of each word in the document. TF-IDF is a weighting factor for words appearing more frequently. TF-IDF reflects how important a word is to a document in a collection of corpora. TF-IDF increases proportionally to the number of times a word appears in the document and it is offset by the number of documents in the corpus that contain the word.

[2] The list of stop words is available on the Notre Dame Software Repository for Accounting and Finance on the following website: https://sraf.nd.edu/textual-analysis/resources/#StopWords

[3] "Lemmatization, unlike Stemming, reduces the inflected words properly ensuring that the root word belongs to the language. In Lemmatization root word is called Lemma. A lemma is the canonical form, dictionary form, or citation form of a set of words." (e.g. 'walk', 'walked', 'walks' or 'walking' are lemmatized into 'walk'; source: https://www.datacamp.com/community/tutorials/stemming-lemmatization-python)

[4] "Stemming is the process of reducing inflection in words to their root forms such as mapping a group of words to the same stem even if the stem itself is not a valid word in the Language." (e.g., the words 'universal', 'university', and 'universe' are stemmed to 'univers'; source: https://www.datacamp.com/community/tutorials/stemming-lemmatization-python)

The CSS measures the angle between the two vectors, where smaller angles indicate more similar documents. The CSS formula between two vectors A and B containing word frequencies is as follows:

$$Similarity\_Score = \cos(A, B) = \frac{AB}{||A||||B||} = \frac{\sum_{i=1}^{n} A_i B_i}{\sqrt{\sum_{i=1}^{n} A^2{}_i}\sqrt{\sum_{i=1}^{n} B^2{}_i}}$$

Each vector contains the same number of words based on the occurrence of the words in the pair of documents. If a word does not appear in a document, its value is 0. The cosine similarity focuses on the words the documents have in common and the occurrence frequency of each word, ignoring zero-matching. In the other words, their corresponding value is the word count. The denominator represents the Euclidian norms ||A|| and ||B|| of vectors A and B respectively.[5]

I use two different dimensions to compute my measures of KAM dissimilarity: temporal and cross-sectional dimensions. To capture the temporal dimension in KAMs, that is to compute dissimilarity for the same firm from one year to another, I pair KAMs per topic and firm for years *t* and *t-1*. To capture the cross-sectional dimension in KAMs, that is to compute dissimilarity among industry peers for the same type of risk per fiscal year, I pair KAMs per topic, industry SIC-1-digit, and year. I average all the scores obtained per KAM to get scores at the KAM level. For each measure, I then average the scores obtained per KAM at the firm-year level.

To alleviate concerns for documents with different lengths, I regress the scores obtained on the first five polynomials of document length using a Taylor expansion at 0. Document length equals the number of words in the cleaned document. I obtain the similarity scores

[5] For an example on how to compute the CSS between two texts, see https://www.sciencedirect.com/topics/computer-science/cosine-similarity example 2.23.

adjusted for document length by removing the fitted value obtained from the regression to the initial similarity scores (dependent variable of the regression). I focus on dissimilarity, which is one minus the similarity scores. Greater scores represent more dissimilar KAMs.

4. Overview of the Thesis

Each Chapter represents an academic research paper. The first two Chapters have been co-authored with Andrei Filip and Anne Jeny, both at *IESEG School of Management*. The titles of the three Chapters are as follows:

- Chapter 1: "Key Audit Matters Dissimilarity: Determinants and Consequences"
- Chapter 2: "Client-Specific Information in Key Audit Matters and Audit Risks"
- Chapter 3: "Is Specific Information in Key Audit Matters Informative? The Role of Risk Disclosures"

The data comes from different sources combining publicly available data from databases and hand-collected data from firms' annual reports based in the United Kingdom. I use empirical archival methodologies as well as textual analysis tools. Figure A provides the overall research question (RQ) of the Thesis and the interplay between the three Chapters of the Thesis.

Research Question of the Thesis: What are the determinants and consequences of client-specific information in KAM disclosures and what do these disclosures reflect?

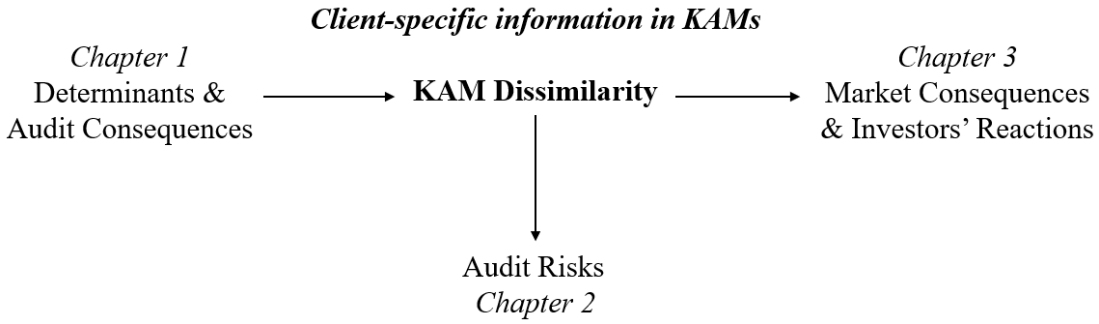


Figure A: Conceptual Framework of the Thesis

KAMs have first been implemented in the United Kingdom in 2013. To get the largest sample period possible, I use hand-collected data from premium-listed non-financial firms on the London Stock Exchange (LSE). Although auditors are encouraged to write KAMs in their own words (FRC, 2013b), critics of this new disclosure requirement fear that KAMs would be boilerplate and standardized (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013). KAMs are purely qualitative disclosures rendering their analysis with textual analysis ideal. However, recent research examining the implementation of Critical Audit Matters (CAMs) in the United States by interviewing audit partners finds that auditors engage in herding behavior when disclosing KAMs (Dannemiller et al., 2022; Griffith et al., 2022). Moreover, KAMs of the same topic have mostly similar content over time (Carlé et al., 2023).

Although several researchers examine the consequences of the KAM regulation worldwide, I believe that examining the content of KAM disclosures provides more granular insights into the audit process. I develop measures of dissimilarity to capture client-specific information in KAMs. These measures reflect differences in words written by auditors for the same type of KAM. My dissertation contributes to the KAM literature by providing a granular analysis of the content of KAM disclosures and by complementing studies examining textual features of KAMs (e.g., Burke et al., 2022; Chen, Nelson, et al., 2020; Gutierrez et al., 2018; Lennox et al., 2022).

In the first Chapter, I examine the determinants of KAM dissimilarity and its consequences regarding audit quality and audit delay. The second Chapter focuses on the association between KAM dissimilarity and audit risks. The third Chapter investigates the informativeness of dissimilar auditors' risk disclosures. In the next section, I provide an overview of each Chapter.

<u>Chapter 1</u>: "Key Audit Matters Dissimilarity: Determinants and Consequences"

Although textual analysis is gaining increased interest in accounting research, it is still sparse in auditing research. In this Chapter, we detail client and audit firm characteristics associated with client-specific (dissimilar) information in KAMs. Based on prior literature and the definition of KAMs, we expect both client and audit firm characteristics to be associated with KAM dissimilarity. Figure B states the research question of this Chapter and the Libby Boxes, highlighting the conceptual framework of the paper and its operationalization.

RQ: What are the determinants of client-specific KAMs and their consequences regarding audit quality and audit delay?

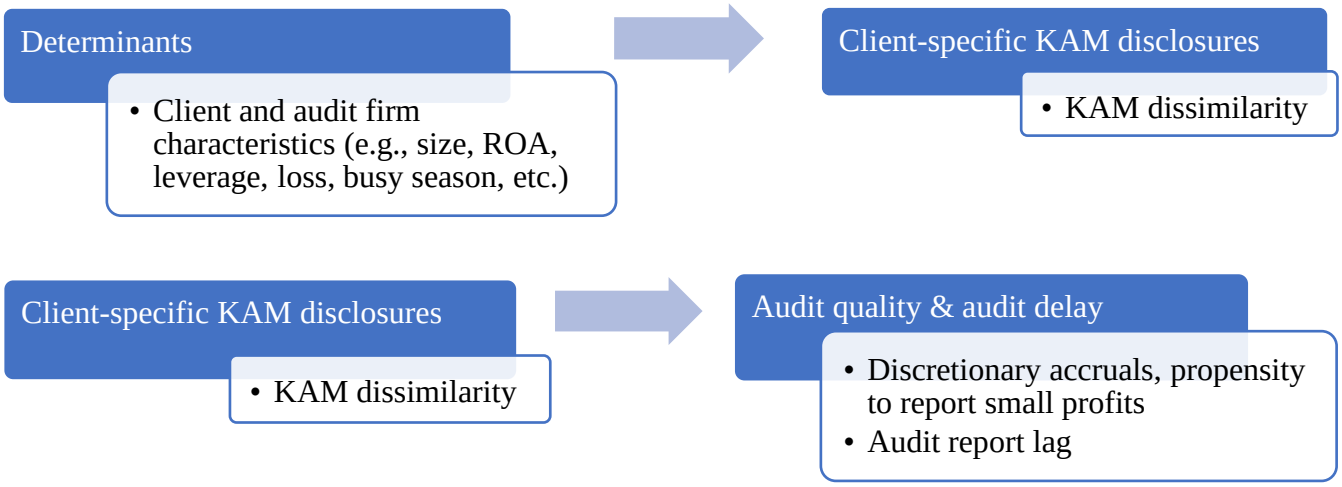


Figure B: Libby Boxes of Chapter 1

It is likely that auditors engaging in more discussions with the audit committee (Jeffers, 2018; Kang, 2019; Thissen, 2016) and performing additional procedures to the risks identified as KAMs (dos Santos et al., 2020) to be reflected in specific wording in KAMs and to be associated with enhanced audit quality and possible longer audit delays. However, writing more specific and dissimilar KAMs may be a substitute for providing higher audit quality, especially if auditors write KAMs based on the summary they reported to the audit committee (Reid et al., 2019).

Our findings suggest that the two KAM components are different, as the client-specific information they contain is driven by different factors. Our results indicate that the main

characteristics explaining client-specific (dissimilar) KAMs are client firms' and audit partners' unobservable characteristics. We also show that controlling for similar risks (by grouping KAMs per topic) and the length of the KAM when computing the dissimilarity scores is important as it provides different results regarding KAM determinants.

We find some evidence that client-specific KAMs are associated with audit quality. Dissimilar KAMs are associated with longer audit delays of about two days. We contribute to the literature by explaining differences among metrics capturing client-specific information in KAMs used in the literature (e.g., Chen, Nelson, et al., 2020; Zeng et al., 2021). We also complement the KAM literature that examines the content of KAMs by analyzing the determinants of KAM dissimilarity based on client and audit firm characteristics as well as some of its consequences.

Chapter 2: "Client-Specific Information in Key Audit Matters and Audit Risks"

In this Chapter, we link the KAM components, namely the risk description and the auditors' response and observation to those of the audit risk model, namely inherent, control, and detection risks. This association enables us to better understand the audit risk model, a foundation of the auditing literature. Figure C states the research question of this Chapter and the Libby Boxes, highlighting the conceptual framework of the paper and its operationalization.

RQ: Are client-specific KAM disclosures and its two components associated with audit risks?

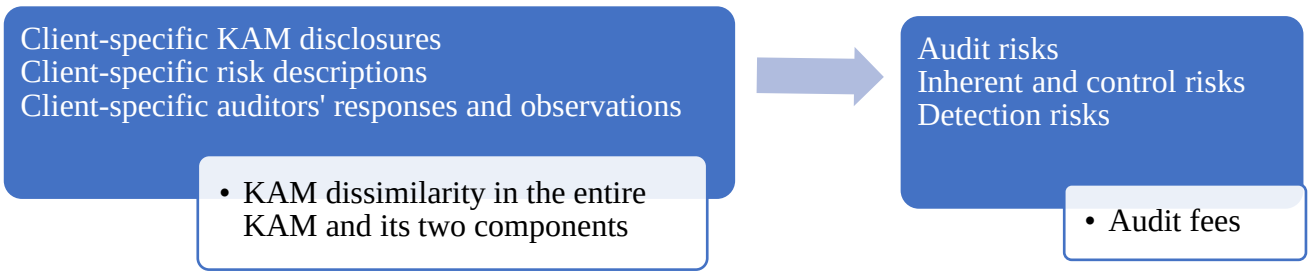


Figure C: Libby Boxes of Chapter 2

When describing risks requiring the most professional judgment during the audit process, auditors are likely to provide client-specific information related to inherent and control risks, increasing the overall level of audit risks. When explaining the audit procedures performed to address the risk identified, auditors are likely to provide client-specific information related to detection risks, decreasing the overall level of audit risks. Therefore, we expect an opposite association between auditors' disclosure of client-specific information in each KAM component and audit risks: (a) a positive association for the risk description (reflecting inherent and control risks), and (b) a negative association for the auditors' response and observation (reflecting detection risks).

We find results consistent with our expectations. Client-specific information in the risk description of the KAM is associated with higher audit risks, reflecting inherent and control risks. We also find that client-specific information in the auditors' response and observation is associated with lower audit risks, reflecting detection risks. Overall, auditors' disclosure of client-specific information in KAMs is associated with lower audit risks.

We also provide evidence that reducing audit risks do not impair audit quality and is not associated with lower audit effort. Additional tests show that our results are stronger when KAM topics are new or infrequent, when auditors face lower industry litigation risks, when managers' compensation is linked to firm performance and firms are more profitable, and when auditors are industry experts and have a short tenure.

By linking the KAM and audit risks components, we contribute to the audit risk literature and highlight the importance to examine the two KAM components separately, as they provide complementary insights about audit risks (e.g., Felix et al., 2001; Hackenbrack & Knechel, 1997; Hogan & Wilkins, 2008; Mock & Wright, 1999).

<u>Chapter 3</u>: "Is Specific Information in Key Audit Matters Informative? The Role of Risk Disclosures"

In this Chapter, I focus on the informativeness of auditors' risk disclosures. KAMs provide unique opportunities to examine auditors' risk disclosures and to complement the literature focusing on managerial risk disclosures (Beatty et al., 2019; Elzahar & Hussainey, 2012; Tan et al., 2017). While risk disclosures represent a fundamental source of information for market participants, they become less informative as managers disclose fewer risks of material misstatements (Beatty et al., 2019).

Prior literature finds mixed results regarding the informativeness of KAMs. Experimental studies show that KAMs have informative value to investors (Brasel et al., 2016; Carver & Trinkle, 2017; Christensen, Glover, & Wolfe, 2014; Rapley, Robertson, & Smith, 2021). However, archival research examining the informativeness of the implementation of KAMs in different jurisdictions provides mixed results with most papers finding no informative value in KAMs (e.g., Bens et al., 2019; Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022). These mixed results suggest there is a need to understand the conditions under which KAMs are informative. Figure D states the research question of this Chapter and the Libby Boxes, highlighting the conceptual framework of the paper and its operationalization.

RQ: Is specific information in KAMs informative and under which conditions?

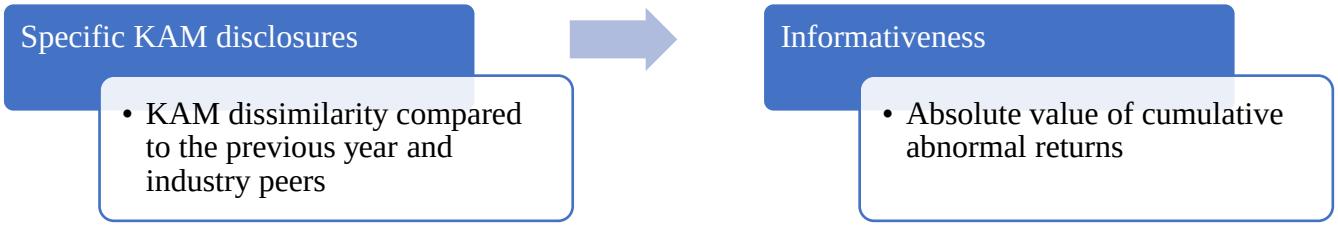


Figure D: Libby Boxes of Chapter 3

I find that auditors' risk disclosures are informative if they provide dissimilar information in two dimensions simultaneously: compared to (a) the previous year and (b) industry peers. My results are stronger when investors face greater information asymmetries,

and when all the audit committee members are independent. Consistent with prior literature, I find that auditors' specific risk disclosures reflect bad news rather than good news.

This paper contributes to the KAM literature that examines the informativeness of the implementation of KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022) and KAM features (e.g., Abbott & Buslepp, 2022; Chang et al., 2022; Seebeck & Kaya, 2022) by providing granular analyses into the content of KAMs. This paper is the first to examine two dimensions of KAM dissimilarity simultaneously encompassing both temporal and cross-sectional variations.

5. Contributions

My Thesis contributes to the literature in several ways. First, I complement the auditing literature on Key and Critical Audit Matters (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022; Reid et al., 2019). Based on textual analysis, my Thesis focuses on differences in words written by auditors, captured by the dissimilarity metric, providing a granular analysis of the content of KAMs. Moreover, I examine separately the entire KAM and its two components, as they serve different purposes. Focusing on premium-listed firms in the United Kingdom enables to get the longest time series analysis. My research goes beyond prior literature examining the implementation of KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022) and textual features of KAMs such as the length, number, topic, and readability of KAM disclosures (e.g., Al-mulla & Bradbury, 2022; Chen, Nelson, et al., 2020; Rousseau & Zehms, 2022) by providing novel analyses of the content of KAMs.

Second, my Thesis contributes to the textual analysis literature in accounting by focusing on auditors' disclosures, which is an under-researched area in textual analysis (Bochkay, Brown, Leone, & Tucker, 2022). KAMs provide the first opportunity to examine qualitative disclosures from auditors that intend to be specific and informative. I also

complement the sparse literature examining KAM similarity (Burke et al., 2022; Carlé et al., 2023; Chen, Nelson, et al., 2020; Zhang & Shailer, 2022), by introducing a dissimilarity metric and focusing on different research questions. I first examine factors associated with auditors writing dissimilar KAMs (Chapter 1). Second, I examine whether KAMs' dissimilarity is associated with audit risks (Chapter 2), and third I investigate the informativeness of auditors' risk disclosures through its dissimilarity (Chapter 3).

Third, my findings complement prior literature on risk disclosures (Beatty et al., 2019; Elzahar & Hussainey, 2012; Hope, Hu, & Lu, 2016; Tan et al., 2017) by focusing on auditors' rather than managers' disclosures. My Thesis also complements prior literature on audit risks (e.g., Felix et al., 2001; Hackenbrack & Knechel, 1997; Hogan & Wilkins, 2008; Mock & Wright, 1999), a foundation of the auditing literature. KAMs provide a unique setting to examine risk-related information based on auditors' perspectives. In my Thesis, I show that dissimilarity in KAMs reflects information related to audit engagement-specific risks.

My dissertation also has practical implications and is of interest to regulators, auditors, and market participants. Regulators strive to improve communication between auditors and users of audit reports and my results can help them refine the KAM standard to reach the stated objectives by better understanding the implementation of KAM disclosures. My dissertation sheds light on the necessity for auditors to write KAMs in their own words, as suggested by the standards (FRC, 2013b). My findings are also of interest to investors and users of the audit report, who can find decision-useful information about firms' risks in KAM disclosures. Finally, my dissertation is of interest to researchers, as it highlights the importance to examine the content of KAM disclosures and its two components separately.

CHAPTER 1

KEY AUDIT MATTERS DISSIMILARITY: DETERMINANTS AND CONSEQUENCES

Key Audit Matters Dissimilarity: Determinants and Consequences

Abstract

Key Audit Matters (KAMs) have been implemented to increase the communication between auditors and users of the audit report. However, critics feared KAMs would be boilerplate and recent research finds that auditors engage in herding behavior when writing Critical Audit Matters in the United States (Dannemiller et al., 2022; Griffith et al., 2022). KAMs are additional disclosures in the audit report, and they offer the first opportunity to examine qualitative disclosures that can help us open the audit process "black box". We take advantage of these new disclosures to construct measures of KAM dissimilarity that capture differences in words written by auditors for the same type of KAM among industry peers in the same fiscal year. These measures enable us to disentangle between specific information in KAMs and boilerplate auditors' disclosures. We provide a detailed analysis of the determinants of KAM dissimilarity, as well as its consequences regarding audit quality, and audit delay. We find that the wording of KAMs is specific to the audit engagement and reflects client firms' unobservable characteristics. Audit partners also explain a large proportion of KAM dissimilarity. We find some evidence that KAM dissimilarity is associated with audit quality, and more dissimilar KAMs are associated with longer audit delays. Our results have practical implications for standard setters as they strive to improve communication between auditors and users of audit reports.

Keywords: Key Audit Matters, textual analysis, KAM dissimilarity, auditor disclosure, audit quality, audit delay

1. Introduction

The audit profession is often criticized after accounting scandals and financial crises (e.g. Hawkes, 2011). These scandals foster debate regarding the need to improve the communication quality of audit reports. New regulations have been adopted to restore the market confidence and credibility of the audit services. To this end, Key Audit Matters (KAMs) have first been implemented in the United Kingdom (UK) and Ireland in 2013 (FRC, 2013a).[6] KAMs represent the biggest change in the audit report for the past 70 years and aim to improve communication between auditors and users of the audit report (FRC, 2013a). KAMs provide additional qualitative disclosures in the audit report, where auditors report one KAM per greatest risk of material misstatement encountered during the audit process. Auditors identify KAMs based on professional judgment. They first describe the risk encountered (in the risk description of the KAM) and then detail the procedures performed to address the risk (in the auditors' response and observation).

KAM disclosures provide opportunities to get insights into the audit process from auditors' perspectives. Prior literature started examining determinants of the number and type of KAMs disclosed (e.g., Lennox et al., 2022; Rousseau & Zehms, 2022; Sierra-García et al., 2019) and consequences of reporting more KAMs and different types of KAMs on the market by examining its informativeness (e.g., Klevak et al., 2022; X. Li, 2020) and on audit fees and audit quality (e.g., Liao et al., 2022; Rousseau & Zehms, 2022). A couple of papers provide a more granular analysis by examining the association between KAM similarity and audit fees (Chen, Nelson, et al., 2020) or audit quality (Zeng et al., 2021).

Although auditors are encouraged to write KAMs in their own words (FRC, 2020), critics feared that they would be boilerplate (Citi Research, 2014; Gray et al., 2011; Mock et

[6] Risks of Material Misstatements (RMMs), the precursor of KAMs have first been implemented in 2013 before the progressive global adoption of KAMs starting from 2016.

al., 2013). KAMs are purely qualitative disclosures rendering their analysis with textual analysis ideal. However, recent research examining the implementation of Critical Audit Matters (CAMs) in the United States (US) by interviewing audit partners finds that auditors engage in herding behavior when disclosing CAMs (Dannemiller et al., 2022; Griffith et al., 2022).[7] We take advantage of these new disclosures by auditors to construct measures of KAM dissimilarity that capture differences in words written by auditors for the same type of KAM among industry peers in the same fiscal year. These dissimilarity measures enable us to disentangle between specific information in KAMs and boilerplate auditors' disclosures.

Textual analysis is already widely used in the accounting literature, but it is still sparse in the auditing literature (Bochkay et al., 2022). This paper aims to provide a greater understanding of KAM dissimilarity by examining its determinants and consequences and complements prior literature on KAMs in this sense. If KAMs are boilerplate, we would not observe any variations in the dissimilarity scores and none of our analyses would provide significant results. Examining dissimilarity in KAMs compared to industry peers for the same type of risk captures differences compared to a benchmark of companies for the same fiscal year and reflects client-specific information for the same risk.

Each KAM is composed of two components. First, the auditors describe the risk encountered and why it is reported as a KAM. Second, they explain the procedures performed to address the risk identified. KAMs are identified based on auditors' professional judgment. Auditors may justify a KAM based on significant events, transactions, and/or internal control deficiencies specific to the audit engagement. We alternatively examine the entire KAM and its two components: (a) the risk description and (b) the auditors' response and observation. Auditors provide different information in each component of the KAM, which serves different

[7] Critical Audit Matters (CAMs) are similar to Key Audit Matters (KAMs) except that CAMs refer to material misstatements. CAMs have been implemented in 2019 in the United States.

purposes. Examining each component separately may thus provide different insights regarding the determinants and consequences of KAM dissimilarity.

We examine both client and audit firm characteristics that could explain KAM dissimilarity. The standard encourages auditors to write KAMs in their own words (FRC, 2020), although critics fear KAMs would be boilerplate (Citi Research, 2014; Gray et al., 2011; IAASB, 2011; Mock et al., 2013). Considering the purpose and the definition of KAMs, we expect both client and audit firm characteristics to be associated with KAM dissimilarity. However, if KAMs are boilerplate as recent research shows (Carlé et al., 2023; Dannemiller et al., 2022; Griffith et al., 2022), we would not observe variations in the wording of KAMs.

We then study several consequences of providing more dissimilar KAMs regarding audit quality, and audit delay. The implementation of KAM generates more communication between auditors and the audit committee (Jeffers, 2018; Kang, 2019; Thissen, 2016), which enhances financial reporting quality (Cohen, Gaynor, Krishnamoorthy, & Wright, 2007). Prior literature also finds that auditors perform significantly more procedures to the risks identified in KAMs (dos Santos et al., 2020). Engaging in more discussion and performing additional procedures are likely to be reflected in clients' specific wording in KAMs and to be associated with enhanced audit quality and possible longer audit delays. However, writing more specific and dissimilar KAMs may be a substitute for providing higher audit quality. If auditors write KAMs based on the summary they reported to the audit committee, client-specific information in KAMs is unlikely to be associated with audit quality and audit delay.

We run our analyses on a sample of premium listed firms on the London Stock Exchange (LSE), as these are the first to be mandated to implement KAMs. This setting enables us to have the longest sample period possible. Moreover, KAMs are now implemented worldwide, and

our results can thus be generalizable to other settings.[8] Following prior literature, we use the cosine similarity score to capture dissimilarity in KAMs and their two components (S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). We develop a measure of dissimilarity for the entire KAM and each of its two components, resulting in three different dissimilarity variables. We pair KAMs at the topic-industry-year level. We average each score obtained per pair to get three variables at the firm-year level. We examine dissimilarity for the same type of KAM (same risk based on the KAM title) to control for the similarity in risks related to firms' underlying activities.

Examining the determinants of KAM dissimilarity based on a variance decomposition analysis, we find that client firms' unobservable characteristics are the main driver of dissimilar KAMs. We also find that audit partners explain a large proportion of KAM dissimilarity, which is consistent with prior literature (Rousseau & Zehms, 2022). Following the definition of KAMs and prior literature on KAMs (e.g., Ferreira & Morais, 2019; Lennox et al., 2022; Sierra-García et al., 2019), we examine client and audit firm characteristics likely to be associated with KAM dissimilarity. We expect factors requiring more professional judgment, such as firm size, complexity, and riskiness to be associated with KAM dissimilarity. We find that riskier firms tend to have more dissimilar KAMs. During the busy season, auditors write KAMs that are more similar. Greater auditors' independence is associated with more dissimilar KAMs.

After examining the determinants of KAM dissimilarity, we examine its association with audit quality. We use several proxies of audit quality (Aobdia, 2019): income-increasing and the absolute value of income-decreasing performance-matched discretionary accruals following Kothari, Leone, and Wasley (2005), and the propensity of managers to report small

[8] As CAMs are slightly different to KAMs, their number and topics differ rendering analyses with US CAMs less generalizable compared to KAMs.

profits. Our results provide some evidence that KAM dissimilarity is associated with higher audit quality.

We then examine the association between KAM dissimilarity and audit delay. Our results suggest that dissimilar KAMs are associated with longer audit delays. This result is driven by the auditors' response and observation component of the KAM, consistent with auditors performing additional procedures performed in comparison to industry peers facing the same risk. Our results can be explained by auditors spending more time discussing the matters identified as a KAM with audit committee members.

This paper contributes to the literature in several ways. First, we complement the auditing literature, especially the growing literature on KAMs by introducing a new measure, namely KAM dissimilarity, and examining its determinants. We thus contribute to the research examining determinants of the number or type of KAMs disclosed (e.g., Lennox et al., 2022; Rousseau & Zehms, 2022; Sierra-García et al., 2019) by providing a granular analysis of the content of KAMs with the longest time series possible. We also complement the recent paper by Carlé et al. (2023) that examines determinants of German KAMs textual similarity for the same topic year-over-year for the same client from 2017 to 2019. Our analyses differ in the similarity measure as we focus on the cross-sectional rather than temporal dimension of textual similarity by grouping KAMs per topic among industry peers per fiscal year. We also complement the paper by Chen, Nelson, et al. (2020) examining dissimilarity in KAMs among industry peers by stressing the importance to examine dissimilarity for the same type of risk to capture specific risk-related information in KAMs.

Second, we complement the KAM literature examining the consequences of the implementation of KAMs on audit quality and audit delay (e.g., Bédard et al., 2019; Gutierrez et al., 2018; Reid et al., 2019; Zhang & Shailer, 2022) and examining features of KAMs (such as length, number, topic, and readability) on audit quality (Chen, Nelson, et al., 2020; Liao et

al., 2022; Rousseau & Zehms, 2022). We add knowledge to these papers by providing a granular analysis of the content of KAMs by examining differences in their wording.

We also contribute to the textual analysis literature in accounting (e.g., Bochkay et al., 2022) by focusing on an under-research area of textual analysis in the auditing literature. KAMs provide the first opportunity to examine qualitative disclosures from auditors that intend to be specific and informative. We also complement the sparse literature examining KAM similarity (Burke et al., 2022; Chen, Nelson, et al., 2020; Zhang & Shailer, 2022), by focusing on a different research question. Our paper explores the determinants and consequences of KAM dissimilarity for the entire KAM and its two components.

This paper also has practical implications and is of interest to regulators as they strive to improve communication between auditors and users of audit reports. This paper can help regulators refine their standards by better understanding factors associated with more specific (dissimilar) KAMs. This analysis is also of interest to market participants, such as managers and investors as it provides evidence of the characteristics associated with dissimilarities in KAMs and some of their consequences.

2. Prior Literature and Hypotheses Development

2.1. Institutional Setting of Key Audit Matters

The traditional audit report has long been criticized as it provides only a binary opinion (qualified versus unqualified) and is highly standardized. Indeed, auditors use a template and the audit report in its current form didn't provide any client-specific information (e.g., Christensen et al., 2019; Church, Davis, & McCracken, 2008; Gray et al., 2011; Mock et al., 2013; Vanstraelen, Schelleman, Meuwissen, & Hofmann, 2012). Key Audit Matters (KAMs) represent the biggest change in the audit report and mandate auditors to disclose the greatest risks of material misstatements encountered during the audit (FRC, 2020).

Auditors are responsible to write KAMs and they report one KAM per matter identified. An expanded audit report in the UK thus generally has three KAMs, each composed of two sections: the risk description where auditors explain the matter identified as a KAM, and the auditors' response and observation where auditors detail the procedures performed to address the KAM. KAMs are identified based on auditors' professional judgment and can result from significant events, transactions, and/or internal control deficiencies specific to the audit engagement.

KAMs in their earlier form (risks of material misstatements) have first been mandated for premium-listed firms on the London Stock Exchange with a fiscal year-end on or after September 30th, 2013 (FRC, 2013a). Afterward, several countries quickly implemented similar standards until their global adoption. KAMs have been implemented in the European Union, Hong Kong, Singapore, New Zealand, and Australia in 2016 (AASB, 2015; HKICPA, 2016; IAASB, 2015; ISCA, 2016; NZ AASB, 2015), in China in 2017 (Chinese MoF, 2016), in Canada in 2018 (CPA, 2018), and the US in 2019 with Critical Audit Matters (CAMs) (PCAOB, 2017).

2.2. Prior Literature

Prior literature and exploratory studies on KAMs examined the determinants of KAM disclosure in various jurisdictions, regarding both the number and type of KAMs disclosed. The literature seems to conclude that KAMs disclosures vary for each client firm since both client and auditor characteristics explain the number and type of KAMs disclosed.

Client characteristics are associated with the number and type of KAM disclosed. Industry affiliation, especially banks, and more precise accounting standards are positively associated with the number of KAMs disclosed (Pinto & Morais, 2019). Firm size, profitability, debt-to-equity ratio (Alkelin & Karlsson, 2018; Andersen & Hansen, 2018), complexity (Bepari

et al., 2022; Ferreira & Morais, 2019; Sierra-García et al., 2019; Suttipun, 2020), riskiness (Lennox et al., 2022), and financial reporting issues (Burke et al., 2022) are also positively associated with the number of KAMs and predict the type of KAM disclosed. The financial position of the firm, especially a stable equity basis, is associated with more similar KAMs over the years for the same client and the same type of KAM (Carlé et al., 2023). Audit committee expertise is associated with fewer KAMs reported (Zhang & Shailer, 2022).

Audit firm, audit partner, and audit engagement characteristics are associated with the number and the type of KAM disclosed, where the type is divided into two groups: entity- (KAMs related to client risk) and account-level risks (KAMs related to specific items in the financial statement) (Bepari et al., 2022; Sierra-García et al., 2019). Different audit firms report different KAMs (Sierra-García et al., 2019; Tušek & Jezovita, 2018). Audit partner style (Rousseau & Zehms, 2022) and gender (Abdelfattah et al., 2020) as well as auditor experience and industry expertise (Shao, 2020) are also positively associated with the number, length, and writing style of KAMs. At the audit engagement level, audit fees (Danielsson & Sundberg, 2019; Oghuvwu & Orakwue, 2019) are shown to be positively associated with the number of KAMs while the auditor opinion is negatively associated with the number of KAMs (Ferreira, 2018; Ferreira & Morais, 2019).

The growing literature on KAMs examines the relation of the expanded report on audit quality and provides mixed results. While some researchers find that this regulatory change does not influence audit quality in the UK (Gutierrez et al., 2018), nor in France (Bédard et al., 2019), Hong Kong (Liao et al., 2022), New Zealand (Al-mulla & Bradbury, 2022), other researchers find an increase in audit quality in the UK (Reid, Nelson, & Carcello, 2020), New Zealand (Hong Li et al., 2019), and China (Zeng et al., 2021). Audit delay seems not to be impacted by this new regulatory change (Al-mulla & Bradbury, 2022; Bédard et al., 2019; Reid et al., 2019).

Another stream of literature focuses on the relationship between characteristics of the KAM disclosure and audit quality. The number and type of KAMs disclosed are not associated with audit quality (Kitiwong & Sarapaivanich, 2020; Liao et al., 2022). The similarity in KAMs within audit partners is not associated with audit quality or audit delay (Rousseau & Zehms, 2022). Similar KAMs for the same risk compared to industry peers are associated with managers reporting fewer below-the-line items, and a lower probability of auditors issuing unqualified opinions with explanatory notes or qualified audit opinions (Zeng et al., 2021).

2.3. Hypotheses Development

In this paper, we introduce a new metric of KAM dissimilarity that aims to capture client-specific information. We define dissimilarity as differences in words written by auditors for the same type of risk among industry peers in the same fiscal year. We identify similar risks based on the KAM title. Grouping KAMs per topic enables us to alleviate concerns about differences in underlying economic activities among firms.

KAMs describe the financial accounts with the greatest risks of material misstatement. Auditors are more conservative and require more professional judgment when auditing riskier and more complex accounts (T. Lu & Sapra, 2009). As per the definition of KAMs, we expect client characteristics, especially proxies reflecting complexity and riskiness to be associated with KAM dissimilarity.

Auditors are responsible for the audit report, and thus for writing KAMs. KAMs are determined based on auditors' professional judgment, which is not quantifiable and varies from one person to the other. Auditors issue the audit opinion when they feel comfortable about the work performed and the audit quality reached, attaining a feeling of saturation (Guénin-Paracini, Malsch, & Paillé, 2014). This feeling of saturation and comfort depends on the audit

work performed and on the auditor's personality. Thus, audit firm characteristics are likely to be related to KAM dissimilarity.

On the other hand, critics of the KAM regulation fear that KAMs would be boilerplate (Citi Research, 2014; Gray et al., 2011; IAASB, 2011; Mock et al., 2013). Recent research based on interviews with audit partners finds that auditors engage in herding behavior when writing CAMs in the US (Dannemiller et al., 2022; Griffith et al., 2022). A recent paper examining German KAMs of the same topics from one year to the other finds that auditors often use the same formulations, suggesting boilerplate KAM disclosures (Carlé et al., 2023). If KAMs are boilerplate among industry peers for the same type of KAM, they would be unlikely to be driven by client and audit firm characteristics. Moreover, some risks are inherent among industries and auditors could thus describe these risks similarly. Although each audit is engagement-specific, audit procedures are standardized. Prior literature finds that auditors do not change their audit procedures although they effectively detect high fraud risk (e.g., Hoffman & Zimbelman, 2009). Based on these conflicting arguments, we state the following hypotheses.

H1: Client firm characteristics are not associated with KAM dissimilarity.

H2: Audit firm characteristics are not associated with KAM dissimilarity.

Audit quality is the joint probability that an existing problem is discovered (representing auditors' competence) and reported (representing auditors' independence) by the auditor (DeAngelo, 1981). A refined definition describes higher audit quality as "*greater assurance that the financial statements faithfully reflect the firm's underlying economics, conditioned on its financial reporting system and innate characteristics*" (DeFond & Zhang, 2014, p. 276). Both client demand and auditor supply characterize audit quality. Client demand arises from agency costs (Jensen & Meckling, 1976) and regulation, as well as the client's capability to meet this demand reflected in factors such as the audit committee and internal audit function. Auditor supply is affected by factors related to auditor independence, characterized by

reputation, litigation, and regulatory concerns, and auditor competency is reflected by auditor expertise and engagement-level inputs (DeFond & Zhang, 2014).

Prior literature finds that auditors perform significantly more procedures to the risks identified in KAMs (dos Santos et al., 2020). Moreover, auditor commentary in KAMs increases investors' willingness to pay to own shares of a firm using higher financial reporting quality than a competing firm using lower financial reporting quality (Elliott, Fanning, & Peecher, 2019). The implementation of KAMs also generates more communication between auditors and the audit committee (Jeffers, 2018; Kang, 2019; Thissen, 2016), which enhances financial reporting quality (Cohen et al., 2007). Auditors spending more time discussing matters with the audit committee is likely to increase audit delays. Based on these arguments, KAM dissimilarity is likely to be positively associated with audit quality and audit delay.

However, when an accounting estimate is reported as a KAM, auditors express lower skeptical action in proposing adjustment amounts (Asbahr & Ruhnke, 2019; Reid et al., 2020). KAMs represent risks requiring the most professional judgment. As professional judgment increases, auditors and managers are more likely to disagree on the amount of the account. Because KAMs require more professional judgment, it may be more difficult for managers to accept adjusting the related accounts. In this case, providing more specific information on the audit process in KAMs would be a substitute for audit quality. Moreover, the information in the audit report is not new and can come from the summary the auditor prepares for the audit committee (Reid et al., 2019). In this case, KAM dissimilarity is unlikely to be associated with audit quality and audit delay. Based on these conflicting arguments, we state our hypotheses as follows.

H3: KAM dissimilarity is not associated with audit quality.

H4: KAM dissimilarity is not associated with audit delay.

3. Research Design and Sample Selection

3.1. Dissimilarity Measures

We model dissimilarity in KAMs using the cosine similarity score (CSS). Prior literature on textual analysis in accounting already used this score to examine the similarity between documents. For example, it has been used to analyze differences in Management Discussion and Analysis (MD&A) of annual reports from one year to another (S. V. Brown & Tucker, 2011), accounting policy footnotes in 10-K filings (Peterson, Schmardebeck, & Wilks, 2015) or the annual reports in a cross-cultural study (Lang & Stice-Lawrence, 2015), as well as company business description, MD&A, and financial statement footnotes among industry peers to capture compatibility between an auditor and their clients (S. V. Brown & Knechel, 2016). However, the auditing literature examining the similarity of KAMs is still sparse (Burke et al., 2022; Carlé et al., 2023; Chen, Nelson, et al., 2020; Rousseau & Zehms, 2022; Zeng et al., 2021).

Similarity is calculated between pairs of documents after converting the text into numerical values to allow a comparison based on an algorithm. We capture dissimilarity in KAMs and their components for the same type of risk. We capture dissimilarity by pairing KAMs per topic, industry SIC-1-digit, and year. We identify KAM topics based on the words in its title. When a KAM topic is unique to a group (e.g., a unique KAM topic in an industry-year or a KAM topic not disclosed in the previous year for that firm), we code them as fully dissimilar.

Calculating dissimilarity within topics alleviates concerns about differences in underlying economic activities among firms. Controlling for KAM topics provides different results compared to non-controlling for it. The correlation between the peer dimension of dissimilarity when controlling vs. not controlling for similarity in the risk (KAM topic) is about

40%, ranging from 40.82% for the entire KAM and the auditors' response and observation to 45.17% for the risk description (untabulated). Our dissimilarity measures are thus different from the similarity measure used by Chen, Nelson, et al. (2020) grouping KAMs of Chinese firms at the industry-year level. Grouping KAMs per topic captures client-specific information in KAMs, while not grouping them per topic reflects specific risks compared to industry peers.

We get a score for each pair formed. To get a measure at the KAM level, we average all the pairs formed per KAM. Finally, to get a measure at the firm-year level, we average again the scores obtained per firm. We adjust the scores for document length as in S. V. Brown and Tucker (2011). The dissimilarity variables equal one minus the similarity score. Higher scores represent greater dissimilarity. We follow the same procedure for the entire KAM (*KAM_DISSIMILARITY*), and its two components: the risk description (*RISK_DISSIMILARITY*), and the auditors' response and observation (*RESP_DISSIMILARITY*).[9] I provide a detailed explanation of the methodology to compute the dissimilarity variables in the general introduction of the Thesis (section 3, page 166).

3.2. Determinant Analysis

We test the first two hypotheses with OLS regressions. We alternatively use the entire KAM and its two components for each dimension of dissimilarity as the dependent variables. We first examine the variance decomposition to understand what the main drivers of KAM dissimilarity are. We next examine client and audit firm characteristics that could explain our dissimilarity measures. *DISSIMILARITY* represents each measure of dissimilarity, based on the entire KAM, and its two components, respectively. We use the following OLS regression:

[9] We omit firm and year subscripts throughout the paper for ease of exposition.

$$
\begin{aligned}
DISSIMILARITY_{i,t} \\
&= \beta_0 + \beta_1 LENGTH_{i,t} + \beta_2 NBKAM_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 INVREC_{i,t} \\
&+ \beta_5 ROA_{i,t} + \beta_6 FOROP_{i,t} + \beta_7 GROWTH_{i,t} + \beta_8 MTB_{i,t} \\
&+ \beta_9 LEVERAGE_{i,t} + \beta_{10} LOSS_{i,t} + \beta_{11} AIND_{i,t} + \beta_{12} ISP_{i,t} + \beta_{13} BUSY_{i,t} \\
&+ Client\ Firm, Audit\ Partner, and\ Year\ Fixed\ Effects + \varepsilon_t
\end{aligned} \tag{1}
$$

The coefficients β_3 to β_{10} represent client firm characteristics to test Hypothesis 1. The coefficients β_{11} to β_{13} embody audit firm characteristics to test Hypothesis 2. Longer and more KAMs are likely to increase KAM dissimilarity. We control for the length of the KAM (or its components), respectively (*LENGTH*), and the number of KAMs (*NBKAM*).

As per the definition of KAMs and following prior KAM literature (Ferreira & Morais, 2019; Lennox et al., 2022; Sierra-García et al., 2019), we expect characteristics associated with more auditor judgment, especially proxies reflecting client firm complexity and riskiness to be associated with KAM dissimilarity. Client firm characteristics comprise firm size (*SIZE*), inherent risks captured by inventory and receivables (*INVREC*), foreign operations (*FOROP*), sales growth (*GROWTH*), profitability (*ROA* and *LOSS*), leverage (*LEVERAGE*), and market-to-book ratio (*MTB*). Audit firm characteristics include auditor independence (*AIND*) calculated as the ratio of non-audit service fees over total fees, industry expertise (*ISP*) using the portfolio share method following Audousset-Coulier, Jeny, and Jiang (2016), and the busy season (*BUSY*), a dummy variable for fiscal year-ends in December.

Based on the variance decomposition analysis, we include client firm, audit partner, and year fixed effects in the regression of KAM determinants. We cluster standard errors at the audit firm-year level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1.

3.3. Audit Quality Analysis

To test our third hypothesis, we use several measures of audit quality, as prior literature stressed that each proxy captures a different dimension of audit quality, and is thus complementary (Aobdia, 2019). We alternatively use income-increasing and the absolute value of income-decreasing discretionary accruals (*INCR_DACC*, and *ABS_DECR_DACC*, respectively), and the propensity of managers to report small profits (*SMALL_PROFITS*). We estimate the performance-matched discretionary accruals following Kothari et al. (2005):

$$TACC_{i,t} = \beta_0 + \beta_1 1/AT_{i,t-1} + \beta_2(\Delta SALES_{i,t} - \Delta REC_{i,t})/AT_{i,t-1} + \beta_3 PPE_{i,t}/AT_{i,t-1} + \beta_4 ROA_{i,t\ (or\ i,t-1)} + \varepsilon_{i,t} \quad (2)$$

Where *TACC* equals net income before extraordinary items minus cash flow from operating activities deflated by beginning total assets, *AT* are lagged total assets, $\Delta SALES$ is the change in sales, ΔREC is the change in receivables, *PPE* is property, plant, and equipment, and *ROA* is the return on assets, calculated as net income before extraordinary items scaled by the beginning of the year total assets. We match each firm-year observation with another from the same industry and year with the closest *ROA* for the current year (net income before extraordinary items divided by total assets). Discretionary accruals are the residuals ε_t from Equation 2. We separate income-increasing from income-decreasing discretionary accruals. To ease the interpretation of the results, we use the absolute value of income-decreasing discretionary accruals. We include a constant term as suggested by Kothari et al. (2005). We estimate the discretionary accruals by industry and year with at least 10 observations. We winsorize the continuous variables at the 1st and 99th percentiles before estimating the discretionary accruals model to remove outliers.

We use Equation (3) to test Hypothesis 3 with the different measures of audit quality as the dependent variable. *AUDIT_QUALITY* alternatively represents income-increasing

discretionary accruals (*INCR_DACC*), the absolute value of income-decreasing discretionary accruals (*ABS_DECR_DACC*), and the propensity of managers to report small profits (*SMALL_PROFITS*). The dummy *SMALL_PROFITS* equals 1 if the *ROA* deflated by the beginning total assets is between 0% and 3% (Aobdia, 2019). We use OLS regressions for the discretionary accruals' models and Logit regressions when the dependent variable is a dummy (*SMALL_PROFITS*). Following prior audit literature, we control for factors that are likely to affect financial reporting quality (e.g., Aobdia, 2019; DeAngelo, 1981; Johnson, Khurana, & Reynolds, 2002b).

$$
\begin{aligned}
AUDIT\_QUALITY_{i,t} &= \beta_0 + \beta_1 DISSIMILARITY_{i,t} + \beta_2 LENGTH_{i,t} + \beta_3 NBKAM_{i,t} \\
&+ \beta_4 SIZE_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 SALES\_VOL_{i,t} + \beta_7 CFO_{i,t} \\
&+ \beta_8 CFO\_VOL_{i,t} + \beta_9 MTB_{i,t} + \beta_{10} LOSS_{i,t} + \beta_{11} FOROP_{i,t} \\
&+ \beta_{12} LEVERAGE_{i,t} + \beta_{13} ISP_{i,t} + \beta_{14} AIND_{i,t} + \beta_{15} BUSY_{i,t} \\
&+ Year, Industry\ and\ Audit\ Firm\ Fixed\ Effects + \varepsilon_{i,t}
\end{aligned} \tag{3}
$$

The independent variable *DISSIMILARITY* alternatively represents *KAM_DISSIMILARITY* to examine the entire KAM, and *RISK_DISSIMILARITY* and *RESP_DISSIMILARITY* to examine the two KAM components: the risk description and the auditors' response and observation, respectively. Similarly, *LENGTH* alternatively represents *KAM_LENGTH* when examining the entire KAM, and *LENGTH_RATIO*, the ratio of the number of words in the risk description over the length of the entire KAM, to examine the two KAM components. We expect audit quality to increase with the length of the KAM disclosure. We also control for the number of KAMs (*NBKAM*). A positive coefficient for β_1 would indicate lower audit quality while a negative coefficient would indicate higher audit quality.

GROWTH represents sales growth from one year to the other. *SALES_VOL* and *CFO_VOL* are alternatively sales and cash flow from operations volatility measured as the standard deviation of sales, respectively cash flow from operations, over the last three years both deflated by lagged total assets. *CFO* is the cash flow from operations deflated by lagged total assets. *FOROP* is a dummy equal to 1 if the firm-year observation has foreign revenues. The variables *MTB*, *LOSS*, *LEVERAGE*, *ISP*, *AIND*, and *BUSY* are as previously defined. We include industry, year, and audit firm fixed effects to control for unobservable differences across industries, audit firms, and years. We cluster standard errors at the audit firm-year level. We winsorize all the continuous variables at the 1st and 99th percentiles to remove outliers. All the variables are explained in Appendix 1 - 1.

Larger firms have more sophisticated and accurate financial-reporting systems, so we expect *SIZE* to be negatively associated with the audit quality measures. More distressed firms are more likely to manage earnings. We thus expect *LEVERAGE* and *LOSS* to be positively associated with the audit quality measures. Alternatively, we expect *CFO*, *GROWTH*, and *FOROP* to be negatively associated with the audit quality measures. We expect a positive relationship between *SALES_VOL* and *CFO_VOL* and our audit quality measures. We expect more independent auditors (*AIND*) and industry specialization (*ISP*) to be associated with greater audit quality. We expect a negative relation between *BUSY* and our audit quality measures as client firms with fiscal year-end in December are usually bigger.

3.4. Audit Delay Analysis

We examine the association between KAM dissimilarity and audit delay with the following OLS regression to test Hypothesis 4. Following prior literature, we include control variables associated with audit delays, such as accounting complexity, financial distress, and firm size (J. Krishnan & Yang, 2009; Sultana, Singh, & Van der Zahn, 2015).

$$
\begin{aligned}
AUDIT\_DELAY_{i,t} \\
&= \beta_0 + \beta_1 DISSIMILARITY_{i,t} + \beta_2 LENGTH_{i,t} + \beta_3 NBKAM_{i,t} \\
&+ \beta_4 SIZE_{i,t} + \beta_5 INVREC_{i,t} + \beta_6 ROA_{i,t} + \beta_7 GROWTH_{i,t} \\
&+ \beta_8 MTB_{i,t} + \beta_9 LEVERAGE_{i,t} + \beta_{10} LOSS_{i,t} + \beta_{11} AIND_{i,t} \\
&+ \beta_{12} ISP_{i,t} + \beta_{13} BUSY_{i,t} \\
&+ Year, Industry\ and\ Audit\ Firm\ Fixed\ Effects + \varepsilon_{i,t}
\end{aligned} \tag{4}
$$

The dependent variable, *AUDIT_DELAY*, is the number of days between the fiscal year-end and the audit report date (J. Krishnan & Yang, 2009). The independent variable *DISSIMILARITY* is as previously defined and alternatively represents dissimilarity in the entire KAM and its two components. Similarly, *LENGTH* alternatively represents *KAM_LENGTH* when examining the entire KAM, and *LENGTH_RATIO*, the ratio of the number of words in the risk description over the length of the entire KAM, to examine the two KAM components. The other control variables are as previously defined. We include year, industry, and audit firm fixed effects to control for unobservable characteristics among industry peers, audit firms, and over the years. We cluster standard errors at the audit firm-year level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1.

3.5. Sample Selection

KAMs have first been implemented in the United Kingdom (UK) for premium listed firms on the London Stock exchange with fiscal year-end on or after September 30th, 2013. We thus focus on these firms to get the longest sample period possible. We downloaded annual reports and hand-collected KAMs from their implementation to 2019.[10] While hand-collecting

[10] We got the annual reports by scrapping three websites: annualreport.com, data.fca.org.uk, and Capital IQ and manually downloading missing annual reports on firms' websites.

KAMs from audit reports, we split them into two components: (a) the risk description and (2) the auditors' response and observation.

Table 1 - 1 Panel A reports our sample selection process. There are 4,594 premium listed firms on the LSE during our sample period, and we remove financial firms (SIC codes 6000-6900) due to their different accounting and risk structure (2,602 firm-year observations). We also remove observations for which we didn't find any annual report (61 firm-year observations) nor KAMs (17 firm-year observations). This results in a total of 1,914 firm-year observations with KAMs. We drop observations with a fiscal period other than twelve months (6 firm-year observations) and with missing control variables (57 firm-year observations). The final sample consists of 1,851 firm-year observations from 334 unique firms.

[Insert Table 1 - 1 here]

Table 1 - 1 Panel B provides the number of firms and KAMs per year. Our final sample consists of 1,851 firms and 5,549 KAMs. Auditors tend to disclose more KAMs in the first year of their implementation (about 3.5 KAMs per firm on average in 2013). The average number of KAMs then steadily decreased until 2017 reaching an average of 2.785 KAMs disclosed, and slightly increased in 2018 and 2019 to reach an average of three KAMs per firm in 2019.

Table 1 - 1 Panel C reports the allocation of KAMs per topic. We allocate each KAM to a topic based on its title. We identify seventeen KAM categories, with the most common being "Revenue Recognition" (16.31% of the KAMs) and "Valuation of Intangible Assets" (15.03% of the KAMs). Our allocation of KAMs per topic is consistent with trends in KAM topics reported by AuditAnalytics for European firms from December 2016 to 2019 (Dixon, 2020).

4. Empirical Results

4.1. Descriptive Statistics

Table 1 - 2 Panel A reports descriptive statistics of our variables. The dissimilarity scores have a mean (standard deviation) of 0.999 (0.058), 1.000 (0.054), and 0.999 (0.048) for *KAM_DISSIMILARITY*, *RISK_DISSIMILARITY*, and *RESP_DISSIMILARITY*, respectively. KAMs have on average 152 words (*KAM_LENGTH=ln(words)*), with a longer description of the procedures performed (average length of 90 words) compared to the risk encountered (average length of 62 words).

Premium-listed firms on the LSE are large firms with a mean of 6.76 billion GPB of total assets (*SIZE=ln(total_assets)*), but with low profitability (average *ROA* of 0.055) and average sales growth of 6.9%. Inventory and receivables represent a quarter of total assets (average *INVREC* equals 0.269), and firms are mostly financed through debt (average *LEVERAGE* of 58%). Only 14.7% of the firm-year observations in our sample experienced a loss. On average, auditors get a quarter of total audit fees from non-audit services (average *AIND* of 0.243). Most firms are audited by a Big 4 (93.4%), and 55.6% of the firm-year observations have a fiscal year-end in December (average of the variable *BUSY*). The average income-increasing (decreasing) performance-matched discretional accruals are 0.053 (0.054). In our sample, 16.1% of firm-year observations reported small profits. The number of days between the fiscal year-end and the audit report date is on average 66 days (average of *AUDIT_DELAY*), with a minimum of 35 and a maximum of 121 days.

[Insert Table 1 - 2 here]

Table 1 - 2 Panel B displays the trend in KAM dissimilarity. We examine the difference in the average dissimilarity for the entire KAM and its two components before and after the implementation of KAMs in the European Union (E.U.) (December 2016). This analysis

enables us to compare the dissimilarity scores in the early years of its implementation, where KAMs were referred to as risks of material misstatements (RMM), and after its implementation in the E.U. referred to as KAMs. We find that dissimilarity in KAMs and its two components become more similar compared to industry peers after 2016 (t-test of mean differences between 0.013 for the auditors' response and observation, 0.016 for the risk description to 0.017 for the entire KAM, all significant at the 1% level).

The correlation matrix in Table 1 - 2 Panel C reports Pearson's and Spearman's rank correlation coefficients in the lower and upper-triangular cells, respectively. Coefficients in bold represent significance levels up to 10%. Not surprisingly, the dissimilarity scores between the entire KAM and its two components are highly correlated among themselves. The number of KAMs is not correlated with the dissimilarity scores. The coefficients between the length of the KAM and its respective dissimilarity score are low between -0.7 to -0.3% and are not significant. The dissimilarity scores have a positive but small correlation with the proxies of audit quality (*ABS_DACC* and *SMALL_PROFITS*) and audit delay. The variables *LOSS* and *ROA* are naturally highly correlated. The other control variables are not highly correlated, alleviating multicollinearity concerns.

4.2. Determinant Analysis

Table 1 - 3 reports the results of the variance decomposition of KAM dissimilarity. We include only KAM-related controls, that is the length of the KAM, and its components, respectively, and the number of KAMs. We report the adjusted R^2 obtained with different sets of fixed effects.

[Insert Table 1 - 3 here]

Controlling for the length and number of KAMs does not provide any explanatory power in the dissimilarity scores (adjusted R^2 of 0%). The main driver of KAM dissimilarity is client-

firm fixed effects, reflecting client firms' unobservable characteristics. The adjusted R^2 ranges from 34.4% to 44%. The second most important factor explaining KAM dissimilarity is audit partners' unobservable characteristics. The adjusted R^2 ranges from 30.6% to 32.5%. Adding year, industry, or audit firm fixed effects provides limited explanatory power from 4.1% to 8.6%. These results show that KAMs are client-specific and differ among audit partners.

The results of the determinants of KAM dissimilarity are displayed in Table 1 - 4. We first examine the determinants of dissimilarity in the entire KAM in Column (1), and then in its two components: the risk description in Column (2), and the auditors' response and observation in Columns (3).

[Insert Table 1 - 4 here]

We find that only the length of the risk description is positively and significantly associated with more dissimilar risk descriptions at the 5% level, whereas the number of KAMs is negatively and significantly associated with less dissimilar risk descriptions at the 10% level. For the entire KAM and the auditors' response and observation, the length and number of KAMs are not significantly associated with their respective dissimilarity scores. The most significant determinant of KAM dissimilarity is leverage. The coefficients are positive and statistically significant for each dissimilarity variable, ranging between 1% and 5% levels. *ROA* is positively associated with dissimilar KAMs and the size of the client firm is positively associated with dissimilar risk descriptions (both significant at the 10% level). On the other hand, the percentage of sales growth is negatively associated with dissimilar risk descriptions (also significant at the 10% level). Greater auditor independence (*AIND*) is associated with more dissimilar KAMs compared to industry peers, and KAMs written during the busy season are more similar to their peers (significant results for the two KAM components).

In untabulated analyses, we also add audit firm fixed effects to control for audit firms' unobservable characteristics.[11] Adding audit firm fixed effects provides qualitatively similar results to our results in Table 1 - 4. The explanatory power of the model remains unchanged (similar adjusted-R^2). We do not find systematic differences among audit firms.[12]

Regarding the analysis of the year fixed effects (untabulated), we find that the year dummies are almost all positive and statistically significant at the 1% level from years 2014 to 2017. The coefficients for the years 2013 and 2018 are not statistically significant, except for the risk description of the KAM in 2013 significant at the 10% level. These results suggest that KAMs are more dissimilar in the prior years of implementation compared to 2019.

Overall, these results show that the main factor associated with auditors writing dissimilar KAMs are client-specific unobservable characteristics and audit partners. After controlling for client firm, audit partner, and year fixed effects, we find that client firm and auditor characteristics are associated with KAM dissimilarity, validating our first two hypotheses. Riskier firms, especially the ones with more leverage, that are more visible and bigger, and have fewer growth opportunities tend to have more dissimilar KAMs. During the busy season, auditors write more similar KAMs that can be explained by the pressure and lack of time they face during this period. Greater auditor independence is associated with more dissimilar KAMs compared to peers.

4.3. Audit Quality Analysis

Table 1 - 5 provides results of the association between KAM dissimilarity and audit quality. We use three proxies of audit quality: income-increasing and the absolute value of

[11] We do not add audit firm fixed effects in our main model due to possible collinearity with audit partner fixed effects. About 15.18% pf audit partners switched audit firm in our sample.
[12] We find only a few significant coefficients for the risk description of the KAMs (all significant at the 5% level): negative for KPMG, and positive for Chantrey Vellacott and Moore Stephens. The reference audit firm is PwC.

income-decreasing discretionary accruals based on the performance-matched model (Kothari et al., 2005), as well as the level of small profits. We first examine the entire KAMs and then its two components.

[Insert Table 1 - 5 here]

We find that dissimilarity in the entire KAM and the auditors' response and observation are associated with less income-decreasing discretionary accruals (significant at the 1%, coef. = -0.069 and 10% level, coef. = -0.079, respectively). Dissimilarity in the auditors' response and observation is also associated with less small profits reported (significant at the 5% level, coef. = -6.094). More dissimilar risk descriptions are associated with more small profits (significant at the 1% level, coef. = 7.967). We do not find any significant results regarding the income-increasing discretionary accruals.

Overall, there is some evidence that dissimilarity in the entire KAMs and the auditors' response and observation is associated with higher audit quality, while dissimilarity in the risk description is associated with lower audit quality. These results can be explained by auditors providing more or adapted audit procedures reflected in dissimilar KAMs and auditors' responses and observations that are associated with greater audit quality. When auditors identify the risk before any procedures are performed, audit quality is lower (reflected in the risk description of the KAM). However, our findings should be interpreted with caution as they are not significant for all the measures of audit quality.

4.4. Audit Delay Analysis

Table 1 - 6 provides results of the association between KAM dissimilarity and audit delay. Again, we first examine the entire KAM in Column (1) and its two components in Column (2).

[Insert Table 1 - 6 here]

We find that dissimilar KAMs are significantly associated with longer audit delays (significant at the 1% level, coef. = 31.504). Regarding the economic significance, a one standard deviation increase in *KAM_DISSIMILARITY* is associated with about two days increase in audit delay.[13] Dissimilarity in the auditors' response and observation is also significantly and positively associated with audit delay (significant at the 5% level, coef. = 26.836). Dissimilarity in the risk description is, however, not associated with audit delay.

Overall, these results suggest that writing dissimilar KAMs is associated with longer audit delays of about two days. This is driven by the procedures performed to address the risk encountered. This result can be explained by auditors spending more time discussing the matters with the audit committee.

5. Robustness Tests

To ensure our results are not driven by research design choices, we perform some robustness tests. We first examine an alternative measure of dissimilarity that focuses on the occurrence rather than the frequency of the words. Second, we re-estimate our Logit regressions using alternatively Probit and OLS regressions.

5.1. Alternative Measure of Dissimilarity

We use an alternative measure of dissimilarity to further validate our main findings and ensure our results are not driven by choosing the cosine similarity. We use the Jaccard methodology, which focuses on sets of words and differentiates from the CSS by comparing occurrences rather than frequencies of the words. The Jaccard similarity is the ratio of the number of common words in both documents (size of the intersection of the sample sets) divided by the number of unique words appearing in both documents (size of the union of the

[13] The economic significance is the product of the regression coefficient and the standard deviation of the independent variable.

sample sets). We follow the same procedure to clean the text and compute the scores as previously, but the vectors and mathematical formula to compute the scores are different compared to the CSS. Again, dissimilarity is 1 minus the similarity scores, and we get three variables at the firm-year level.

For brevity, we do not tabulate the results. We find that the length of the text is significantly and positively associated with more dissimilarity in the entire KAM and the risk description. The number of KAMs is also negatively associated with the dissimilarity of each KAM component. The level of inventory and receivables (*INVREC*) is negatively associated with dissimilarity in the risk description with a marginal significance level of 10%. We also find that *GROWTH* is negatively associated with dissimilarity in the entire KAM and its two components, while *LEVERAGE* is positively associated with KAM dissimilarity (for the entire KAM and the risk description). The busy season is associated with more similar KAMs. The coefficients for the variables *SIZE* and *AIND* are no longer statistically significant. The variable related to industry expertise (*ISP*) becomes negative and statistically significant at the 10% level for the risk description.

Regarding the audit quality analysis, we find that dissimilarity in the auditors' response and observation is negatively associated with *ABS_DECR_DACC*, significant at the 5% level while it was previously significant at the 10% level. However, dissimilarity in this component of the KAM is no longer significantly associated with *SMALL_PROFITS*, while the coefficient for the dissimilarity in the risk description remains significant at the 5% level (previously 1%). All the other coefficients remain like our main analyses. Our results regarding the audit delay analyses are similar to our main findings.

Overall, changing dissimilarity measure slightly changes the significance level of some coefficients, but our results remain similar to our main analyses. More importantly, our

inferences remain unchanged. These tests show that our results are not driven by the choice of dissimilarity measure chosen.

5.2. Alternative Models to the Logit Regressions

We examine alternative regression models when the dependent variable is a dummy (*SMALL_PROFITS*). Instead of focusing on Logit regressions, we also perform the analysis again using Probit and OLS regressions. For brevity, we do not tabulate these results. Our results remain similar to our main findings with one exception. The coefficient of *RESP_DISSIMILARITY* is no longer statistically significant when using OLS regressions, but it remains negative and statistically significant at the 5% level using a Probit model.

Overall, our results are similar to our main findings using Probit instead of Logit. When using OLS, only one coefficient is no longer significant, but our inferences remain unchanged. We conclude that our results are not driven by the type of regression chosen.

6. Conclusion

We examine the determinants and consequences of KAM dissimilarity. Textual analysis in auditing is still sparse and KAMs provide the first opportunity to analyze qualitative disclosures from auditors' perspective. We argue that examining the content of KAMs provides a more granular analysis toward understanding how KAMs are written and their consequences on the audit. We define dissimilarity as differences in words written by auditors for the same type of risk among industry peers in the same fiscal year.

We use a sample of premium listed firms on the London Stock Exchange, enabling us to provide the longest time-series evidence. We develop three variables of dissimilarity in KAMs: one for the entire KAM and its two components (the risk description and the auditors' response and observation). We find that KAMs are specific to the engagement as the main driver of KAM dissimilarity is client firm unobservable characteristics. Audit partners also

explain a large proportion of KAM dissimilarity. Examining each component of the KAM is important as they have different purposes. We also find some evidence regarding the association between KAM dissimilarity and audit quality, as well as an association with a slightly longer audit delay. These results may be explained by auditors spending more time discussing the matters identified as KAMs with the audit committee.

This paper contributes to the auditing literature, especially the growing literature on KAMs by examining determinants and consequences of KAM dissimilarity. We complement papers examining determinants of textual features of KAMs such as their length, number, and type (e.g., Bepari et al., 2022; Lennox et al., 2022; Pinto & Morais, 2019; Sierra-García et al., 2019) by focusing on KAM dissimilarity. We also complement papers examining KAM similarity by focusing on a different aspect of dissimilarity (Burke et al., 2022; Carlé et al., 2023; Chen, Nelson, et al., 2020; Rousseau & Zehms, 2022; Zeng et al., 2021) and on a different research question. We focus on differences in the wording of KAMs for the same type of risk among industry peers in the same fiscal year. We stress the importance to examine the KAM components separately and to examine the content of KAMs for the same type of risk.

Our results have practical implications for standard setters who can better understand the drivers and consequences of specific wording in KAMs. These results can thus help them refine the standards and provide additional guidance for auditors when writing KAMs. Our findings are also of interest to market participants who can get specific information regarding the audit engagement through KAM disclosures.

Although KAMs are similar worldwide, our results may be driven by the setting chosen. The UK has especially strict regulations towards disclosures, and our sample essentially consists of large firms. Our results could be different, and possibly stronger, for smaller firms, usually audited by smaller audit firms with fewer resources and opportunities to engage in economies of scale. KAMs could thus be more dissimilar for smaller firms. Moreover, auditor

culture can affect the choice of KAMs reported and their wording. Future research can provide cross-sectional insights in various jurisdictions on the factors affecting KAM dissimilarity and examine additional factors at the partner and audit committee level.

Appendices of Chapter 1

Appendix 1 - 1: Definition of the Variables

Variables	Definition	Source
Dependent & Independent Variables		
$KAM\_DISSIMILARITY_{i,t}$	Dissimilarity among the entire KAMs of the same topic for industry peers in the same fiscal year for each firm *i* during year *t*. Dissimilarity is obtained with the cosine similarity score of the entire KAM controlling for its length following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are first averaged at the KAM level and then averaged again at the firm level to get one score per firm *i* during year *t*. KAM topics, which are unique to an industry during year *t* are coded as fully dissimilar. Greater scores represent more dissimilar KAMs.	Annual Reports
$RISK\_DISSIMILARITY_{i,t}$	Dissimilarity among the risk description of KAMs of the same topic for industry peers in the same fiscal year for each firm *i* during year *t*. Dissimilarity is obtained with the cosine similarity score of the risk description of the KAM controlling for its length following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are first averaged at the KAM level and then averaged again at the firm level to get one score per firm *i* during year *t*. KAM topics, which are unique to an industry during year *t* are coded as fully dissimilar. Greater scores represent more dissimilar risk descriptions.	Annual Reports
$RESP\_DISSIMILARITY\_PEERS_{i,t}$	Dissimilarity among the response and observation of KAMs of the same topic for industry peers in the same fiscal year for each firm *i* during year *t*. Dissimilarity is obtained with the cosine similarity score of the response and observation of the KAM controlling for its length following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are first averaged at the KAM level and then averaged again at the firm level to get one score per firm *i* during year *t*. KAM topics, which are unique to an industry during year *t* are coded as fully dissimilar. Greater scores represent more dissimilar responses and observations.	Annual Reports
$INCR\_DACC_{i,t}$	Income-increasing discretionary accruals for firm *i* during year *t* measured with the performance-matched Kothari et al. (2005) model	Thomson Reuters Eikon
$ABS\_DECR\_DACC_{i,t}$	Absolute value of the income-decreasing discretionary accruals for firm *i* during year *t* measured with the performance-matched Kothari et al. (2005) model	Thomson Reuters Eikon

Variables	Definition	Source
$SMALL\_PROFITS_{i,t}$	Dummy variable equal to 1 if net income before extraordinary items scaled by lagged total assets is comprised between 0 and 3% for firm *i* during year *t*; 0 otherwise	Thomson Reuters Eikon
$AUDIT\_DELAY_{i,t}$	Number of days between the fiscal year-end and the audit report date for firm *i* during year *t*	Annual Reports
Control Variables		
$KAM\_LENGTH_{i,t}$	Natural logarithm of the number of words in the entire KAM, after removing stop words, lemmatizing, and stemming the text for firm *i* during year *t*	Annual Reports
$RISK\_LENGTH_{i,t}$	Natural logarithm of the number of words in the risk description of the KAM, after removing stop words, lemmatizing, and stemming the text for firm *i* during year *t*	Annual Reports
$RESP\_LENGTH_{i,t}$	Natural logarithm of the number of words in the response and observation of the KAM, after removing stop words, lemmatizing and stemming the text for firm *i* during year *t*	Annual Reports
$LENGTH\_RATIO_{i,t}$	Ratio of the number of words in the risk description of the KAM over the number of words in the entire KAM for firm *i* during year *t*	Annual Reports
$NB\_KAM_{i,t}$	Natural logarithm of the number of KAMs for firm *i* during year *t*	Annual Reports
$SIZE_{i,t}$	Natural logarithm of total assets for firm *i* during year *t*	Thomson Reuters Eikon
$INVREC_{i,t}$	Inventory and receivables divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$ROA_{i,t}$	Net income before extraordinary items divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$FOROP_{i,t}$	Dummy variable equal to 1 if firm *i* has foreign revenues in year *t*; 0 otherwise	Thomson Reuters Eikon
$GROWTH_{i,t}$	Percentage sales growth from year *t-1* to year *t* for firm *i*	Thomson Reuters Eikon
$SALES\_VOL_{i,t}$	Standard deviation of firm *i* total revenue from year *t-1* to *t-3* scaled by lagged total assets	Thomson Reuters Eikon
$CFO_{i,t}$	Cash flow from operating activities scaled by lagged total assets for firm *i* during year *t*	Thomson Reuters Eikon
$CFO\_VOL_{i,t}$	Standard deviation of firm *i* cash flow from operating activities from year *t-1* to *t-3* scaled by lagged total assets	Thomson Reuters Eikon
$MTB_{i,t}$	Market-to-book ratio, measured as the firm market capitalization divided by total equity for firm *i* during year *t*	Thomson Reuters Eikon
$LEVERAGE_{i,t}$	Total liabilities divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$LOSS_{i,t}$	Dummy variable equal to 1 if the net income is negative and 0 otherwise for firm *i* during year *t*	Thomson Reuters Eikon

Variables	Definition	Source
$AIND_{i,t}$	Ratio of non-audit fees over total audit fees for firm *i* during year *t*	Thomson Reuters Eikon
$ISP_{i,t}$	Auditor industry specialists measured as the portfolio shares for firm *i* during year *t*, which is the ratio of all audit fees received by a given audit firm in a given industry-year to the sum of all audit fees paid to that audit firm during the year following Audousset-Coulier et al. (2016)	Thomson Reuters Eikon
$BUSY_{i,t}$	Dummy variable equal to 1 if the fiscal year-end *t* is in December for firm *i*; 0 otherwise	Thomson Reuters Eikon

Tables of Chapter 1

Table 1 - 1: Sample Selection

Table 1 - 1 reports the sample selection process in Panel A, the number of firms and KAMs per year in Panel B, and the distribution of KAM topics in Panel C. The sample consists of 1,851 firm-year observations premium listed on the London Stock Exchange (LSE) from 2013 to 2019. Missing data have been filled with information from annual reports. The remaining missing observations occur when the currency in the annual report is not GBP.

Panel A: Sample Selection Process

Sample period: firms with fiscal year-end after September 30th, 2013 to December 31st, 2019	
Total firm-year observations premium listed on the London Stock Exchange	4,594
(–) Firm-year observations in the financial industry (SIC codes 6000-6900)	-2,602
Total non-financial firm-year observations premium listed on the LSE	**1,992**
(–) Firm-year observations without annual reports found	-61
(–) Firm-year observations without KAMs	-17
Total firm-year observations with KAMs	**1,914**
(–) Firm-year observations with a fiscal period other than 12 months	-6
(–) Firm-year observations with missing variables	-57
Total firm-year observations for the peer analysis	**1,851**

Panel B: Number of Firms and KAMs per Year

Number of firms and KAMs per year:

Year	Nb Firms	*Percent*	Nb KAMs	*Percent*	Average Nb of KAMs
2013	129	*6.970*	454	*8.180*	3.519
2014	241	*13.020*	763	*13.750*	3.166
2015	261	*14.100*	791	*14.250*	3.031
2016	287	*15.510*	823	*14.830*	2.868
2017	297	*16.050*	827	*14.900*	2.785
2018	312	*16.860*	892	*16.070*	2.859
2019	324	*17.500*	999	*18.000*	3.083
Total	1,851	*100*	5,549	*100*	2.998

Panel C: Distribution of KAM Topics at the Firm-KAM Level

KAM Topic	Nb of Firm-KAMs	*Percent*
Revenue recognition	905	*16.310*
Valuation of intangible assets	834	*15.030*
Taxation	537	*9.680*
Valuation of liabilities	480	*8.650*
Acquisitions and disposals	444	*8.000*
Valuation of properties	403	*7.260*
Pension and other post-employment benefits	373	*6.720*
Valuation of inventories	370	*6.670*
Internal controls	180	*3.240*
Related party transactions	178	*3.210*
Exceptional items	169	*3.050*
Impairment of loans and receivables	126	*2.270*
Development costs	125	*2.250*
Valuation of securities and financial instruments	123	*2.220*
Political and economic risks	111	*2.000*
Going concern	108	*1.950*
Compliance with laws and regulations	83	*1.500*
Total	5,549	*100*

Table 1 - 2: Descriptive Statistics and Correlation Matrix

Table 1 – 2 reports the descriptive statistics in Panel A, the time trend in KAM dissimilarity in Panel B, and the correlation matrix in Panel C. In Panel C, lower- and upper-triangular cells respectively represent Pearson's and Spearman's rank correlation coefficients. Variables in bold are significant at the 10% level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1.

Panel A: Descriptive Statistics

	N	Mean	SD	Min	p25	Median	p75	Max
$KAM\_DISSIMILARITY_{i,t}$	1,851	0.999	0.058	0.849	0.959	0.999	1.041	1.130
$RISK\_DISSIMILARITY_{i,t}$	1,851	1.000	0.054	0.825	0.970	1.006	1.036	1.104
$RESP\_DISSIMILARITY_{i,t}$	1,851	0.999	0.048	0.866	0.968	1.001	1.033	1.110
$KAM\_LENGTH_{i,t}$	1,851	4.940	0.424	3.611	4.732	4.970	5.217	5.843
$RISK\_LENGTH_{i,t}$	1,851	3.993	0.565	1.540	3.795	4.078	4.331	4.972
$RESP\_LENGTH_{i,t}$	1,851	4.413	0.424	3.252	4.159	4.419	4.691	5.429
$LENGTH\_RATIO_{i,t}$	1,851	0.402	0.088	0.119	0.354	0.410	0.462	0.578
$NBKAM_{i,t}$	1,851	1.214	0.441	0.000	1.099	1.099	1.609	2.079
$SIZE_{i,t}$	1,851	20.866	1.719	16.832	19.703	20.761	21.986	25.601
$INVREC_{i,t}$	1,851	0.269	0.193	0.009	0.120	0.241	0.367	0.870
$ROA_{i,t}$	1,851	0.055	0.080	-0.231	0.020	0.051	0.090	0.326
$FOROP_{i,t}$	1,851	0.806	0.395	0.000	1.000	1.000	1.000	1.000
$GROWTH_{i,t}$	1,851	0.069	0.173	-0.393	-0.010	0.053	0.130	0.966
$SALES\_VOL_{i,t}$	1,844	0.131	0.139	0.006	0.047	0.088	0.155	0.818
$CFO_{i,t}$	1,844	0.113	0.085	-0.081	0.061	0.100	0.146	0.459
$CFO\_VOL_{i,t}$	1,844	0.034	0.030	0.003	0.015	0.025	0.042	0.174
$MTB_{i,t}$	1,851	3.408	4.165	-8.872	1.360	2.342	4.306	24.887
$LEVERAGE_{i,t}$	1,851	0.580	0.219	0.118	0.427	0.566	0.719	1.369
$LOSS_{i,t}$	1,851	0.147	0.355	0.000	0.000	0.000	0.000	1.000
$AIND_{i,t}$	1,851	0.243	0.215	0.000	0.079	0.192	0.350	0.883
$ISP_{i,t}$	1,851	0.193	0.170	0.010	0.083	0.144	0.274	1.000
$BUSY_{i,t}$	1,851	0.556	0.497	0.000	0.000	1.000	1.000	1.000
$INCR\_DACC_{i,t}$	930	0.053	0.045	0.001	0.019	0.041	0.074	0.210
$ABS\_DECR\_DACC_{i,t}$	913	0.054	0.047	0.001	0.019	0.043	0.075	0.226
$SMALL\_PROFITS_{i,t}$	1,844	0.161	0.367	0.000	0.000	0.000	0.000	1.000
$AUDIT\_DELAY_{i,t}$	1,856	66.039	16.418	35.000	55.000	64.000	74.000	121.000
$BIG4_{i,t}$	1,851	0.934	0.249	0.000	1.000	1.000	1.000	1.000

Panel B: Time Trend in KAM Dissimilarity compared to Industry Peers

	N	*KAM_DISSIMILARITY*$_{i,t}$	*RISK_DISSIMILARITY*$_{i,t}$	*RESP_DISSIMILARITY*$_{i,t}$
Before December 2016	768	1.008	1.009	1.007
		(0.056)	*(0.049)*	*(0.046)*
After December 2016	1,083	0.992	0.993	0.994
		(0.059)	*(0.056)*	*(0.049)*
T-Test of mean differences		0.017***	0.016***	0.013***

Panel C: Correlation Matrix

	KAM_DISSIMILARITY$_{i,t}$	*RISK_DISSIMILARITY*$_{i,t}$	*RESP_DISSIMILARITY*$_{i,t}$	*KAM_LENGTH*$_{i,t}$	*RISK_LENGTH*$_{i,t}$	*RESP_LENGTH*$_{i,t}$	*NBKAM*$_{i,t}$	*SIZE*$_{i,t}$	*INVREC*$_{i,t}$	*ROA*$_{i,t}$	*FOROP*$_{i,t}$	*GROWTH*$_{i,t}$	*SALES_VOL*$_{i,t}$	*CFO*$_{i,t}$	*CFO_VOL*$_{i,t}$	*MTB*$_{i,t}$	*LEVERAGE*$_{i,t}$	*LOSS*$_{i,t}$	*AIND*$_{i,t}$	*ISP*$_{i,t}$	*BUSY*$_{i,t}$	*ABS_DACC*$_{i,t}$	*SMALL_PROFITS*$_{i,t}$	*AUDIT_DELAY*$_{i,t}$
KAM_DISSIMILARITY$_{i,t}$		**0.872**	**0.931**	-0.004	-0.055	0.027	0.039	-0.001	-0.118	-0.046	0.018	-0.170	0.012	0.013	**0.163**	-0.072	**0.051**	**0.077**	**0.113**	-0.027	-0.052	0.037	0.028	**0.118**
RISK_DISSIMILARITY$_{i,t}$	**0.857**		**0.731**	**0.046**	-0.012	**0.069**	0.023	0.036	-0.154	-0.081	-0.014	-0.117	-0.023	0.014	**0.146**	-0.087	**0.051**	**0.097**	**0.118**	-0.004	-0.001	**0.054**	**0.048**	**0.113**
RESP_DISSIMILARITY$_{i,t}$	**0.937**	**0.752**		-0.031	-0.046	-0.017	0.028	-0.035	-0.079	-0.027	0.030	-0.155	**0.044**	0.015	**0.178**	-0.040	**0.050**	**0.058**	**0.114**	-0.031	-0.045	0.032	0.023	**0.112**
KAM_LENGTH$_{i,t}$	-0.003	**0.051**	-0.021		**0.856**	**0.940**	-0.064	**0.177**	-0.122	-0.192	0.011	-0.017	0.019	-0.077	0.015	-0.106	**0.048**	**0.167**	-0.133	-0.050	**0.087**	0.006	0.026	**0.054**
RISK_LENGTH$_{i,t}$	-0.064	-0.005	-0.057	**0.861**		**0.654**	-0.044	**0.153**	-0.095	-0.186	0.017	0.011	0.010	-0.102	-0.009	-0.107	**0.047**	**0.153**	-0.101	-0.052	**0.068**	-0.011	0.034	**0.048**
RESP_LENGTH$_{i,t}$	0.028	**0.077**	-0.007	**0.943**	**0.664**		-0.065	**0.171**	-0.123	-0.170	0.006	-0.030	0.022	-0.052	0.023	-0.098	**0.042**	**0.152**	-0.140	-0.046	**0.081**	0.019	0.021	**0.040**
NBKAM$_{i,t}$	0.020	-0.012	0.016	-0.093	-0.049	-0.088		**0.396**	-0.125	-0.250	-0.184	**0.091**	-0.170	-0.159	-0.161	-0.085	**0.256**	**0.124**	**0.043**	**0.076**	0.011	-0.016	**0.155**	-0.169
SIZE$_{i,t}$	0.025	**0.071**	-0.001	**0.171**	**0.134**	**0.178**	**0.411**		-0.269	-0.184	-0.099	**0.113**	-0.299	-0.104	-0.389	-0.080	**0.281**	-0.002	0.036	**0.069**	**0.123**	-0.128	**0.121**	-0.379
INVREC$_{i,t}$	-0.076	-0.111	-0.051	-0.100	-0.083	-0.106	-0.157	-0.266		**0.222**	**0.077**	-0.009	**0.413**	-0.094	**0.114**	**0.176**	**0.053**	-0.109	-0.125	-0.115	-0.080	0.024	-0.121	**0.042**
ROA$_{i,t}$	-0.034	-0.069	-0.013	-0.154	-0.122	-0.153	-0.219	-0.151	**0.172**		**0.185**	-0.041	**0.169**	**0.589**	**0.201**	**0.460**	-0.219	-0.608	-0.031	-0.067	-0.111	0.009	-0.413	-0.131
FOROP$_{i,t}$	0.010	-0.023	0.017	0.017	0.019	0.013	-0.107	-0.075	**0.040**	**0.101**		-0.073	**0.345**	**0.193**	**0.153**	**0.175**	-0.125	-0.160	**0.046**	-0.020	-0.033	0.020	-0.096	**0.057**
GROWTH$_{i,t}$	-0.166	-0.102	-0.142	-0.018	-0.005	-0.024	**0.103**	**0.135**	-0.099	-0.066	-0.062		-0.093	-0.020	-0.116	**0.124**	-0.012	0.036	0.017	**0.103**	**0.094**	-0.064	-0.035	-0.109
SALES_VOL$_{i,t}$	**0.055**	0.007	**0.061**	-0.007	0.012	-0.023	-0.165	-0.285	**0.395**	**0.176**	**0.265**	-0.079		**0.122**	**0.404**	**0.186**	-0.005	-0.018	0.000	-0.097	-0.068	**0.103**	-0.122	**0.119**
CFO$_{i,t}$	0.010	-0.003	0.016	-0.043	-0.042	-0.036	-0.160	-0.144	-0.107	**0.635**	**0.166**	-0.052	**0.173**		**0.248**	**0.414**	-0.088	-0.317	0.020	0.000	0.024	0.012	-0.234	-0.102
CFO_VOL$_{i,t}$	**0.136**	**0.109**	**0.148**	-0.021	-0.045	-0.016	-0.145	-0.366	**0.109**	**0.202**	**0.182**	-0.087	**0.400**	**0.307**		**0.058**	-0.127	0.026	**0.073**	0.010	0.022	**0.217**	-0.120	**0.199**
MTB$_{i,t}$	-0.007	-0.032	0.025	-0.087	-0.077	-0.079	-0.054	-0.085	**0.088**	**0.344**	**0.084**	**0.042**	**0.224**	**0.331**	**0.117**		**0.140**	-0.229	**0.044**	-0.084	-0.088	-0.015	-0.215	-0.197
LEVERAGE$_{i,t}$	**0.042**	0.034	0.038	**0.039**	**0.054**	0.032	**0.230**	**0.224**	0.030	-0.119	-0.118	-0.042	**0.082**	-0.040	-0.040	**0.082**		**0.095**	**0.045**	-0.035	-0.009	0.017	**0.126**	-0.116
LOSS$_{i,t}$	**0.072**	**0.078**	**0.055**	**0.139**	**0.117**	**0.137**	**0.126**	-0.001	-0.105	-0.625	-0.083	0.036	-0.005	-0.277	0.019	-0.122	**0.090**		**0.056**	**0.046**	**0.095**	**0.129**	-0.180	**0.141**
AIND$_{i,t}$	**0.114**	**0.123**	**0.122**	-0.132	-0.121	-0.132	0.005	-0.039	-0.074	-0.002	**0.083**	0.014	0.027	0.033	**0.112**	**0.045**	0.030	**0.061**		0.017	0.013	0.038	0.010	0.028
ISP$_{i,t}$	0.031	**0.041**	0.033	-0.110	-0.132	-0.089	0.030	-0.012	-0.072	-0.068	0.025	0.009	-0.067	-0.036	0.006	-0.107	-0.053	0.022	-0.015		**0.064**	-0.023	-0.017	**0.079**
BUSY$_{i,t}$	-0.052	-0.003	-0.047	**0.076**	**0.056**	**0.078**	0.033	**0.124**	-0.111	-0.084	-0.015	**0.094**	-0.096	0.028	0.035	-0.077	-0.017	**0.095**	0.005	0.002		0.025	0.021	**0.167**
ABS_DACC$_{i,t}$	**0.043**	**0.047**	**0.040**	0.010	0.005	0.013	-0.030	-0.152	0.036	0.035	**0.055**	-0.060	**0.138**	**0.123**	**0.262**	0.037	0.031	**0.098**	**0.067**	-0.003	**0.048**		-0.052	**0.048**
SMALL_PROFITS$_{i,t}$	0.032	**0.055**	0.021	0.022	0.028	0.019	**0.142**	**0.118**	-0.119	-0.214	-0.074	-0.035	-0.091	-0.196	-0.119	-0.145	**0.092**	-0.180	0.018	0.009	0.021	-0.074		0.003
AUDIT_DELAY$_{i,t}$	**0.129**	**0.105**	**0.120**	0.010	-0.004	0.008	-0.114	-0.332	**0.046**	-0.163	**0.054**	-0.098	**0.092**	-0.110	**0.144**	-0.117	-0.099	**0.155**	**0.063**	**0.132**	**0.166**	**0.046**	0.016	

Table 1 - 3: Variance Decomposition

Table 1 - 3 reports the results regarding the variance decomposition of KAM dissimilarity. We examine the entire KAM (*KAM_DISSIMILARITY*) before examining its two components: the risk description (*RISK_DISSIMILARITY*) and the auditors' response and observation (*RESP_DISSIMILARITY*). We control only for KAM determinants, the length, and the number of KAMs. We report the adjusted R^2 based on different sets of fixed effects. Standard errors are clustered by audit firm-year. All the continuous variables are winsorized at the 1% and 99% levels.

	$KAM\_DISSIMILARITY_{i,t}$	$RISK\_DISSIMILARITY_{i,t}$	$RESP\_DISSIMILARITY_{i,t}$
No FE	-0.001	-0.001	-0.001
Year FE	0.041	0.052	0.042
Industry FE	0.070	0.065	0.048
Audit Firm FE	0.055	0.086	0.067
Audit Partner FE	0.325	0.306	0.313
Client Firm FE	0.440	0.344	0.403

Table 1 - 4: Determinants of KAM Dissimilarity

Table 1 - 4 reports the regression results for the determinants of KAM. We alternatively examine the entire KAM (*KAM_DISSIMILARITY*) in Column (1), the risk description (*RISK_DISSIMILARITY*) in Column (2), and the auditors' response and observation (*RESP_DISSIMILARITY*) in Column (3). The regressions include client-firm, year, and audit partner fixed effects and standard errors reported in parentheses are clustered at the audit firm-year level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively.

	(1)	(2)	(3)
VARIABLES	$KAM\_DISSIMILARITY_{i,t}$	$RISK\_DISSIMILARITY_{i,t}$	$RESP\_DISSIMILARITY_{i,t}$
$KAM\_LENGTH_{i,t}$	0.009		
	(0.009)		
$RISK\_LENGTH_{i,t}$		0.015**	
		(0.007)	
$RESP\_LENGTH_{i,t}$			0.000
			(0.007)
$NBKAM_{i,t}$	-0.006	-0.019*	-0.008
	(0.007)	(0.010)	(0.006)
$SIZE_{i,t}$	0.001	0.010*	0.001
	(0.005)	(0.005)	(0.005)
$INVREC_{i,t}$	-0.017	0.007	-0.030
	(0.042)	(0.037)	(0.039)
$ROA_{i,t}$	0.061*	0.010	0.046
	(0.032)	(0.027)	(0.028)
FOROPi,t	-0.010	-0.017	-0.018
	(0.015)	(0.021)	(0.012)
$GROWTH_{i,t}$	-0.007	-0.017*	-0.007
	(0.009)	(0.009)	(0.007)
$MTB_{i,t}$	-0.001	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
$LEVERAGE_{i,t}$	0.042**	0.054***	0.034**
	(0.018)	(0.016)	(0.016)
$LOSS_{i,t}$	0.005	0.001	0.004
	(0.005)	(0.004)	(0.004)
$AIND_{i,t}$	0.013*	0.012*	0.014**
	(0.007)	(0.006)	(0.005)
$ISP_{i,t}$	0.015	-0.006	0.012
	(0.010)	(0.008)	(0.008)
$BUSY_{i,t}$	-0.035	-0.075**	-0.042*
	(0.027)	(0.030)	(0.023)
Constant	0.845***	0.770***	0.952***
	(0.162)	(0.122)	(0.134)
Observations	1,851	1,851	1,851
Adjusted R-squared	0.604	0.568	0.572
Client Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Audit Partner FE	YES	YES	YES
Audit Firm - Year Clusters	YES	YES	YES

Table 1 - 5: Audit Quality Analysis

Table 1 - 5 reports the regression results for the audit quality analysis. We use several proxies of audit quality. We examine income increasing and the absolute value of income-decreasing performance-matched discretionary accruals following Kothari et al. (2005) in Columns (1) and (2), and (3) and (4), respectively. We then examine the propensity of managers to report small profits in Columns (5) and (6). We first examine the entire KAM (*KAM_DISSIMILARITY*) in Columns (1), (3), and (5), and then its two components: the risk description (*RISK_DISSIMILARITY*) and the auditors' response and observation (*RESP_DISSIMILARITY*) in Columns (2), (4), and (6). We use OLS regressions in Columns (1) to (4) and logit regressions in Columns (5) and (6). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered at the audit firm-year level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	$INCR\_DACC_{i,t}$	$INCR\_DACC_{i,t}$	$ABS\_DECR\_DACC_{i,t}$	$ABS\_DECR\_DACC_{i,t}$	$SMALL\_PROFITS_{i,t}$	$SMALL\_PROFITS_{i,t}$
$KAM\_DISSIMILARITY_{i,t}$	0.034		-0.069***		0.980	
	(0.031)		(0.018)		(1.289)	
$KAM\_LENGTH_{i,t}$	-0.004		0.005		0.324	
	(0.005)		(0.006)		(0.254)	
$RISK\_DISSIMILARITY_{i,t}$		0.052		-0.015		7.967***
		(0.041)		(0.040)		(2.339)
$RESP\_DISSIMILARITY_{i,t}$		-0.018		-0.079*		-6.094**
		(0.045)		(0.043)		(2.632)
$LENGTH\_RATIO_{i,t}$		0.014		0.007		0.226
		(0.019)		(0.018)		(0.886)
$NBKAM_{i,t}$	0.007**	0.008**	0.006*	0.005	0.995***	1.048***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.235)	(0.239)
$SIZE_{i,t}$	-0.003***	-0.004***	-0.002*	-0.001	-0.073	-0.079
	(0.001)	(0.001)	(0.001)	(0.001)	(0.057)	(0.056)
$GROWTH_{i,t}$	0.016*	0.017*	-0.013	-0.013	-0.616	-0.490
	(0.009)	(0.009)	(0.011)	(0.011)	(0.603)	(0.597)
$SALES\_VOL_{i,t}$	0.029**	0.029**	-0.018	-0.019	-1.628**	-1.545*
	(0.012)	(0.012)	(0.015)	(0.015)	(0.805)	(0.810)

$CFO_{i,t}$	-0.159***	-0.156***	0.221***	0.219***	-14.032***	-14.282***
	(0.023)	(0.022)	(0.024)	(0.024)	(1.194)	(1.185)
$CFO\_VOL_{i,t}$	0.140*	0.144**	0.143*	0.149*	-11.668***	-12.629***
	(0.070)	(0.070)	(0.083)	(0.081)	(4.450)	(4.472)
$MTB_{i,t}$	0.001**	0.001**	-0.001*	-0.001*	-0.107***	-0.106***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.033)	(0.033)
$LOSS_{i,t}$	-0.001	-0.001	0.028***	0.028***		
	(0.004)	(0.004)	(0.005)	(0.005)		
$FOROP_{i,t}$	0.003	0.003	-0.005	-0.005	-0.072	-0.092
	(0.004)	(0.004)	(0.004)	(0.005)	(0.171)	(0.178)
$LEVERAGE_{i,t}$	0.001	0.002	0.009	0.009	1.327***	1.383***
	(0.008)	(0.008)	(0.007)	(0.007)	(0.353)	(0.346)
$ISP_{i,t}$	0.015	0.015	0.004	0.004	0.781	0.736
	(0.013)	(0.013)	(0.011)	(0.010)	(0.726)	(0.701)
$AIND_{i,t}$	-0.019**	-0.019**	0.008	0.009	0.854**	0.906**
	(0.008)	(0.008)	(0.008)	(0.007)	(0.378)	(0.390)
$BUSY_{i,t}$	-0.000	-0.001	0.002	0.002	0.427***	0.452***
	(0.004)	(0.004)	(0.002)	(0.003)	(0.155)	(0.157)
Constant	0.092*	0.070	0.080**	0.124***	-3.223	-2.476
	(0.048)	(0.042)	(0.035)	(0.030)	(2.208)	(2.476)
Observations	930	930	913	913	1,579	1,579
Adjusted R-squared	0.143	0.142	0.254	0.253		
Pseudo R-squared					0.212	0.218
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Audit Firm FE	YES	YES	YES	YES	YES	YES
Audit Firm - Year Clusters	YES	YES	YES	YES	YES	YES

Table 1 - 6: Audit Delay Analysis

Table 1 - 6 reports the regression results for the audit delay analysis. We first examine the entire KAM (*KAM_DISSIMILARITY*) in Column (1), and then its two components: the risk description (*RISK_DISSIMILARITY*) and the auditors' response and observation (*RESP_DISSIMILARITY*) in Column (2). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered at the audit firm-year level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 1 - 1. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively.

VARIABLES	(1) $AUDIT\_DELAY_{i,t}$	(2) $AUDIT\_DELAY_{i,t}$
$KAM\_DISSIMILARITY_{i,t}$	31.504***	
	(5.431)	
$KAM\_LENGTH_{i,t}$	-0.181	
	(1.000)	
$RISK\_DISSIMILARITY_{i,t}$		6.635
		(11.717)
$RESP\_DISSIMILARITY_{i,t}$		26.836**
		(11.059)
$LENGTH\_RATIO_{i,t}$		1.836
		(4.136)
$NBKAM_{i,t}$	0.419	0.459
	(1.060)	(1.089)
$SIZE_{i,t}$	-3.595***	-3.594***
	(0.205)	(0.207)
$INVREC_{i,t}$	0.680	0.564
	(1.797)	(1.783)
$ROA_{i,t}$	-32.691***	-32.348***
	(5.235)	(5.253)
$GROWTH_{i,t}$	2.670	2.718
	(1.950)	(1.975)
$MTB_{i,t}$	-0.099	-0.107
	(0.077)	(0.076)
$LEVERAGE_{i,t}$	0.344	0.354
	(1.453)	(1.483)
$LOSS_{i,t}$	0.101	0.204
	(1.089)	(1.070)
$AIND_{i,t}$	5.258***	5.161***
	(1.552)	(1.544)
$ISP_{i,t}$	-3.096	-3.006
	(2.237)	(2.190)
$BUSY_{i,t}$	6.043***	5.913***
	(0.842)	(0.854)
Constant	111.730***	107.880***
	(8.038)	(7.059)
Observations	1,856	1,856
Adjusted R-squared	0.316	0.313
Industry FE	YES	YES
Year FE	YES	YES
Audit Firm FE	YES	YES
Audit Firm - Year Clusters	YES	YES

CHAPTER 2

CLIENT-SPECIFIC INFORMATION IN KEY AUDIT MATTERS AND AUDIT RISKS

Client-Specific Information in Key Audit Matters and Audit Risks

Abstract

The introduction of Key Audit Matters (KAMs) provides opportunities to better understand the audit risk model, a foundation of the auditing literature. Our paper investigates the association between auditors' disclosure of client-specific information in KAMs and audit risks (captured by an audit fees model). We find that client-specific information in the risk description of the KAM is positively associated with audit risks, consistent with greater inherent and control risks. We also find that client-specific information in the response and observation of the KAM is negatively associated with audit risks, consistent with a reduction in detection risks. Overall, auditors' disclosure of client-specific information in KAMs is associated with lower audit risks. We further show that client-specific information in the auditors' response and observation is associated with higher audit quality and greater audit effort. Additional tests show that our results are stronger when KAM topics are new or infrequent, when auditors face lower industry litigation risks, when managers' compensation is linked to firm performance and firms are more profitable, and when auditors are industry experts and have a short tenure.

Keywords: Key Audit Matters, audit risk, audit fees, KAM dissimilarity, auditor disclosure, textual analysis, audit process

1. Introduction

Prior literature finds that auditors charge higher audit fees for riskier clients (DeFond & Zhang, 2014; Hay, Knechel, & Wong, 2006). However, a major limitation of these studies is the inability to assess whether the increase in audit fees is due to a risk premium and/or higher audit quality and audit effort (DeFond & Zhang, 2014). There is a need for more research identifying the possible presence of a risk premium in audit fees (DeFond & Zhang, 2014; Ranasinghe, Yi, & Zhou, 2022). We believe that the introduction of Key Audit Matters (KAMs) and analyzing the two KAM components separately, namely (a) the risk description and (b) the auditors' response and observation provide opportunities to better understand the audit risk model. This paper investigates the association between auditors' disclosure of client-specific information in the two KAM components and audit risks (captured by audit fees).

The revision of the international standard on auditing ISA700 introduced in 2013 the expanded audit report for premium listed firms on the London Stock Exchange (LSE) (FRC, 2013b).[14] This standard mandates auditors to disclose Key Audit Matters in audit reports related to the greatest risks of material misstatements encountered during the audit process. KAMs represent a risk-based exercise from the auditors' perspective that explains (a) the risk encountered and (b) the audit procedures performed to address the identified risk (IAASB, 2015). KAM disclosures result from a demand for more informative audit reports that would mitigate information asymmetry between auditors and users of the audit report (Church et al., 2008; Gray et al., 2011; Mock et al., 2013; Vanstraelen et al., 2012). However, critics of this new disclosure requirement feared that KAMs would be boilerplate and standardized (Citi

[14] This regulation was first implemented in the United-Kingdom and Ireland for premium listed firms on the London Stock Exchange in 2013. Since then, KAMs have been implemented worldwide, such as in the European Union, several Asian countries, and Australia in 2016, in China in 2017, in Canada in 2018 and in the United-States in 2019 with the Critical Audit Matters.

Research, 2014; Gray et al., 2011; Mock et al., 2013) although the standard encourages auditors to write KAMs in their own words (FRC, 2013b).

We define client-specific information in KAMs as the differences in words disclosed by auditors compared to the same type of KAM of industry peers per fiscal year. We provide examples of two KAMs from different firms belonging to the same industry for illustrative purposes in Appendix 2 - 1. Although both KAMs refer to the same type of risk "Revenue recognition", auditors provide client-specific information that can help users of the audit report better understand the risks and audit procedures specific to that audit engagement. While KAM lengths differ, there are also variations in the words chosen and their occurrence. We capture these variations reflecting client-specific information with KAM dissimilarity metrics.

The sign of the association between auditors' disclosure of client-specific information in KAMs and audit risks is not straightforward and depends on the two KAM components. The audit risk model decomposes audit risks into the product of three types of risks: inherent, control, and detection risks (e.g., ECA, 2012; Hogan & Wilkins, 2008; PCAOB, 2006). When assessing the risk of their clients, auditors document inherent and control risks in the risk description part, both increasing the level of audit risk (Dohrer, 2019; Hogan & Wilkins, 2008). To keep audit risk at an acceptable level, auditors reduce detection risk by performing additional testing and procedures (Hogan & Wilkins, 2008), which are disclosed in the auditors' response and observation part. Examining KAM disclosures enables us to enhance our understanding of audit risks' decomposition through the two components of the KAMs: (a) the risk description (capturing inherent and control risks) and (b) the auditors' response and observation (capturing detection risk).

Although some risks are inherent to an industry, KAMs should be specific to the client firm audited. Auditors may justify their decision to report a KAM based on client-specific events, transactions, or internal control deficiencies that occurred during the fiscal period (FRC,

2013a). When describing risks requiring the most professional judgment during the audit process, auditors are likely to provide client-specific information related to inherent and control risks, increasing the overall level of audit risks. Auditors increase substantive testing to feel comfortable about the audit process (e.g., Guénin-Paracini et al., 2014; Pentland, 1993) and to keep audit risk at an acceptable level (Hogan & Wilkins, 2008). Thanks to their understanding of the firm's environment, auditors can adapt the audit procedures performed to address the identified risk. When explaining the audit procedures performed to address the risk identified, auditors are likely to provide client-specific information related to detection risks, decreasing the overall level of audit risks. Therefore, we expect an opposite association between auditors' disclosure of client-specific information in each KAM component and audit risks: (a) a positive association for the risk description, and (b) a negative association for the auditors' response and observation. Auditors' disclosure of client-specific information in the full KAMs corresponds to the joint effect of its two components, expected to yield opposite and complementary insights about audit risks.

KAMs represent purely qualitative disclosures and their content can thus be boilerplate. Auditors are encouraged to write KAMs in their own words (FRC, 2013b) but critics feared they would be boilerplate (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013). Moreover, recent research examining the implementation of CAMs in the US based on audit partners' interviews finds that auditors engage in herding behavior when writing CAMs to avoid standing out from their peers (Dannemiller et al., 2022; Griffith et al., 2022). If KAMs are boilerplate, we will not find any association between auditors' disclosure of client-specific information and audit risks.

We test our conjectures on a sample of premium listed firms on the London Stock Exchange from 2013 to 2019. Because these firms were the first ones required to disclose KAMs, we choose the longest time series possible. We capture auditors' disclosure of client-

specific information with three KAM dissimilarity measures. Based on textual analysis tools, we develop one metric for each of the two KAM components: (a) the risk description and (b) the response and observation. We also compute a dissimilarity metric for the full KAM disclosure. Following prior literature, we use the cosine similarity method to get a dissimilarity score among industry peers facing the same type of risks per fiscal year (S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). Similar risks are defined based on KAM topics, such as "Revenue recognition", "Valuation of intangible assets", "Taxation" etc. We ensure there are at least five KAMs in each group at the topic-industry-year level to have a benchmark to compare firms. We then build our KAM dissimilarity measures for firm-year observations. We isolate audit risk in audit fees by using a classic audit fee model (e.g., Hay et al., 2006) augmented with factors related to client-specific risks and requiring more audit effort (e.g., Cassell, Drake, & Rasmussen, 2011; Hogan & Wilkins, 2008).

We first examine the two KAM components, that is (a) the risk description, and (b) the auditors' response and observation. We find statistically significant associations between their dissimilarity scores and audit fees, but with opposite signs. We report a positive (negative) association between auditors' disclosure of client-specific information in the risk description (response and observation) of the KAM and audit risks. Next, we examine the full KAM disclosure and find a negative association between auditors' disclosure of client-specific information in KAMs and audit risks. Taken together, these results suggest that more client-specific information in the risk description reflects greater inherent and control risks, while client-specific information in the auditors' response and observation reflects lower detection risks. Moreover, we find that the decrease in detection risk is greater compared to the increase in inherent and control risks.

We run several cross-sectional tests to enhance the validity of our main findings. We examine settings in which we expect the relationship between auditors' disclosure of client-

specific information in KAMs and audit risks to be stronger. To this end, we exploit three sources of risks based on KAM, client, and auditor characteristics, respectively.

First, we examine two KAM characteristics: the issuance of a new KAM topic and infrequent KAM topics. Auditors exercise more professional judgment and skepticism to audit riskier clients (Guénin-Paracini et al., 2014; Pentland, 1993). New or infrequent risks of material misstatement are likely to be perceived as riskier by auditors. Therefore, we expect the association between client-specific information and audit risks to be stronger when auditors disclose a majority of new or infrequent KAMs. Our results are consistent with our expectations.

Second, we analyze client firm characteristics related to firms belonging to risky litigation industries, firm performance, and managerial compensation. KAM disclosure can be challenging for auditors and can increase their liability in case of litigation (A. G. Backof, Bowlin, & Goodson, 2022; Gimbar et al., 2015; Lee et al., 2019) or during inspections. We expect stronger results when clients are in a less litigious industry, as auditors face lower risks regarding the content of their disclosures. Further, we expect our findings to be stronger when firms are performing well, and for firms whose managerial compensation is linked to the firm's performance. Auditors are more likely to increase their professional skepticism when auditing such clients and may justify the KAMs by providing more client-specific information about the risks and procedures performed. Our results are consistent with our expectations.

Finally, we examine audit firm characteristics. We expect our results to be stronger when auditors are industry specialists and can better detect the risks of their clients (L. Y. Lu, Wu, & Yu, 2017). We also expect our results to be stronger when auditor tenure is shorter, as longer tenure is likely to bias auditor independence making auditors align with management (Arruñada & Paz-Ares, 1997; Hoyle, 1978; Johnson, Khurana, & Reynolds, 2002a). We find results consistent with our expectations.

We perform two additional analyses with proxies of audit quality and audit effort as the dependent variable. In a recent study, Ranasinghe et al. (2022) find evidence of a business risk premium in audit fees. The authors demonstrate that an increase (decrease) in audit fees, does not necessarily imply an increase (decrease) in audit quality and audit effort. If auditors reduce detection risks and the overall level of audit risks without compromising audit quality or audit effort, we will observe a positive association between our KAM dissimilarity metrics and alternative audit quality and audit effort proxies. Our results are consistent with this expectation. We provide evidence that reducing audit risks do not impair audit quality and is not associated with lower audit effort. These results further validate that our audit fee model reflects audit risk and not audit quality or quality effort.

This study makes several important contributions to the literature. First, our paper complements prior literature on audit risk (e.g., Felix et al., 2001; Hackenbrack & Knechel, 1997; Hogan & Wilkins, 2008; Mock & Wright, 1999). We provide evidence that auditors' disclosure of client-specific information in KAMs is associated with audit risks. By linking the KAM components with those of audit risk, we find that client-specific information in the risk description (auditors' response and observation) is associated with greater (lower) audit risk, reflecting inherent and control risks (detection risks).

Second, this study contributes to the audit fee literature by showing that KAMs provide a setting in which we can identify audit risk premiums. Our paper complements the recent study by Ranasinghe et al. (2022) finding a business risk premium in a sample of hedging derivative usage by US oil and gas firms. One limitation of their study is that their results could be attributed to overall risk aversion (Ranasinghe et al., 2022). By using a sample of premium listed firms on the LSE, our study complements this paper by examining audit risk and by ruling out the alternative explanation related to risk aversion. Moreover, as pointed out by DeFond and Zhang (2014), these results make an important contribution to the literature, as they suggest

that higher (lower) audit fees are not necessarily attributable to higher (lower) audit quality or audit effort.

Third, our study complements the growing literature on the consequences of the regulatory change of KAM disclosures by providing insights into the content of KAM disclosures. Prior literature provides mixed evidence regarding the effect of this disclosure requirement on audit fees, audit quality, and financial reporting quality (Bens et al., 2019; Drake et al., 2021; Gold et al., 2020; Gutierrez et al., 2018; Hong Li et al., 2019; Liao et al., 2022; Reid et al., 2019). Our paper also complements the literature examining the similarity of KAMs (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021). We highlight the importance of examining the different components of KAM disclosures separately by showing that their dissimilarity scores have an opposite association with audit risks.

Fourth, our KAM dissimilarity metrics go beyond the textual features of KAMs studied in prior literature. Previous research focuses on the number and types of KAMs (e.g., Al-mulla & Bradbury, 2022; Rousseau & Zehms, 2022) as well as KAM readability and tone (Chen, Nelson, et al., 2020; Lennox et al., 2022). We complement these papers by analyzing auditors' disclosure of client-specific information. By grouping KAMs per industry peers facing the same types of risks, we ensure comparability among KAMs, and our dissimilarity metrics are different from prior literature in this sense (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021).

The rest of the paper is structured as follows. We review the literature and develop our hypotheses in the next section. We then describe our KAM dissimilarity measures and sample selection process in section 3, before analyzing our empirical results in section 4. We provide additional analyses in section 5 and robustness tests in section 6. Finally, we conclude in section 7.

2. Prior Literature and Hypotheses Development

2.1. Institutional Background

KAMs have first been implemented in the United Kingdom (UK) and Ireland for premium listed firms on the London Stock Exchange with fiscal year-end on or after September 30th, 2013 (FRC, 2013b). Other countries quickly followed with the implementation of KAMs in the European Union, Hong Kong, Singapore, New Zealand, and Australia in 2016 (AASB, 2015; HKICPA, 2016; IAASB, 2015; ISCA, 2016; NZ AASB, 2015), China in 2017 (Chinese MoF, 2016), in Canada in 2018 (CPA, 2018), and the United-States (US) in 2019 with Critical Audit Matters (CAMs) (PCAOB, 2017).[15]

KAM regulation is mostly similar among the different countries. A KAM represents a risk that needs to be communicated to those charged with governance (e.g., the audit committee). There is however a small difference between KAMs adopted by the IAASB, following a principles-based approach, and CAMs adopted by the PCAOB. Whereas CAMs are related to accounts that are material to financial statements, materiality is not mentioned in the definition of a KAM. However, materiality may be relevant to determining its relative significance as a KAM (IAASB, 2015, paragraph A29 of ISA701). Consequently, there can be differences in the number and type of CAM compared to KAM disclosures, but overall, KAM regulation is similar worldwide.

By implementing KAM disclosures, the Financial Reporting Council (FRC) aims to enhance the transparency of the audit process and improve communication between auditors and users of the audit report. Although the standard encourages auditors to write KAMs in their own words, there are no special guidelines on how auditors should write KAMs (FRC, 2013b). Audit partners feel that ISA701 is ambiguous and they have discretion in its application

[15] Throughout this paper, we refer to Key Audit Matters, implemented globally, as KAMs, and Critical Audit Matters, specific to the US, as CAMs.

(Abdullatif & Al-Rahahleh, 2020). Prior literature finds that while useful and enhancing audit report transparency, KAM disclosures do not reduce the expectation gap (e.g., Kutera, 2019; Levanti, 2019; Segal, 2019; Simnett & Huggins, 2014). KAMs represent a risk-based exercise from the auditors' perspective where they report the matters requiring the most professional judgment and representing the greatest risks of material misstatements during the audit process. Examining the content of KAM disclosures and its relation to audit risk provides opportunities to get insights into the audit process from the auditors' perspective.

2.2. Consequences of KAM Disclosures

The regulation of KAM disclosures results from a demand for more informative audit reports. Prior literature suggests that audit reports are not easily understandable by many users (Barnett & Leoffler, 1979; Pound, 1981). KAM disclosures provide room for auditors to have a "voice" in explaining the audit process and they increase audit reports' readability in the UK and Ireland (Smith, 2022). However, conducting an experiment, Carver and Trinkle (2017) find that CAM disclosures in the US negatively impact the readability of the audit report.

The growing KAM literature examines different aspects of KAM disclosures. Several archival studies focus on the audit consequences of the KAM regulation and provide mixed evidence. Several papers fail to find an association between this regulatory change and audit fees, and audit quality in Hong Kong (Liao et al., 2022), the UK (Gutierrez et al., 2018), and the US (Burke et al., 2022); Hong Li et al. (2019) find an increase in audit quality and audit fees in New Zealand after the implementation of KAM disclosures. Several researchers find an increase in financial reporting quality with no significant changes in audit fees after the regulatory change in the UK (Reid et al., 2019) and the US, focusing on tax-related CAMs (Drake et al., 2021). Several papers also report higher financial reporting quality after the implementation of KAMs in the UK (Bens et al., 2019), China, and Hong Kong (Zeng et al., 2021). Similarly, in an experiment, Gold et al. (2020) find that managers reduce their tendency

to make aggressive financial reporting decisions in the presence of KAMs, suggesting greater financial reporting quality. In addition, this regulatory change does not seem to impact audit delay (Al-mulla & Bradbury, 2022; Reid et al., 2019).

Another stream of literature examines features of KAM disclosures, such as their number and type. Several studies find that the magnitude and types of KAMs disclosed are not significantly associated with audit fees in Portugal (Domingos, 2018). Similarly, KAM features such as their type, number, length, and company-specific focus are not significantly associated with audit fees and audit quality in Hong Kong (Liao et al., 2022). Examining firms in New Zealand, Al-mulla and Bradbury (2022) find that the first occurrence of KAMs is not significantly associated with audit fees, while the number and uniqueness of KAMs are associated with higher audit fees. Similarly, examining firms listed on the LSE, Rousseau and Zehms (2022) find higher audit fees when auditors report more KAMs, more diversified KAM topics, and use 'insight' verbiage (e.g., "think" or "consider").

2.3. Similarity of KAM Disclosures

Although several authors investigate textual features of KAM disclosures, only a few focus on KAM similarity (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021). In the US, Burke et al. (2022) examine the similarity of CAMs to their referenced footnotes and find that management changes financial statements footnotes referenced by a CAM to make them more similar to the CAM in 2019 than in 2018. They also show that CAM referencing accounting policies footnotes lead to greater changes in the relevant policy compared to the policies not referenced by a CAM. These results persist in the second year of CAM disclosures and changes are greater for new CAMs.

Examining the similarity of KAMs in Hong Kong, Chen, Nelson, et al. (2020) find that audit fees decrease with the similarity of KAMs to industry peers, but longer, more complex,

litigious, and weak tone of the full KAM disclosures are associated with an increase in audit fees. However, these results differ among both KAM components. The authors find that complex words, litigious tone, and similarity are significantly associated with audit fees in the risk description of the KAM. On the other hand, the length of the disclosure, the numbers mentioned, and the weak tone are significantly associated with audit fees in the response component of the KAM (Chen, Nelson, et al., 2020). Similarly, in China, the number of KAMs and their textual features in the full KAM disclosure (specificity, similarity, readability, and length) is associated with audit effort (Zeng et al., 2021). These KAM characteristics signal auditors' concerns about their client's earnings quality, and the propensity of auditors to issue modified opinions in China and Hong Kong (Zeng et al., 2021).

We complement the KAM literature and especially papers examining KAM similarity (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021) by focusing on client-specific information in KAMs and its association with audit risks. By focusing on the same type of KAMs among industry peers per fiscal year, we control for underlying differences in economic activities among firms to enable a comparison for the same type of risk. Our dissimilarity metrics are thus different from grouping KAMs per industry-year irrespective of the KAM topic that reflects client-specific risks (Chen, Nelson, et al., 2020). More importantly, contrary to Burke et al. (2022) and Zeng et al. (2021) we decompose and examine separately the two KAM components before analyzing the full KAM disclosures. Although Zeng et al. (2021) examine the similarity in the two KAM components, they average the scores to get a firm-level aggregated measure of similarity, rendering impossible the analysis for each KAM component separately.

2.4. Hypotheses Development

The audit risk model, discussed in the auditing standards and literature, decomposes audit risk into the product of inherent, control, and detection risks (ECA, 2012; Hogan & Wilkins, 2008; PCAOB, 2006) as follows:

$$Audit\ Risk = Inherent\ Risk\ x\ Control\ Risk\ x\ Detection\ Risk$$

Inherent risk is defined as the risk of material misstatement before any control is performed. Control risk is the risk that the client's internal controls will not prevent or detect and correct the risk of material misstatement. Inherent risk and control risk are often blurred or combined (e.g., Allen, Hermanson, Kozloski, & Ramsay, 2006; Dohrer, 2019). The auditing standards assert that the description of risks of material misstatement is the auditors' combined assessment of inherent and control risks, although they can make separate assessments (AICPA, 2006). Moreover, in practice, it is often impossible to assess control risk independently of inherent risk (Haskins & Dirsmith, 1995). These two risks increase the overall level of audit risk (e.g., Hogan & Wilkins, 2008). Detection risks occur when auditors fail to identify a material misstatement in their client's financial statements. To maintain audit risk at an acceptable level, when inherent and control risks increase, auditors reduce detection risks by increasing substantive testing (Hogan & Wilkins, 2008).

KAM disclosures represent a risk-based exercise where auditors disclose the greatest risks of material misstatements and explain the audit procedures performed to address these risks. We argue that our KAM dissimilarity measures capture auditors' disclosure of client-specific risk information in KAMs. We decompose the KAM into its two main components: (a) the risk description and (b) the response and observation. Based on the definitions of KAMs and audit risks, we can link the two KAM components with the three components of audit risk.

When assessing the risk of their clients, auditors document inherent and control risks

(Dohrer, 2019; Hogan & Wilkins, 2008), disclosed in the risk description. In this part, auditors explain the underlying risk and why they reported it as a KAM. Auditors reduce detection risk by performing additional testing and procedures (Hogan & Wilkins, 2008). The response and observation component refers to detection risk, as auditors explain the audit procedures performed to address and alleviate the risk identified as a KAM. Figure 2 – 1 displays how the KAM components are related to the ones of audit risk. Decomposing KAM disclosures enable us to get insights into audit risks by disentangling its components: (a) the risk description capturing inherent and control risks and (b) the response and observation capturing detection risks.

[Insert Figure 2 – 1 here]

Simunic (1980) develops the first audit fee model focusing on the production view of the audit process in his seminal paper. Since then, the extant literature examines the determinants of audit fees based on client and auditor characteristics (see Hay et al., 2006 for a review). While the audit fee model is primarily used to examine audit pricing (e.g., Simunic, 1980), audit fees also reflect audit effort (e.g., Davis, Ricchiute, & Trompeter, 1993; Lobo & Zhao, 2013), audit quality (e.g., Aobdia, 2019), auditor independence (e.g., Ashbaugh, LaFond, & Mayhew, 2003; Frankel, Johnson, & Nelson, 2002), economic bonding (e.g., DeAngelo, 1981; Hoitash, Markelevich, & Barragato, 2007; Hope, Kang, Thomas, & Yoo, 2009; Simunic, 1980), auditors' litigation risks (e.g., Simunic & Stein, 1996), and audit risk (e.g., Cassell et al., 2011; Hogan & Wilkins, 2008).

The audit fee literature is abundant, but an important unresolved issue remains to distinguish whether increases in audit fees result from an audit risk premium and/or from greater audit effort and quality (DeFond & Zhang, 2014; Ranasinghe et al., 2022).[16] Prior literature

[16] Higher audit fees can create an economic bond between the auditor and the client, increasing audit risk while threatening audit quality (DeAngelo, 1981). We control for auditor independence in our model. Moreover, the

examined settings in which factors increasing audit risks also demand more audit effort, making it impossible to distinguish whether increases in audit fees are related to higher audit effort or an audit risk premium. Examining settings under which auditors charge an audit risk premium thus provides a significant contribution to the literature (DeFond & Zhang, 2014). Ranasinghe et al. (2022) provide the first evidence of a business risk premium in audit fees, independent of higher audit effort and quality. They use a sample of derivative hedging usage in US oil and gas companies, as derivatives reduce business risk related to the volatility of oil and gas prices, while it is complex to audit and thus implies more audit effort. However, one limitation of this setting is that their results could reflect overall risk aversion. We argue that KAMs provide opportunities to further examine audit risk.

Auditors charge higher audit fees for riskier clients (DeFond & Zhang, 2014). Following prior literature, we capture the overall level of audit risk with audit fees (e.g., Cassell et al., 2011; Hogan & Wilkins, 2008; G. V. Krishnan & Wang, 2014; Niemi, Knechel, Ojala, & Collis, 2018). Our augmented set of control variables, further detailed in section 4, related to client firm size, complexity, profitability, and riskiness enables us to isolate audit risk in audit fees after controlling for factors likely to increase audit effort. Therefore, we capture the incremental effect of auditors' disclosure of client-specific information in KAMs and audit risks with audit fees.

Isolating audit risk from audit effort in audit fees is possible in settings where the correlation between audit risk and audit effort is likely negative so that the effect of effort biases against finding an association between audit risk and audit fees (Ranasinghe et al., 2022). Inherent and control risks respectively represent the risk of material misstatement before any

economic bond reflected in audit fees would bias against us finding a negative association between client-specific information in the full KAM and audit risk. Indeed, the economic bond between an auditor and its client will prevent the auditor from performing additional testing and procedures.

control is performed and that internal control will not prevent the risk of material misstatement. Inherent and control risks increase audit risk and are present before auditors perform any procedures. To keep audit risk at an acceptable level, auditors reduce detection risk by performing additional procedures, likely to increase audit effort (Hogan & Wilkins, 2008). By linking the KAM components to those of audit risks, we provide a setting where the effect of audit effort biases against finding an association between client-specific information in the full KAMs and audit risk.

Prior literature finds a fee premium for greater risks of material misstatements in the risk description of KAMs associated with audit task complexity, litigation, and client-specific inherent risks (Chen, Nelson, et al., 2020). Although some risks are inherent to an industry, KAMs should be engagement-specific and auditors may justify their decision to report a KAM based on client-specific events, transactions, or internal control deficiencies that occurred during the fiscal period (FRC, 2013a). By comparing auditors' disclosures among industry peers facing the same type of risks, we expect auditors to disclose client-specific information in the risk description of KAMs that reflects greater inherent and control risks. Based on these arguments, we state the following hypothesis:

H1: Auditors' disclosure of client-specific information in the risk description of the KAM is positively associated with audit risks, reflecting greater inherent and control risks.

During the audit process, auditors increase substantive testing to feel comfortable with the audited accounts (e.g., Guénin-Paracini et al., 2014; Pentland, 1993) and to keep audit risks at an acceptable level, by reducing detection risks (Hogan & Wilkins, 2008). Client-specific information in the auditors' response and observation of the KAM reflects client-specific testing to address and alleviate the risk identified, which we expect to be associated with lower detection risks. Based on these arguments, we state our second hypothesis as follows:

H2: Auditors' disclosure of client-specific information in the auditors' response and observation of the KAM is negatively associated with audit risks, reflecting lower detection risks.

The association between auditors' disclosure of client-specific information in the full KAM and audit risks corresponds to the joint effect of the relations between the two KAM components and audit risks. Based on the first two hypotheses, we expect an opposite association between the two components of KAM disclosures and audit risks. If client-specific information in KAMs mainly reflects inherent and control risks, we will observe a positive association between client-specific information in KAMs and audit risks. On the contrary, if such disclosures mainly reflect detection risk, we will observe a negative association between client-specific information in KAMs and audit risks. Based on these conflicting arguments, it is an empirical question whether and how auditors' disclosure of client-specific information in the full KAMs is related to audit risks. We, therefore, state our hypothesis in a non-directional form as follows:

H3: Auditors' disclosure of client-specific information in full KAMs is associated with audit risks.

We capture client-specific information in KAMs with dissimilarity measures. We compare KAMs among industry peers facing the same type of risk per fiscal year. However, if KAMs are boilerplate as critics feared (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013), there will not be enough variations in our dissimilarity measures. In this case, we will not find any significant association between auditors' disclosure of client-specific information in KAMs and audit risk. We explain our dissimilarity measures in the next section.

3. KAM Dissimilarity Measures and Sample Selection

3.1. KAM Dissimilarity Measures

We model KAM dissimilarity using the cosine similarity score (CSS). CSS has already been used in the accounting literature to examine the similarity of various documents. For example, CSS is used to analyze the narrative differences in MD&A (Management Discussion and Analysis) of annual reports from one year to another (S. V. Brown & Tucker, 2011), accounting policy footnotes in 10-K filings (Peterson et al., 2015) or the text of annual reports in a cross-cultural study (Lang & Stice-Lawrence, 2015). CSS is also used to examine compatibility among peers based on the similarity of the company business description, MD&A, and financial statement footnotes (S. V. Brown & Knechel, 2016). However, the auditing literature examining the similarity of KAMs is still sparse (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021).

Measures of similarity compare pairs of documents after converting the text into numerical values to allow a comparison based on an algorithm. We aim to capture client-specific information in KAMs compared to industry peers facing the same type of risks per fiscal year. To this end, we pair KAMs based on their topic at the industry-year level. We determine industry classification based on the SIC-1-digit codes.[17] We allocate each KAM to a topic based on the words used in its title. To determine the different topics, we follow prior literature on KAMs and the categories from the Audit Analytics Europe database. When the KAM title is not informative enough to allocate it to a topic, we read the KAM description to ensure the right allocation of the KAM.

[17] We chose the SIC industry classification as it is the most widely used in the accounting literature. We focus on SIC-1 digit as there is a tradeoff between the number of KAM topics and the industry classification chosen. As the groups gain granularity, they also become smaller, which hinders the comparability of a sufficient number of KAMs.

We ensure that there are at least five observations from different firms in each group at the topic-industry-year level. This step enables us to have a minimum benchmark when comparing each KAM with its industry peers. Contrary to prior literature, we do not consider KAMs, which are unique to a topic-industry-year (Burke et al., 2022; Chen, Nelson, et al., 2020), and KAMs pertaining to groups with less than five industry peers (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021). Note that firms have on average three KAMs, so removing a KAM does not necessarily result in removing the firm-year observation from our sample.

Some firms have several KAMs with the same topic. For example, firms can have several KAMs with the topic "Revenue recognition" as auditors can choose to separate KAMs that relate to different accounts although they are part of the same type of risk. As we compute the dissimilarity scores, we ensure there is only one KAM for the firm analyzed in the sub-group at the topic-industry-year level. We alternatively compute the dissimilarity for each duplicated KAM topic per firm separately to control for differences in the firm underlying risks. This results in having a slightly different sub-group when computing the similarity scores.[18] Our measure goes beyond the similarity scores used in prior literature (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021) and enables comparing industry peers facing the same type of risks.

Following prior literature, we get a similarity score for each pair, and we average all the pairs formed per KAM to get a measure at the KAM level (e.g., S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). We then average the scores obtained per firm to get a measure at the firm-year level, and we adjust the scores for document length as in S. V. Brown and

[18] As we average the scores at the firm level, the results are similar when we compute the similarity scores keeping all the KAMs. However, we believe that if several KAMs are written for the same firm, they relate to different inherent risks although they have similar topics, otherwise, auditors would have written only one KAM. Consequently, the groups are slightly different for each KAM having duplicated topics per firm.

Tucker (2011). The dissimilarity variables equal one minus the similarity score. Higher scores represent greater dissimilarity. I provide a detailed explanation of the methodology to compute the dissimilarity variables in the general introduction of the Thesis (section 3, page 16).

3.2. Sample Selection

We focus on premium listed firms on the LSE since they were the first to implement KAM disclosures. This setting enables us to have the longest sample period possible (2013-2019) to retrieve annual reports.[19]

Table 2 – 1 Panel A presents the sample selection process. We start with 4,594 premium listed firm-year observations on the LSE, from 823 unique firms. We remove firms in the financial industry (SIC 6000-6900) because their risks are different from non-financial firms (2,602 firm-year observations). We further eliminate observations with missing annual reports, with no KAM (61 firm-year observations), and missing control variables (80 firm-year observations). Our final sample consists of 1,851 firm-year observations from 337 unique firms.

The distribution of firms and KAMs per year is presented in Table 2 – 1 Panel B. We manually hand-collect KAMs from audit reports and split each KAM into two components: (a) the risk description, and (b) the response and observation. We ensure there is at least a KAM from five different firms in each topic, industry, and year sub-group to have a minimum benchmark to compare firms with. We collect 6,060 KAMs from 1,851 non-financial firm-year observations.

[Insert Table 2 – 1 here]

Table 2 – 1 Panel C provides the distribution of KAM topics. We identified 17 categories of KAMs with the most frequent KAMs being "Revenue recognition" (18.28%) and "Valuation

[19] We used web scrapping technique on three websites to retrieve the annual reports: annualreport.com, data.fca.org.uk, and Capital IQ. We also manually downloaded missing annual reports on the firms' websites.

of intangible assets" (17.79%). Our KAM topic allocation is representative and consistent with the major risks reported by auditors following ISA701 in Europe (Dixon, 2020).

4. Empirical Results

4.1. Descriptive Statistics

Table 2 – 2 reports the descriptive statistics in Panel A and the correlation matrix in Panel B for our main variables. KAMs are dissimilar relative to industry peers with an average (median) of 1.000 (1.006) for *DESCR_DISSIMILARITY*, 0.999 (1.001) for *RESP_DISSIMILARITY*, and 0.998 (1.000) for *KAM_DISSIMILARITY*.[20,21] There are small variations among the dissimilarity scores with standard deviations of 0.051, 0.047, and 0.058 respectively. On average, the response and observation of the KAM is longer than the risk description as the *LENGTH_RATIO* has a mean (median) of 0.596 (0.588). Auditors report on average three KAMs, with a minimum of one and a maximum of nine KAMs.

[Insert Table 2 – 2 here]

Premium listed firms on the LSE are large firms with low profitability (the average *ROA* is 0.055), but only 14.7% of firm-year observations have a loss throughout our sample period. The average growth rate is 7% and 15.9% of the firm-year observations reported small profits during the sample period. Most of the firms have foreign operations (80.8%) and report special items (94.1%). On average, inventory and receivables represent 27% of the total assets (mean of *INVREC*), and the firms in our sample are mostly financed through debt (the mean of *LEVERAGE* is 0.580).

The natural logarithm of audit fees is on average 13.383 with a standard deviation of 1.332, which corresponds to an average audit fee of 1.864 million GBP. As expected, most of

[20] Our dissimilarity scores are adjusted for KAM length and therefore do not range from 0 to 1. A higher score denotes a more dissimilar KAM and therefore more client-specific information.
[21] We omit time and firm subscripts when mentioning variables for ease of exposition.

the firms are audited by a Big 4 (93.4%) and 44% of the firms do not have a fiscal year-end in December (the mean of the variable *BUSY* is 56%). Only 17.2% of the firm-year observations have switched audit firms within the past two years (mean of the variable *INITIAL)*, and on average audit fees paid to the audit firm in a given industry-year represent 19.3% of all the audit fees received by that audit firm (mean of the variable *ISP*).

The correlation matrix reports Pearson's correlation coefficients in the lower-triangular cells and Spearman's rank correlation in the upper-triangular cells. Not surprisingly, the three dissimilarity scores are highly correlated among themselves. Audit fees are negatively correlated with the three dissimilarity measures, but the correlation coefficients are small and not significant. Consistent with prior literature, audit fees are positively and significantly correlated with the length of KAM disclosures and the number of KAMs (e.g., Al-mulla & Bradbury, 2022; Rousseau & Zehms, 2022). Most of the correlation coefficients are low (below 30%). *MTB* and *ROA* are moderately correlated, as well as non-audit fees with audit fees and with firm size. *ROA* and *LOSS* are naturally highly correlated.[22]

4.2. Main Results

In this section, we examine the relationship between KAM dissimilarity and audit fees. The variables of interest are the dissimilarity measures, which alternatively capture auditors' disclosure of client-specific information in the two KAM components and the full KAM disclosures. The dependent variable in these regressions is the natural logarithm of audit fees (*AFEES*), a proxy for audit risk. We estimate the following OLS regression:

[22] In untabulated tests, we run the regressions without the loss dummy and results are qualitatively similar. The Variance Inflation Factor (VIF) show that all the coefficients are below the threshold of 10, with the highest coefficient being 2.46 for *ROA*. We do not find evidence that our inferences are affected by multicollinearity problems.

$$
\begin{aligned}
AFEES_{i,t} = \beta_0 + \beta_1 DISSIMILARITY_{i,t} + \beta_2 LENGTH_{i,t} + \beta_3 NB\_KAM_{i,t} \\
+ \beta_4 SIZE_{i,t} + \beta_5 ROA_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 INVREC_{i,t} \\
+ \beta_8 FOREIGN\_OPERATIONS_{i,t} + \beta_9 LEVERAGE_{i,t} \\
+ \beta_{10} GROWTH_{i,t} + \beta_{11} MTB_{i,t} + \beta_{12} SPECITEMS_{i,t} \\
+ \beta_{13} MERGER_{i,t} + \beta_{14} PENSION_{i,t} + \beta_{15} ABS\_TACC_{i,t} \\
+ \beta_{16} SMALL\_PROFITS_{i,t} + \beta_{17} RETURN_{i,t} + \beta_{18} ISP_{i,t} \\
+ \beta_{19} BUSY_{i,t} + \beta_{20} INITIAL_{i,t} + \beta_{21} NASFEES_{i,t} \\
+ Industry, year\ and\ audit\ firm\ fixed\ effects + \varepsilon_{i,t}
\end{aligned}
\tag{1}
$$

We first estimate the model by separating the two KAM components: (a) the risk description (*DESCR_DISSIMILARITY*) to test H1, and (b) the response and observation (*RESP_DISSIMILARITY*) to test H2. We then examine the full KAM dissimilarity measure (*KAM_DISSIMILARITY*) as the independent variable to test hypothesis H3. In the first model testing H1 and H2, *LENGTH_RATIO* is the ratio of the length of the response and observation over the length of the entire KAM disclosure.[23] In the second model testing H3, *KAM_LENGTH* is introduced to control for the length of the full KAM disclosures. Although our dissimilarity scores are adjusted for the length of the disclosure, we control for document length since audit fees are increasing in the length of KAM disclosures (Chen, Nelson, et al., 2020). We also control for the number of KAMs disclosed per firm (*NB_KAM*) as it is positively associated with audit fees (Al-mulla & Bradbury, 2022).

Following prior literature on the audit fee model (e.g., Hay et al., 2006; Simunic, 1980) and audit risk (e.g., Cassell et al., 2011; Hogan & Wilkins, 2008; Niemi et al., 2018), we control for client and auditor characteristics that have been shown to impact the level of audit fees. The control variables include client firm size (*SIZE*), profitability (*LOSS*), performance (*ROA*), and leverage (*LEVERAGE*). We also control for client firm complexity with the level of inventories

[23] Our results remain qualitatively similar if we include *KAM_LENGTH* in the first model. We did not include this variable in the first regression as we wanted to control for the differences in length between the two components of the KAM. Moreover, our dissimilarity scores are adjusted for the length of the disclosure, which undermines the need to further control for *KAM_LENGTH* in the model.

and receivables (*INVREC*), and with a series of dummies whether the firm engages in foreign operations (*FOREIGN_OPERATIONS*), whether it reports special items (*SPECITEMS*), whether it engaged in merger or acquisition activities during the year (*MERGER*), and for pension or retirement plans (*PENSION*). We further include growth opportunities, captured by the percentage sales growth (*GROWTH*), the market-to-book ratio (*MTB*), and annual returns (*RETURN*). We control for financial reporting quality with the absolute value of total accruals, capturing the room managers have to engage in earnings management (*ABS_TACC*) and the propensity to report small profits (*SMALL_PROFITS*). Regarding audit firm characteristics, we control for engagements with a fiscal year-end in December, representing the audit busy season (*BUSY*), auditor industry specialists based on portfolio shares (*ISP*), and the level of non-audit service fees (*NASFEES*). We also include a dummy of whether the auditor is in the first two years of the audit engagement (*INITIAL*).

We include year, industry, and audit firm fixed effects to account for unobservable differences over the years, among industry peers and audit firms.[24] Finally, we cluster standard errors by audit firms to control for potential correlation among audit firms. We winsorize all the continuous variables at the 1st and 99th percentiles to remove outliers. All the variables are defined in Appendix 2 - 2.

Table 2 – 3 displays the regression results of the main analysis between KAM dissimilarities and audit fees. Column (1) tabulates the regression results of the two KAM components, *DESCR_DISSIMILARITY* and *RESP_DISSIMILARITY*. Column (2) shows results with the full KAM disclosures as the independent variable (*KAM_DISSIMILARITY).*[25]

[24] Note that we do not include firm fixed effects as firms have similar inherent risks from one year to another and we should not expect changes from one year to another. However, we include industry fixed effects to control for systemic differences in risk and performance across sector types. We also do not include a Big 4 dummy to avoid multicollinearity issues with the audit firm fixed effects. Our results are similar when including a Big 4 dummy.
[25] In untabulated results, we ran the regressions with lagged values of KAM dissimilarity, to prevent concerns for reverse causality. Results are qualitatively similar when using lagged values of KAMs, suggesting that there is an association on the current year audit fees, but also on the following year.

The coefficients of *DESCR_DISSIMILARITY* and *RESP_DISSIMILARITY* are both statistically significant at the 1% level, with opposite signs supporting our hypotheses H1 and H2. These coefficients equal 0.901 and -1.721, respectively. These results are also economically significant. A one standard deviation increase in *DESCR_DISSIMILARITY* results in a 4.99% increase in audit fees.[26] A one standard deviation increase in *RESP_DISSIMILARITY* results in a 7.77% decrease in audit fees.[27] Considering the economic magnitude of the coefficients, these results show that dissimilarity in the response and observation of the KAM results in a greater decrease in audit fees compared to the increase resulting from the dissimilarity in the risk description part.

In Column (2), we examine the full KAM disclosure, which represents the joint effect of the two KAM components. The coefficient of *KAM_DISSIMILARITY* is negative and significantly associated with audit fees (coefficient of -0.792 significant at the 5% level). The association is not only statistically, but also economically significant. A one standard deviation increase in *KAM_DISSIMILARITY* results in a 4.49% decrease in audit fees.[28] This finding is consistent with our third hypothesis stating that there is an association between auditors' disclosure of client-specific information in KAMs and audit risks.

Dissimilarity in the risk description of the KAM is associated with higher audit fees, suggesting greater inherent and control risks. However, dissimilarity in the response and observation is associated with lower audit fees, suggesting lower detection risks. The economic magnitude is greater for dissimilarity in the response component compared to the one in the risk description. This explains our finding in the full KAM suggesting that auditors' disclosure of client-specific information in KAMs is associated with audit risks, via lower audit fees. Our

[26] The standard deviation of *DESCR_DISSIMILARITY* is 0.051, and $e^{(0.901 \times 0.054)}-1=0.0499$.
[27] The standard deviation of *RESP_DISSIMILARITY* is 0.047, and $e^{(-1.721 \times 0.047)}-1=-0.0777$.
[28] The standard deviation of *KAM_DISSIMILARITY* is 0.058, and $e^{(-0.792 \times 0.058)}-1=-0.0449$.

results suggest that client-specific information in KAMs mainly reflects audit procedures performed to address and alleviate audit risk.

[Insert Table 2 – 3 here]

Turning now to the control variables, the coefficient of *LENGTH_RATIO* is negative but not significant (Column (1)), while the coefficient of *KAM_LENGTH* is positive and significant (Column (2)). The coefficients of *NB_KAM* are positive and significant in the two regressions and these results are consistent with prior literature (e.g., Al-mulla & Bradbury, 2022; Chen, Nelson, et al., 2020). All other control variables with significant coefficients have the expected sign. In particular, we find that the coefficients of client firm size, complexity (*INVREC, FOREIGN_OPERATIONS, MERGER*), and leverage are positive and statistically significant. Profitable client firms (*ROA*) and those with growth opportunities (*GROWTH*) have lower audit fees. Client firms audited during the busy season and the level of non-audit fees are both positively associated with audit fees.

5. Additional Analyses

In this section, we perform several cross-sectional tests to enhance our main inferences. We identify settings where we expect the relationship between auditors' disclosure of client-specific information and audit risks to be stronger. We, therefore, examine cross-sections based on KAM, client, and audit firm characteristics. We then examine the association between client-specific information in KAMs and audit quality and audit effort to enhance the distinction between audit risk and audit effort and quality in our setting.

5.1. Cross-Sectional Tests Based on KAM Characteristics

We examine two KAM characteristics: new and infrequent KAM topics. We expect auditors to better identify risks that are more frequent but to exercise more professional judgment when auditing new risks or risks that are not frequent. Auditors perform additional

audit procedures to feel comfortable about the audit process when auditing riskier clients (e.g., Guénin-Paracini et al., 2014; Pentland, 1993). We expect the relationship between auditors' disclosure of client-specific information and audit risks to be stronger when KAM topics are new and infrequent, likely to be perceived riskier by auditors.

We first partition the sample based on firms having more than half of their KAMs as new (*NEW_TOPIC* >= 0.5).[29] New KAMs are defined as topics that have not previously been disclosed for each firm *i* in any previous year since the mandatory adoption of KAMs. Next, we partition the sample based on firms having most of their KAM topics as infrequent (*INFREQUENT_TOPIC* >= 0.5).[30] We define infrequent topics as topics different from the two most frequent KAMs ("Revenue recognition" and "Valuation of intangible assets").

Table 2 – 4 Panels A and B report the results of these regressions. In Panel A, all our KAM dissimilarity measures are significant and consistent with the main analysis (Table 2 – 3). Our results are stronger in the sub-sample having more than half of their KAMs as new (Columns (1) and (2) Panel A). The difference in the coefficients between the two subsamples is statistically significant at the 1% level for both KAM components (respectively 0.682 and -1.303 for *DESCR_DISSIMILARITY* and *RESP_DISSIMILARITY*). In Panel B, the relationship between *KAM_DISSIMILARITY* and audit fees is also stronger when the topics are less frequent. The difference in the coefficients equals -0.738 and is statistically significant at the 10% level. However, the coefficients for *DESCR_DISSIMILARITY* and *RESP_DISSIMILARITY* in the subsample with a majority of infrequent KAM topics are not statistically significant. Similarly,

[29] In untabulated results, we also divide the sample into firms having at least one new KAM versus firms without any new KAM topic. Our results are qualitatively similar.

[30] In untabulated results, we also divide the sample into firms having at least one frequent KAM versus firms without any frequent KAM topic. Our results are in line with the ones reported, but the difference in coefficients for *KAM_DISSIMILARITY* is not significant.

the differences in the coefficients for the two KAM components between the frequent and infrequent topics subsamples are not statistically significant.

[Insert Table 2 – 4 here]

These results suggest that the association between auditors' disclosure of client-specific information in KAMs and audit risks is stronger when auditors report new and infrequent KAM topics. Reporting new and infrequent KAM topics is perceived as riskier by auditors. Therefore, they exercise more professional judgment and increase testing to feel comfortable about the audit process and to reduce detection risk.

5.2. Cross-Sectional Tests Based on Client Firm Characteristics

We focus next on cross-sectional tests based on client firms' characteristics. We first divide the sample based on industry litigation risks. Writing KAMs could be challenging for auditors because it may increase auditors' liability when they disclose additional procedures performed in response to higher risks identified (Gimbar et al., 2015). Moreover, disclosing client-specific KAMs may increase the likelihood of auditors being inspected. To avoid litigation risks arising from client-specific disclosures, we expect the association between auditors' disclosure of client-specific information and audit risks to be stronger when auditors face lower litigation risks.

We follow J. Francis, Philbrick, and Schipper (1994) and define industries with high litigation risks based on 2-digit SIC codes. We also follow Kim and Skinner (2012, Table 2 Panel A p. 297) and include industries with a litigation rate equal to or above 2.7%. Table 2 – 5 Panel A tabulates the results of the cross-sectional tests based on industry litigation risks. We find that the coefficient of *DESCR_DISSIMILARITY* is only significant in the subsample with high industry litigation. However, the coefficients for the two other measures, *RESP_DISSIMILARITY*, and *KAM_DISSIMILARITY* are significant at the 1% level only for

firms in low litigation industries. Only the difference in coefficients for *KAM_DISSIMILARITY* between the two subsamples is significant at the 1% level and equals -1.264. These results are consistent with our expectations and with prior literature (Gimbar et al., 2015). Auditors avoid disclosing client-specific information about the audit procedures performed when facing high litigation risks, to reduce their liability in case of litigation.

[Insert Table 2 – 5 here]

We next partition our sample based on ROA, a proxy for firm performance, and we also examine CEO's compensation score linked to total shareholder return. Anecdotal evidence suggests that auditors are more skeptical when auditing profitable firms if managers' compensation is related to the firm's performance. Premium listed firms in the United Kingdom follow the UK Corporate Governance Code stating that directors' remuneration should be designed to promote the long-term success of the firm and be performance-related (FRC, 2016b). Because auditors are more likely to exercise more professional judgment to audit profitable firms and firms with a lower CEO compensation score, we expect our results to be stronger for these firms.[31]

Table 2 – 5 Panels B and C tabulate these cross-sectional tests. We find results consistent with our expectations. Results are stronger in the subsample of firms with greater *ROA* (Columns (1) and (2) Panel B) and with lower CEO compensation scores (Columns (1) and (2) Panel C). In Panel B, the differences in coefficients for *RESP_DISSIMILARITY* and *KAM_DISSIMILARITY* are significant at the 1% level, and respectively equal to -2.257 and - 1.292. In Panel C, the differences in coefficients for *DESCR_DISSIMILARITY* and *RESP_DISSIMILARITY* are both significant, and respectively equal to 1.291 (significance level

[31] We also partition the sample into loss-making and profit-making firms. Untabultated results are qualitatively similar.

of 5%) and -1.547 (significant at the 10% level). Moreover, the dissimilarity scores are significant only in the subsample with lower CEO compensation scores.

These results are consistent with auditors disclosing more client-specific audit procedures reducing detection risks and the overall level of audit risks when firms are performing well. In addition, auditors disclose more client-specific information in KAMs reflecting both greater inherent and control risks and lower detection risks when CEOs are less transparent about the link of their compensation with shareholders' returns.

5.3. Cross-Sectional Tests Based on Audit Firm Characteristics

Finally, we partition the sample based on audit firm characteristics. We first split our sample based on auditor industry specialization. Audit firm industry specialists have more knowledge about industry-specific risks (L. Y. Lu et al., 2017). They are more likely to detect industry-specific risks as well as to provide adapted procedures to the identified risks. We expect our results to be stronger in the subsample with more audit firm industry specialists. We define auditor industry specialization based on the portfolio share method, which is the ratio of all audit fees received by a given audit firm in a given industry-year to the sum of all audit fees paid to that audit firm (Audousset-Coulier et al., 2016).

Table 2 – 6 Panel A tabulates the results of these regressions. Consistent with our expectations, the results are stronger in the sub-sample with audit firm industry specialists, especially for the risk description of the KAM. We find that the difference in the coefficients for *DESCR_DISSIMILARITY* is statistically significant between the two sub-samples at the 10% level and equals 0.366.

[Insert Table 2 – 6 here]

Finally, we partition the sample based on audit firm tenure (three years) following J. R. Francis and Yu (2009). Long auditor tenure is more likely to bias auditor independence and to

make auditors align with management (Arruñada & Paz-Ares, 1997; Hoyle, 1978; Johnson et al., 2002a). In this case, we expect auditors to disclose less client-specific information that could hinder their auditor-client relationship. We, therefore, expect our results to be stronger for audit firms with shorter tenure.

Table 2 – 6 Panel B reports the results of this cross-sectional test. The coefficient of *KAM_DISSIMILARITY* is significant only in the subsample with lower auditor tenure. The difference in the coefficients between the two subsamples is statistically significant at the 1% level and equals -1.246 for the full KAM disclosure. The differences in the coefficients of the other KAM dissimilarity measures are not significant.

Overall, these results show that when auditors have more knowledge about their clients, the relationship between KAM dissimilarity and audit fees is stronger. This is especially the case for the risk description of the KAM as auditors can better identify the audit risks of their clients. However, longer auditor tenure can also bias auditor independence and prevent auditors to disclose client-specific information in KAMs.

5.4. Additional Analyses Regarding Audit Quality and Audit Effort

In this section, we examine the association between client-specific information in KAMs and audit quality and audit effort. Using different proxies of audit quality and audit effort enables us to further validate our main findings related to audit risk. Audit quality is influenced by auditors' risk assessment (Knechel, Krishnan, Pevzner, Shefchik, & Velury, 2013). We expect greater dissimilarity in the risk description part, reflecting greater inherent and control risks before any procedures are performed, to be associated with lower audit quality and audit effort. On the other hand, we expect greater client-specific information in the response of the KAM reflecting the audit procedures performed to be associated with higher audit quality and audit effort.

We alternatively use four proxies of audit quality and two of audit effort. Using several audit quality proxies is important as each measure provides complementary insights regarding audit quality (Aobdia, 2019). We examine three proxies of earnings management: the absolute value of discretionary accruals following Dechow and Dichev (2002) (*ABS_DACC*), the propensity of managers to report small profits (*SMALL_PROFITS*) and to report small earnings increases (*SMALL_EARNINGS_INCR*). The fourth audit quality proxy we use is a dummy variable for new clients (*NEW_CLIENTS*). Greater earnings management and auditing new clients are both associated with lower audit quality (e.g. Aobdia, 2019). As audit effort is not directly observable, we use audit report lag as a proxy for audit effort (Knechel & Payne, 2001). We use the natural logarithm of the number of days between the fiscal year-end and the audit report date (*REPORT_LAG*) and alternatively the earnings announcement date (*EARNINGS_LAG*) (Glover, Hansen, & Seidel, 2021; Ranasinghe et al., 2022).

Table 2 – 7 Panels A and B report the results of the audit quality and audit effort analyses respectively. In Panel A, we find that *DESCR_DISSIMILARITY* is positively associated with *SMALL_PROFITS* and *NEW_CLIENTS*. On the other hand, *RESP_DISSIMILARITY* is negatively associated with *SMALL_EARNINGS_INCR* and *NEW_CLIENTS*. Similarly, *KAM_DISSIMILARITY* is negatively associated with *ABS_DACC* and *SMALL_EARNINGS_INCR*, suggesting lower earnings management. In Panel B, we find a positive association between *KAM_DISSIMILARITY* and both audit effort proxies. Moreover, *RESP_DISSIMILARITY* is also positively associated with *REPORT_LAG*.

[Insert Table 2 – 7 here]

Overall, our results suggest that auditors charge an audit risk premium, consistent with the findings of Ranasinghe et al. (2022). These results support our main findings and suggest that client-specific information in KAMs is associated with lower audit risks while being associated with higher audit quality and audit effort.

6. Robustness Tests

We perform several robustness tests to ensure our results are not driven by research design choices. First, we use alternative measures of dissimilarity. Second, we use two alternative dependent variables: total fees, and CEO's compensation score linked to shareholders' returns. Third, we examine the unexpected auditors' response to the risk identified to alleviate concerns about multi-collinearity issues between the two KAM dissimilarity variables. Fourth, we examine different sample periods. For brevity reasons, we do not tabulate the robustness tests.

6.1. Alternative Measures of Dissimilarity

6.1.1. Jaccard Dissimilarity

We use an alternative measure of dissimilarity, based on the Jaccard methodology. Jaccard similarity is used to compute similarities between two sample sets, where sets represent each unique word appearing in the pair of KAMs. Jaccard similarity is different from cosine similarity as it does not consider the frequency of each word but rather focuses on the occurrence of the words in both documents. The Jaccard similarity is the ratio of the number of common words in both documents (size of the intersection of the sample sets) divided by the number of unique words appearing in both documents (size of the union of the sample sets). We obtain the dissimilarity scores by doing one minus the similarity scores. Similar to our main measures, we argue that greater dissimilarity scores capture client-specific information disclosed in KAMs. The untabulated results are qualitatively similar to our main findings reported in Table 2 – 3. The three KAM dissimilarity measures are both statistically and economically significantly associated with audit fees.

6.1.2. Cosine Similarity Score by Concatenating KAMs

We also modify our KAM dissimilarity measures based on the Cosine Similarity Scores (CSS). We initially compute the CSS between each pair at the topic-industry-year level and averaged all the pairs to get a score at the KAM level. To have only one pair per KAM and to improve granularity by removing one level of averaging at the KAM level, we concatenate the text of all the KAMs of industry peers with the same KAM topic per year. Our untabulated results are similar to our main findings in Table 2 – 3 with one exception. The coefficient for *DESCR_DISSMILARITY* is positive but no longer significant.

6.2. Alternative Dependent Variables

6.2.1. Total Fees

We also use the total audit fees paid to auditors as an alternative measure of audit fees. Total fees represent fees paid for the audit services and non-audit services (which are audit-related fees, tax fees, and all other fees paid to the auditor). The untabulated results are qualitatively similar to our main findings reported in Table 2 – 3.

6.2.2. CEO Compensation Score

We alternatively use the CEO compensation score linked to shareholders' returns as the dependent variable. Prior literature finds a significant association between executive compensation and audit fees, suggesting higher audit risk (e.g., Kannan, Skantz, & Higgs, 2014; Sharma, Ananthanarayanan, & Litt, 2021; Vafeas & Waegelein, 2007). We find that only the coefficient of *RESP_DISSIMILARITY*, equal to -0.388, is statistically significant at the 5% level. This result confirms our finding that client-specific information in the auditors' response reflects lower detection risks.

6.3. Unexpected Auditors' Response

Auditors perform procedures based on the risk they identify during the audit process. In this robustness test, we orthogonalize the dissimilarity in the two KAM components to alleviate concerns about multi-collinearity issues. By regressing *DESCR_DISSIMILARITY* on *RESP_DISSIMILARITY* and taking the residuals, we get a score representing the unexpected client-specific information in the response component of the KAM. In untabulated analysis, we find that the coefficient of this orthogonalized variable equals -1.775 and is significant at the 1% level. The coefficient for *DESCR_DISSIMILARITY* is no longer significant. This analysis confirms our main finding that client-specific information in the auditors' response component of the KAM is associated with lower detection risks.

6.4. Learning Effect

KAMs have first been implemented for premium listed firms on the LSE in 2013, before being implemented in Europe, and for firms on the main LSE market in 2016 (FRC, 2013b; IAASB, 2015). Auditors have discretion in applying the new KAM disclosure requirement (Abdullatif & Al-Rahahleh, 2020). We perform our main analysis on different sample periods to ensure our results are not driven by the early adoption of KAMs. We first remove firm-year observations in 2013, the first year of KAM implementation. Second, we examine two subsamples from 2013 to 2015, then from 2016 to 2019, before and after the implementation of KAMs to all listed entities. Our results are qualitatively similar in the two periods with the exception that the coefficient of the variable *KAM_DISSIMILARITY* is no longer significant in the subsample from 2013 to 2015 (untabulated). This suggests that there is no learning effect as the results are similar when removing the first year of KAM implementation and for the two subsamples.

7. Conclusion

This paper investigates whether and how auditors' disclosure of client-specific information in KAMs is related to audit risks. We capture auditors' disclosure of client-specific information with KAM dissimilarity measures. Following prior literature, we use audit fees as a proxy for audit risk (Cassell et al., 2011; Hay et al., 2006; Hogan & Wilkins, 2008; Simunic, 1980). We decompose and link both KAM components with the components of audit risk: (a) the risk description captures inherent and control risks, and (b) the auditors' response and observation captures detection risks.

Using a sample of UK premium listed firms on the LSE from 2013 to 2019, we find significant and opposite associations for both KAM components. Client-specific information in the risk description of the KAM is positively associated with audit risks, suggesting greater inherent and control risks. On the other hand, client-specific information in the response and observation of the KAM is negatively associated with audit risks, suggesting a reduction in detection risks. This result has a greater magnitude compared to the one for the risk description explaining the negative association between client-specific information in the full KAM disclosures and audit risks. In additional analyses, we further show that client-specific information in the auditors' response and observation and the full KAM is associated with higher audit quality and greater audit effort. Our findings suggest that the reduction in audit risks by lowering audit fees is greater than the costs of audit effort and audit quality that would increase audit fees. This is consistent with auditors charging an audit risk premium (Ranasinghe et al., 2022).

This paper is of interest to researchers as it provides evidence that higher audit fees are not necessarily attributable to higher audit quality and audit effort (DeFond & Zhang, 2014; Ranasinghe et al., 2022). This paper further highlights the importance to use several proxies for audit quality and future research should be cautious when using audit fees as a proxy for audit

quality. The KAM setting enables us to decompose audit risk into its components and to provide evidence that auditors charge audit risk premiums.

We believe this paper is also of interest to regulators as it provides insights into the content of KAM disclosures for industry peers facing the same type of risks. This paper is also of interest to auditors and managers, as well as users of audit reports in general. We examine and show how client-specific information in KAMs is associated with audit risks. This paper sheds light on the necessity for auditors to write KAMs in their own words, as suggested by the standards (FRC, 2013b).

We highlight the importance of decomposing the two KAM components in further research. Additional research on KAM disclosures related to financial firms is also of interest, as these firms face different risks. Finally, we believe it is worth examining other consequences of KAM dissimilarity, such as market-side analyses, which will be of greater interest to market participants.

We believe our results are generalizable to other settings. The KAM regulation is similar worldwide and the main difference is with Critical Audit Matters (CAMs) in the US. While KAMs refer to risks of material misstatements, CAMs refer to material misstatements (PCAOB, 2017). Auditors are thus more likely to disclose CAMs for matters perceived as riskier and requiring more professional judgment compared to KAMs. We would expect our results to be stronger in the US.

Appendices of Chapter 2

Appendix 2 - 1: Examples of KAMs

We provide examples of two KAMs for illustrative purposes. We manually highlighted similar words in KAMs of the same topic (in this example, “Revenue recognition”) for two firms in the same industry. Words not highlighted are unique to the KAM. We chose the firms Robert Walter PLC (KAM 1) and Hays PLC (KAM 2), which are both in industrial services (SIC-2-digit 73). These two firms provide recruitment and human resources services. These KAMs are written by the same audit firm, Deloitte, by two different audit partners. The two firms have different fiscal year-ends but both KAMs correspond to the 2016 fiscal year. In the first KAM, client-specific information refers to the risk of a provision and of an unbilled service. The procedures include agreeing on a sample of fees not invoiced, and ensuring revenue is recorded in the correct period. In the second example, client-specific information refers to contractual arrangements and the recognition of rewards associated with the underlying agreement. These examples also show how auditors separate the risk description from their response and observation in KAM disclosures.

KAM 1: Robert Walter PLC

Revenue recognition	
Risk description	For permanent placements, which accounted for 17% of the revenue of the Group's recruitment business in 2016 (2015: 17%), the Group's policy (as detailed in the Accounting Policies note) is to record revenue when specific recognition criteria have been met, namely where a candidate accepts a position in writing and a start date is agreed. Accordingly revenue is accrued in respect of permanent placements meeting the above criteria but which remain unbilled. This is discussed by The Report of the Audit and Risk Committee on page 37. A provision is made for placements expected to be cancelled prior to the start date (back-outs) on the basis of past experience. Determining the level of provision required for back-outs involves a significant degree of management judgement. For temporary placements, which accounted for 83% of the revenue of the Group's recruitment business in 2016 (2015: 83%), the Group's policy (as detailed in the Accounting Policies note) is to record revenue as the service is provided. Accordingly revenue is accrued in respect of temporary placements where temporary staff have provided a service but which remain unbilled. This is discussed by The Report of the Audit and Risk Committee on page 37. Whilst the calculation of accrued income for temporary placements is not complex, management judgement is required in determining the amount of accrued income to recognise in respect of placements where it is believed that temporary staff provided the service before year end, but where no timesheet had been received at the year-end date.
How the scope of our audit responded to the risk	In all full scope components, we evaluated the design and implementation of the internal controls in place to ensure that revenue in respect of all permanent placements is recorded in the correct period. In the UK, Australia and Singapore, we performed additional testing to confirm whether these internal controls for permanent placements were operating effectively. Our testing involved agreeing a sample of permanent placement fees earned but not invoiced to written evidence of candidate acceptance, including confirmation of start date. We assessed the level of provision held at the year-end against the average level of back-outs experienced on a monthly basis during the year. We also evaluated the back-outs following the year end. In all full scope locations, we evaluated the design and implementation of the internal controls in place to ensure that revenue in respect of all temporary placements is recorded in the correct period. We reviewed a sample of timesheets received after the year-end date, to ensure that revenue in respect of these were recorded in the correct period. We recalculated the accrued income balance relating to temporary placements, and assessed the cut-off applied to the receipt of post year-end timesheets relating to services provided before year end. Our testing also involved a retrospective review of the dates of timesheets submitted during 2016 which related to 2015. This was done to assess the likely level of accrued income required at 31 December 2016 for 'missing' timesheets.
Key observations	We did not identify any misstatements or significant deficiencies as a result of our audit work. We concluded that the provision for back-outs was conservative, but within an acceptable range compared to actual historical back-outs experienced. We concluded that the revenue for temporary placements during the period was recognised appropriately.

KAM 2: Hays PLC

Risk	**How the scope of our audit responded to the risk**
Revenue recognition The key risks on revenue recognition are: – cut-off where revenue is not recognised in line with Group policy, which is to recognise revenue associated with temporary placements over the period that temporary workers are provided, and permanent placements on the start date; and – the presentation of revenue from temporary placements where Hays acts as a principal and revenue is recognised and presented on a gross rather than a net basis. The risks noted above in relation to revenue are areas that can involve management judgment, therefore they are considered to be significant risks. Refer to the revenue recognition critical accounting judgment in note 3 to the financial statements for further detail.	We have: – assessed the design and implementation and operating effectiveness of key controls around all streams of revenue recognised; – considered the appropriateness and accuracy of any cut-off adjustments processed by considering the start date of permanent placements and the term of a temporary placement with reference to the year end date; – evaluated whether revenue has been recognised in accordance with IAS 18 'Revenue' and with Hays' accounting policy by reviewing details of the Group revenue recognition policy, the application of this, and any significant new contracts; and – confirmed that all material temporary worker contractual arrangements where Hays acts as a principal and maintains the majority of the risk and rewards associated with the underlying agreement have been recognised and presented on a gross revenue basis in the financial statements.

Appendix 2 - 2: Definition of the Variables

Variables	Definition	Source
Dependent Variables		
$AFEES_{i,t}$	Natural logarithm of audit fees for firm *i* during year *t*	Thomson Reuters Eikon
Independent Variables		
$DESCR\_DISSIMILARITY_{i,t}$	Cosine dissimilarity score of the risk description of the KAM controlling for document length for firm *i* during year *t*, measured by regressing the cosine similarity score of the risk description on the first five polynomials of their corresponding length, using a Taylor expansion at 0 following S. V. Brown and Tucker (2011). The dissimilarity score is obtained as 1 minus the similarity score.	Annual Reports
$RESP\_DISSIMILARITY_{i,t}$	Cosine dissimilarity score of the auditor's response and observation of the KAM controlling for document length for firm *i* during year *t*, measured by regressing the cosine similarity score of the auditors' response and observation on the first five polynomials of their corresponding length, using a Taylor expansion at 0 following S. V. Brown and Tucker (2011). The dissimilarity score is obtained as 1 minus the similarity score.	Annual Reports
$KAM\_DISSIMILARITY_{i,t}$	Cosine dissimilarity score of the full-text description of the KAM controlling for KAM length for firm *i* during year *t*, measured by regressing the cosine similarity score on the first five polynomials of KAM length, using a Taylor expansion at 0 following S. V. Brown and Tucker (2011). The dissimilarity score is obtained as 1 minus the similarity score.	Annual Reports
Control Variables		
$LENGTH\_RATIO_{i,t}$	Ratio of the length of the auditor's response and observation divided by the length of the full KAM disclosures for firm *i* during year *t*	Annual Reports
$KAM\_LENGTH_{i,t}$	Natural logarithm of the number of words in the full KAM, after removing stop words, lemmatizing, and stemming the text for firm *i* during year *t*	Annual Reports
$NB\_KAM_{i,t}$	Number of KAMs for firm *i* during year *t*	Annual Reports
$SIZE_{i,t}$	Natural logarithm of total assets for firm *i* during year *t*	Thomson Reuters Eikon
$INVREC_{i,t}$	Inventory and receivables divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
LEVERAGEi,t	Total liabilities divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$ROA_{i,t}$	Net income before extraordinary items divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon

Variables	Definition	Source
$LOSS_{i,t}$	Dummy variable equal to 1 if the net income is negative and 0 otherwise for firm *i* during year *t*	Thomson Reuters Eikon
$FOREIGN\_OPERATIONS_{i,t}$	Dummy variable equal to 1 if firm *i* has foreign revenues in year *t*; 0 otherwise	Thomson Reuters Eikon
$GROWTH_{i,t}$	Percentage sales growth from year *t-1* to year *t* for firm *i*	Thomson Reuters Eikon
$MTB_{i,t}$	Market-to-book ratio, measured as the firm market capitalization divided by total equity for firm *i* during year *t*	Thomson Reuters Eikon
$SPECITEMS_{i,t}$	Dummy variable equal to 1 if the firm *i* has extraordinary items in year *t*; 0 otherwise	Thomson Reuters Eikon
$RETURN_{i,t}$	Percentage of the total stock return over the fiscal year *t* for firm *i*	Thomson Reuters Eikon
$MERGER_{i,t}$	Dummy variable equal to 1 if the firm *i* undertook a merger or acquisition in the fiscal year *t*; 0 otherwise	Thomson Reuters Eikon
$PENSION_{i,t}$	Dummy variable equal to 1 if firm *i* has pension plan or post-retirement plan expenses during year *t*; 0 otherwise	Thomson Reuters Eikon
$ABS\_TACC_{i,t}$	Absolute value of total accruals, measured as net income before extraordinary items minus cash from operating activities, scaled by lagged total assets for firm *i* during year t	Thomson Reuters Eikon
$SMALL\_PROFITS_{i,t}$	Dummy variable equal to 1 if net income before extraordinary items scaled by lagged total assets is comprised between 0 and 3% for firm *i* during year *t*; 0 otherwise	Thomson Reuters Eikon
$ISP_{i,t}$	Auditor industry specialists measured as the portfolio shares for firm *i* during year *t*, which is the ratio of all audit fees received by a given audit firm in a given industry-year to the sum of all audit fees paid to that audit firm during the year following Audousset-Coulier et al. (2016)	Thomson Reuters Eikon
$BUSY_{i,t}$	Dummy variable equal to 1 if the fiscal year-end *t* is in December for firm *i*; 0 otherwise	Thomson Reuters Eikon
$INITIAL_{i,t}$	Dummy variable equal to 1 if the audit firm audits the client firm *i* for two years or less at time *t*; 0 otherwise	Thomson Reuters Eikon, Annual Reports
$NASFEES_{i,t}$	Natural logarithm of non-audit fees, which are the sum of non-audit related fees, tax fees, and all other fees paid to the audit firm for firm *i* during year *t*	Thomson Reuters Eikon
Variables used on cross-sectional tests		
$NEW\_TOPIC_{i,t}$	Dummy equal to 1 if firm *i* has at least half of their KAMs as new at time *t*, which are topics not previously disclosed in any prior year for that firm *i*; 0 otherwise	Annual Reports
$INFREQUENT\_TOPIC_{i,t}$	Dummy equal to 1 if firm *i* has at least half of their KAMs being infrequent at time *t*, which are topics different from the two most frequent KAM topics ("Revenue recognition", and "Valuation of intangible assets"); 0 otherwise	Annual Reports

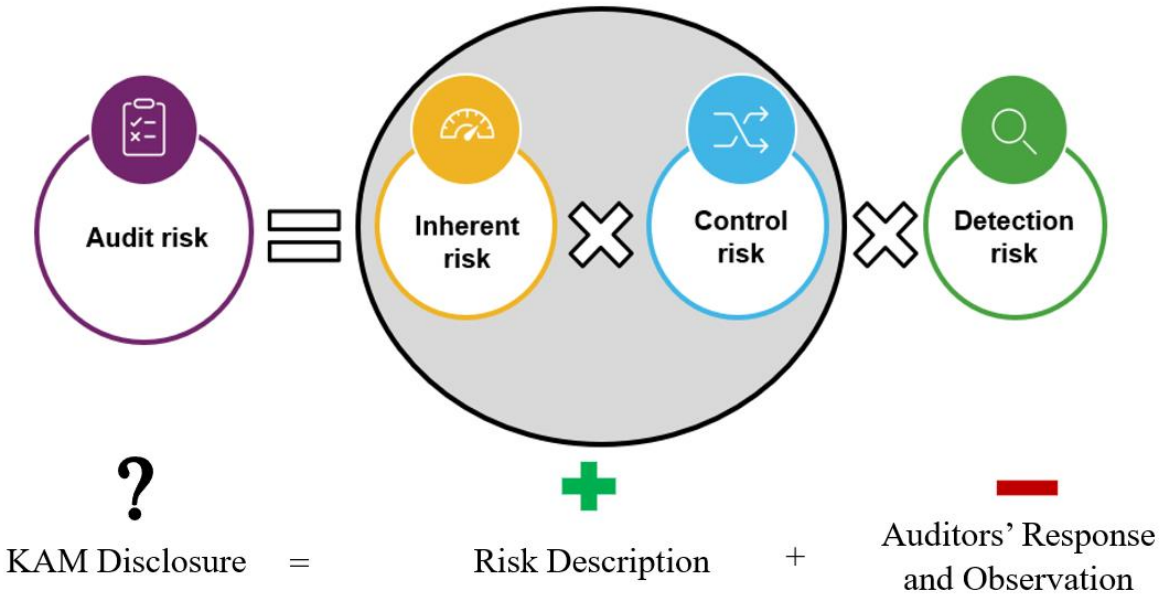
Variables	Definition	Source
$LITIG_{i,t}$	Dummy equal to 1 for firm *i* at time *t* in high litigation industries following Kim and Skinner (2012) and Francis et al. (1994), 0 otherwise. Industries with high litigation risks are identified based on 2-digit SIC codes and are the industries identified by J. Francis et al. (1994) and the industries with a litigation rate equal to or above 2.7% following Kim and Skinner (2012, table 2)	Datastream
$CEO\_COMPENSATION\_SCORE_{i,t}$	ESG score of CEO's compensations linked to total shareholder return for firm *i* during year *t*. The score ranges from 0 to 1 and the higher the score, the greater the ESG performance and the degree of transparency in reporting material ESG data publicly	Thomson Reuters Eikon
$ATENURE_{i,t}$	Audit firm tenure for each client firm *i* at time *t* in years	Thomson Reuters Eikon
Dependent Variables in the Audit Quality and Audit Effort Analyses		
$ABS\_DACC_{i,t}$	Absolute value of discretionary accruals for firm *i* during year *t* measured following Dechow and Dichev (2002) augmented by sales growth and property, plant and equipment (following Aobdia, 2019; J. Francis, LaFond, Olsson, & Schipper, 2005). The discretionary accruals are estimated based on lagged total assets following Ecker, Francis, Olsson, and Schipper (2013) based on 1-digit SIC with at least 10 observations	Thomson Reuters Eikon
$SMALL\_EARNINGS\_INCR_{i,t}$	Dummy variable equal to 1 if the *ROA* change is between 0 and 3% for firm *i* during year *t*. *ROA* is measured as net income before extraordinary items scaled by lagged total; 0 otherwise for firm *i* during year *t*	Thomson Reuters Eikon
$NEW\_CLIENT_{i,t}$	Dummy variable equal to 1 if the auditor-client relationship is in its first year, 0 otherwise for firm *i* during year *t*	Thomson Reuters Eikon, Annual Reports
REPORT_LAG	Natural logarithm of the number of days between the fiscal year-end and the audit report date for firm *i* during year *t*	Thomson Reuters Eikon, Annual Reports
EARNINGS_LAG	Natural logarithm of the number of days between the fiscal year-end and the earnings announcement date for firm *i* during year *t*	Thomson Reuters Eikon, Capital IQ, lse.co.uk

Missing data has been hand collected from annual reports.

Figures of Chapter 2

Figure 2 – 1: Decomposition of KAM Disclosures and Audit Risks

This figure reports the link between the two KAM components and the three components of audit risk. KAM disclosures reflect the overall level of audit risk. We link the KAM components with those of audit risk as follows: (a) the risk description captures both inherent and control risks, and (b) the auditors' response and observation captures detection risks.



Tables of Chapter 2

Table 2 – 1: Sample Selection

Tables of Chapter 2

Table 2 – 1 reports the sample selection process in Panel A, the number of firms and KAMs per year in Panel B, and the distribution of KAM topics in Panel C. The sample consists of 1,851 firm-year observations premium listed on the London Stock Exchange (LSE) from 2013 to 2019. Missing data have been filled with information from annual reports. The remaining missing observations occur when the currency in the annual report is not GBP.

Panel A: Sample Selection Process

Sample period: firms with fiscal year-end after September 30th, 2013 to December 31st, 2019	
Total firm-year observations premium listed on the London Stock Exchange	4,594
(–) Firm-year observations in the financial industry (SIC codes 6000-6900)	-2,602
Total non-financial firm-year observations premium listed on the LSE	**1,992**
(–) Firm-year observations without annual reports or KAMs	-61
Total firm-year observations	**1,931**
(–) Firm-year observations with missing variables	-80
Total firm-year observations	**1,851**

Panel B: Number of Firms and KAMs per Year

Year	Nb Firms	*Percent*	Nb KAMs	*Percent*
2013	130	*7.020*	419	*6.910*
2014	241	*13.020*	853	*14.080*
2015	258	*13.940*	850	*14.030*
2016	287	*15.510*	899	*14.830*
2017	299	*16.150*	921	*15.200*
2018	313	*16.910*	999	*16.480*
2019	323	*17.450*	1,119	*18.470*
Total	1,851	*100*	6,060	*100*

Panel C: Distribution of KAM Topics at the Firm-KAM Level

KAM Topic	Nb of Firm-KAM	*Percent*
Revenue recognition	1,108	*18.280*
Valuation of intangible assets	1,078	*17.790*
Taxation	632	*10.430*
Valuation of liabilities	568	*9.370*
Acquisitions and disposals	523	*8.630*
Valuation of properties	473	*7.800*
Valuation of inventories	426	*7.030*
Pension and other post-employment benefits	415	*6.850*
Related party transactions	185	*3.050*
Internal controls	149	*2.460*
Exceptional items	145	*2.390*
Going concern	89	*1.470*
Development costs	76	*1.250*
Valuation of securities and financial instruments	64	*1.060*
Valuation of loans and receivables	61	*1.010*
Political and economic risks	58	*0.960*
Compliance with Laws and Regulations	10	*0.170*
Total	6,060	*100*

Table 2 – 2: Descriptive Statistics and Correlation Matrix

Table 2 – 2 reports the descriptive statistics in Panel A and the correlation matrix in Panel B. The sample consists of 1,851 firm-year observations premium listed on the LSE from 2013 to 2019. In Panel B, lower-triangular cells report Pearson's correlation coefficients, and upper-triangular cells are Spearman's rank correlation. Variables in bold are significant at the 10% level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2.

Panel A: Descriptive Statistics

	N	Mean	SD	Min	p25	Median	p75	Max
DESCR_DISSIMILARITY$_{i,t}$	1,851	1.000	0.051	0.841	0.971	1.006	1.035	1.102
RESP_DISSIMILARITY$_{i,t}$	1,851	0.999	0.047	0.869	0.969	1.001	1.032	1.104
KAM_DISSIMILARITY$_{i,t}$	1,851	0.998	0.058	0.852	0.958	1.000	1.040	1.130
LENGTH_RATIO$_{i,t}$	1,851	0.596	0.089	0.412	0.537	0.588	0.646	0.880
KAM_LENGTH$_{i,t}$	1,851	4.944	0.433	3.620	4.721	4.973	5.224	5.853
NB_KAM$_{i,t}$	1,851	3.274	1.466	1.000	2.000	3.000	4.000	9.000
AFEES$_{i,t}$	1,851	13.383	1.332	10.800	12.412	13.227	14.170	16.960
SIZE$_{i,t}$	1,851	20.880	1.736	16.832	19.703	20.761	21.994	25.601
INVREC$_{i,t}$	1,851	0.270	0.192	0.010	0.122	0.241	0.368	0.870
ROA$_{i,t}$	1,851	0.055	0.079	-0.231	0.020	0.051	0.090	0.326
GROWTH$_{i,t}$	1,851	0.070	0.175	-0.367	-0.010	0.053	0.130	0.982
MTB$_{i,t}$	1,851	3.410	4.167	-8.925	1.359	2.346	4.309	24.887
FOREIGN_OPERATIONS$_{i,t}$	1,851	0.808	0.394	0.000	1.000	1.000	1.000	1.000
LOSS$_{i,t}$	1,851	0.147	0.355	0.000	0.000	0.000	0.000	1.000
LEVERAGE$_{i,t}$	1,851	0.580	0.219	0.118	0.424	0.566	0.721	1.351
SPECITEMS$_{i,t}$	1,851	0.941	0.235	0.000	1.000	1.000	1.000	1.000
MERGER$_{i,t}$	1,851	0.517	0.500	0.000	0.000	1.000	1.000	1.000
PENSION$_{i,t}$	1,851	0.591	0.492	0.000	0.000	1.000	1.000	1.000
RETURN$_{i,t}$	1,851	0.106	0.371	-0.725	-0.126	0.073	0.303	1.504
ABS_TACC$_{i,t}$	1,851	0.066	0.059	0.002	0.026	0.051	0.088	0.326
SMALL_PROFITS$_{i,t}$	1,851	0.159	0.366	0.000	0.000	0.000	0.000	1.000
ISP$_{i,t}$	1,851	0.193	0.169	0.010	0.084	0.144	0.275	1.000
BUSY$_{i,t}$	1,851	0.560	0.497	0.000	0.000	1.000	1.000	1.000
INITIAL$_{i,t}$	1,851	0.172	0.378	0.000	0.000	0.000	0.000	1.000
NASFEES$_{i,t}$	1,851	10.740	4.287	0.000	10.545	11.964	13.073	15.950
BIG4$_{i,t}$	1,851	0.934	0.249	0.000	1.000	1.000	1.000	1.000
LITIG$_{i,t}$	1,851	0.407	0.491	0.000	0.000	0.000	1.000	1.000
CEO_COMPENSATION_SCORE$_{i,t}$	1,368	0,544	0,202	0,000	0,596	0,601	0,618	0,885
ATENURE$_{i,t}$	1,851	4.742	2.237	1.000	3.000	5.000	6.000	10.000

Panel B: Correlation Matrix

	DESCR_DISSIMILARITY$_{i,t}$	RESP_DISSIMILARITY$_{i,t}$	KAM_DISSIMILARITY$_{i,t}$	LENGTH_RATIO$_{i,t}$	KAM_LENGTH$_{i,t}$	NB_KAM$_{i,t}$	AFEES$_{i,t}$	SIZE$_{i,t}$	INVREC$_{i,t}$	ROA$_{i,t}$	GROWTH$_{i,t}$	MTB$_{i,t}$	FOREIGN_OPERATIONS$_{i,t}$	LOSS$_{i,t}$	LEVERAGE$_{i,t}$	SPECITEMS$_{i,t}$	MERGER$_{i,t}$	PENSION$_{i,t}$	RETURN$_{i,t}$	ABS_TACC$_{i,t}$	SMALL_PROFITS$_{i,t}$	ISP$_{i,t}$	BUSY$_{i,t}$	INITIAL$_{i,t}$	NASFEES$_{i,t}$
DESCR_DISSIMILARITY$_{i,t}$	1.000	**0.737**	**0.864**	**0.096**	**0.048**	0.010	-0.126	-0.014	-0.149	-0.056	0.017	-0.064	-0.116	**0.079**	0.015	**0.047**	-0.144	-0.136	-0.029	**0.161**	**0.041**	0.032	-0.049	-0.006	0.015
RESP_DISSIMILARITY$_{i,t}$	**0.746**	1.000	**0.932**	0.005	-0.040	**0.038**	-0.209	-0.085	-0.074	0.014	**0.066**	-0.011	-0.146	0.030	0.017	**0.056**	-0.160	-0.135	-0.020	**0.107**	0.021	0.004	-0.087	-0.026	-0.028
KAM_DISSIMILARITY$_{i,t}$	**0.881**	**0.928**	1.000	**0.075**	-0.007	**0.040**	-0.196	-0.058	-0.107	-0.009	**0.050**	-0.045	-0.159	**0.051**	0.012	**0.053**	-0.170	-0.136	-0.030	**0.132**	0.022	0.016	-0.101	-0.022	-0.028
LENGTH_RATIO$_{i,t}$	**0.084**	0.033	**0.093**	1.000	-0.198	0.006	-0.011	0.016	-0.029	-0.002	-0.043	-0.019	-0.029	-0.004	-0.010	0.028	0.009	-0.014	0.015	0.030	-0.002	**0.039**	-0.009	0.023	-0.012
KAM_LENGTH$_{i,t}$	**0.055**	-0.025	-0.005	-0.073	1.000	-0.056	**0.200**	**0.184**	-0.131	-0.179	0.014	-0.107	-0.027	**0.162**	**0.046**	-0.052	-0.006	-0.056	-0.085	**0.092**	0.021	-0.051	**0.086**	**0.046**	0.034
NB_KAM$_{i,t}$	0.020	**0.066**	**0.065**	-0.023	-0.034	1.000	**0.386**	**0.359**	-0.128	-0.194	-0.141	-0.043	**0.127**	**0.070**	**0.221**	0.000	**0.222**	**0.119**	-0.104	0.017	**0.151**	**0.167**	-0.034	0.023	**0.269**
AFEES$_{i,t}$	-0.060	-0.157	-0.149	-0.012	**0.183**	**0.409**	1.000	**0.808**	-0.109	-0.190	-0.150	0.025	**0.338**	0.031	**0.305**	-0.115	**0.340**	**0.309**	-0.045	-0.042	**0.102**	**0.066**	**0.230**	**0.042**	**0.566**
SIZE$_{i,t}$	0.034	-0.054	-0.032	0.007	**0.177**	**0.392**	**0.843**	1.000	-0.272	-0.182	-0.094	-0.072	**0.108**	-0.002	**0.282**	-0.084	**0.223**	**0.300**	-0.054	-0.049	**0.125**	**0.081**	**0.117**	**0.046**	**0.556**
INVREC$_{i,t}$	-0.092	-0.030	-0.048	-0.002	-0.106	-0.151	-0.194	-0.268	1.000	**0.224**	**0.076**	**0.170**	-0.026	-0.107	**0.048**	0.029	-0.035	**0.044**	**0.057**	-0.258	-0.118	-0.109	-0.069	0.015	-0.171
ROA$_{i,t}$	-0.048	0.036	0.009	-0.019	-0.150	-0.168	-0.163	-0.145	**0.171**	1.000	**0.186**	**0.457**	-0.051	-0.614	-0.226	0.005	-0.071	-0.001	**0.220**	-0.245	-0.406	-0.067	-0.104	-0.012	-0.163
GROWTH$_{i,t}$	0.012	**0.042**	0.035	-0.017	0.022	-0.105	-0.099	-0.070	0.036	**0.102**	1.000	**0.175**	-0.076	-0.158	-0.125	0.019	0.031	-0.018	**0.251**	-0.005	-0.095	-0.028	-0.034	-0.030	-0.051
MTB$_{i,t}$	-0.019	**0.055**	0.014	0.000	-0.080	-0.023	-0.022	-0.074	**0.077**	**0.329**	**0.089**	1.000	**0.125**	-0.231	**0.149**	-0.015	**0.088**	-0.011	**0.299**	-0.029	-0.205	-0.090	-0.086	0.001	**0.053**
FOREIGN_OPERATIONS$_{i,t}$	-0.097	-0.128	-0.149	-0.027	-0.025	**0.127**	**0.327**	**0.134**	-0.121	-0.073	-0.061	**0.040**	1.000	**0.040**	-0.003	-0.087	**0.199**	**0.159**	-0.022	-0.077	-0.032	**0.098**	**0.088**	**0.041**	**0.224**
LOSS$_{i,t}$	**0.065**	0.025	**0.043**	-0.011	**0.142**	**0.078**	0.029	-0.004	-0.105	-0.631	-0.077	-0.121	**0.040**	1.000	**0.095**	-0.006	-0.052	-0.079	-0.201	**0.329**	-0.181	**0.051**	**0.093**	0.008	**0.074**
LEVERAGE$_{i,t}$	0.009	-0.001	-0.002	-0.017	**0.040**	**0.204**	**0.267**	**0.228**	0.026	-0.134	-0.120	**0.095**	-0.031	**0.094**	1.000	0.009	**0.116**	**0.067**	-0.071	**0.076**	**0.132**	-0.026	-0.002	0.022	**0.235**
SPECITEMS$_{i,t}$	0.032	**0.059**	**0.051**	0.028	-0.044	-0.005	-0.110	-0.080	**0.042**	0.013	0.000	0.013	-0.087	-0.006	0.005	1.000	-0.081	-0.143	-0.001	**0.038**	0.027	-0.013	-0.032	-0.007	-0.034
MERGER$_{i,t}$	-0.119	-0.162	-0.172	-0.009	0.010	**0.220**	**0.321**	**0.217**	-0.125	-0.074	**0.039**	-0.010	**0.199**	-0.052	**0.091**	-0.081	1.000	**0.170**	0.029	-0.059	0.030	-0.011	**0.049**	0.037	**0.220**
PENSION$_{i,t}$	-0.111	-0.139	-0.132	-0.004	-0.046	**0.116**	**0.301**	**0.297**	-0.002	-0.014	-0.038	-0.032	**0.159**	-0.079	**0.067**	-0.143	**0.170**	1.000	**0.050**	-0.215	0.004	**0.042**	**0.057**	0.028	**0.136**
RETURN$_{i,t}$	-0.019	-0.011	-0.014	0.018	-0.097	-0.110	-0.057	-0.065	**0.075**	**0.214**	**0.230**	**0.172**	-0.034	-0.182	-0.078	0.004	-0.003	0.035	1.000	-0.018	-0.056	-0.016	0.027	-0.013	-0.015
ABS_TACC$_{i,t}$	**0.125**	**0.099**	**0.111**	0.018	**0.091**	-0.007	-0.066	-0.084	-0.194	-0.303	**0.089**	0.003	-0.075	**0.393**	**0.100**	**0.039**	-0.074	-0.234	-0.020	1.000	0.013	**0.047**	**0.104**	-0.026	**0.041**
SMALL_PROFITS$_{i,t}$	**0.044**	0.020	0.025	-0.007	0.017	**0.143**	**0.090**	**0.121**	-0.117	-0.210	-0.074	-0.134	-0.032	-0.181	**0.099**	0.027	0.030	0.004	-0.050	-0.039	1.000	-0.021	0.019	0.009	**0.079**
ISP$_{i,t}$	**0.055**	**0.054**	**0.056**	**0.070**	-0.113	**0.091**	-0.007	-0.005	-0.060	-0.069	0.015	-0.107	0.003	0.030	-0.039	0.003	-0.033	0.000	0.011	**0.064**	0.001	1.000	**0.075**	-0.025	**0.080**
BUSY$_{i,t}$	-0.040	-0.084	-0.097	-0.014	**0.074**	-0.048	**0.233**	**0.118**	-0.099	-0.083	-0.015	-0.073	**0.088**	**0.093**	-0.008	-0.032	**0.049**	**0.057**	0.028	**0.132**	0.019	0.010	1.000	-0.030	**0.148**
INITIAL$_{i,t}$	0.000	-0.025	-0.026	0.013	**0.042**	0.030	**0.041**	**0.048**	0.002	-0.030	-0.009	-0.028	**0.041**	0.008	0.022	-0.007	0.037	0.028	-0.013	-0.027	0.009	-0.012	-0.030	1.000	-0.062
NASFEES$_{i,t}$	0.017	-0.015	-0.027	-0.029	0.004	**0.144**	**0.369**	**0.391**	-0.144	-0.046	0.009	**0.043**	**0.119**	0.030	**0.089**	-0.041	**0.134**	**0.103**	0.007	0.030	**0.045**	-0.043	**0.079**	-0.069	1.000

Table 2 – 3: Regression of KAM Dissimilarity on Audit Fees

Table 2 – 3 reports the main regression results investigating the association between auditors' disclosure of client-specific information in KAMs and audit risks. The sample period ranges from 2013 to 2019. Column (1) partitions the KAM disclosures into two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*). Column (2) reports the results for the full KAM disclosures (*KAM_DISSIMILARITY*). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered by audit firms. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively.

VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$
$DESCR\_DISSIMILARITY_{i,t}$	?	0.901***	
		(0.271)	
$RESP\_DISSIMILARITY_{i,t}$	?	-1.721***	
		(0.434)	
$KAM\_DISSIMILARITY_{i,t}$	?		-0.792**
			(0.272)
$LENGTH\_RATIO_{i,t}$	+	-0.086	
		(0.161)	
$KAM\_LENGTH_{i,t}$	+		0.116*
			(0.061)
$NB\_KAM_{i,t}$	+	0.072***	0.073***
		(0.014)	(0.016)
$SIZE_{i,t}$	+	0.589***	0.587***
		(0.010)	(0.011)
$INVREC_{i,t}$	+	0.580***	0.579***
		(0.123)	(0.125)
$ROA_{i,t}$	-	-0.492**	-0.465***
		(0.180)	(0.141)
$GROWTH_{i,t}$	-	-0.260***	-0.265***
		(0.024)	(0.021)
$MTB_{i,t}$	+	0.010***	0.009***
		(0.001)	(0.001)
$FOREIGN\_OPERATIONS_{i,t}$	+	0.526***	0.532***
		(0.051)	(0.050)
$LOSS_{i,t}$	+	0.013	0.008
		(0.081)	(0.087)
$LEVERAGE_{i,t}$	+	0.332***	0.336***
		(0.104)	(0.109)
$SPECITEMS_{i,t}$	+	-0.072	-0.076
		(0.046)	(0.049)
$MERGER_{i,t}$	+	0.174***	0.174***
		(0.038)	(0.039)

$PENSION_{i,t}$	+	0.025	0.026
		(0.049)	(0.047)
$ABS\_TACC_{i,t}$	+	0.421	0.425
		(0.243)	(0.245)
$SMALL\_PROFITS_{i,t}$	+	-0.018	-0.017
		(0.043)	(0.044)
$RETURN_{i,t}$	+	0.018	0.023
		(0.041)	(0.040)
$ISP_{i,t}$	+	0.013	0.024
		(0.088)	(0.094)
$BUSY_{i,t}$	+	0.337***	0.327***
		(0.026)	(0.031)
$INITIAL_{i,t}$	-	-0.068	-0.066
		(0.055)	(0.053)
$NASFEES_{i,t}$	+	0.013**	0.013**
		(0.006)	(0.006)
Constant		0.146	-0.392
		(0.443)	(0.245)
Observations		1.851	1.851
Adjusted R-squared		0.829	0.829
Year FE		YES	YES
Industry FE		YES	YES
Audit Firm FE		YES	YES
Audit Firm Clusters		YES	YES

Table 2 – 4: Cross-Sectional Tests Based on KAM Characteristics

Table 2 – 4 reports regressions on cross-sectional tests based on new versus old KAMs in Panel A, and on infrequent versus frequent KAMs in Panel B. The sample period ranges from 2013 to 2019. Columns (1) and (3) partition the KAM disclosures into two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*). Columns (2) and (4) report the results for the full KAM disclosures (*KAM_DISSIMILARITY*). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered by audit firms. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively. Control variables are included but not reported for brevity.

Panel A: Cross-Sectional Test Based on New versus Old KAM Topics

		$NEW\_TOPIC_{i,t}$ >= 0.5		$NEW\_TOPIC_{i,t}$ < 0.5		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
$DESCR\_DISSIMILARITY_{i,t}$	?	1.223**		0.542**		*0.682***
		(0.410)		(0.199)		*(0.260)*
$RESP\_DISSIMILARITY_{i,t}$	?	-2.620***		-1.317**		*-1.303****
		(0.295)		(0.489)		*(0.493)*
$KAM\_DISSIMILARITY_{i,t}$	?		-1.522***		-0.653*	*-0.869*
			(0.332)		(0.352)	*(0.541)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		424	424	1.427	1.427	
Adjusted R-squared		0.829	0.829	0.828	0.830	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Panel B: Cross-Sectional Test Based on the Frequency of KAM Topics

		INFREQUENT_TOPIC$_{i,t}$ >= 0.5		*INFREQUENT_TOPIC*$_{i,t}$ < 0.5		
VARIABLES	Expected Sign	(1) *AFEES*$_{i,t}$	(2) *AFEES*$_{i,t}$	(3) *AFEES*$_{i,t}$	(4) *AFEES*$_{i,t}$	*Test of coeff. Differences*
DESCR_DISSIMILARITY$_{i,t}$	?	-1.135		0.863***		*-1.998*
		(1.270)		(0.255)		*(1.222)*
RESP_DISSIMILARITY$_{i,t}$	?	-0.991		-1.781***		*0.790*
		(1.102)		(0.399)		*(0.936)*
KAM_DISSIMILARITY$_{i,t}$	?		-1.666***		-0.929***	*-0.738**
			(0.380)		(0.296)	*(0.412)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		183	183	1.668	1.668	
Adjusted R-squared		0.714	0.728	0.833	0.833	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Table 2 – 5: Cross-Sectional Tests Based on Client Firm Characteristics

Table 2 – 5 reports regressions on cross-sectional tests based on industry litigation risks in Panel A, ROA in Panel B, and CEO's compensation score linked to total shareholders' returns in Panel C. The sample period ranges from 2013 to 2019. Columns (1) and (3) partition the KAM disclosures into two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*). Columns (2) and (4) report the results for the full KAM disclosures (*KAM_DISSIMILARITY*). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered by audit firms. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively. Control variables are included but not reported for brevity.

Panel A: Cross-Sectional Test Based on Industry Litigation Risks

		LITIG = 0		LITIG = 1		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
$DESCR\_DISSIMILARITY_{i,t}$	?	0.509		1.312**		*-0.803*
		(0.355)		(0.471)		*(0.648)*
$RESP\_DISSIMILARITY_{i,t}$	?	-1.974***		-1.456		*-0.518*
		(0.141)		(0.900)		*(0.898)*
$KAM\_DISSIMILARITY_{i,t}$	?		-1.391***		-0.127	*-1.264***
			(0.340)		(0.426)	*(0.446)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		1.097	1.097	754	754	
Adjusted R-squared		0.820	0.821	0.846	0.844	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Panel B: Cross-Sectional Test Based on ROA

		$ROA_{i,t}$ >= INDUSTRY MEDIAN		$ROA_{i,t}$ < INDUSTRY MEDIAN		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
DESCR_DISSIMILARITY$_{i,t}$	?	1.166**		0.469**		*0.697*
		(0.472)		(0.142)		*(0.510)*
RESP_DISSIMILARITY$_{i,t}$	?	-2.753***		-0.496		*-2.257****
		(0.540)		(0.318)		*(0.476)*
KAM_DISSIMILARITY$_{i,t}$	?		-1.411***		-0.118	*-1.292****
			(0.428)		(0.256)	*(0.491)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		939	939	912	912	
Adjusted R-squared		0.836	0.837	0.846	0.846	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Panel C: Cross-Sectional Test Based on CEO's Compensation Score

		CEO_COMPENSATION_SCORE$_{i,t}$ < INDUSTRY MEDIAN		*CEO_COMPENSATION_SCORE*$_{i,t}$ >= INDUSTRY MEDIAN		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
DESCR_DISSIMILARITY$_{i,t}$	?	0.992**		-0.299		*1.291***
		(0.317)		(0.662)		*(0.555)*
RESP_DISSIMILARITY$_{i,t}$	?	-2.048***		-0.500		*-1.547**
		(0.357)		(1.090)		*(0.897)*
KAM_DISSIMILARITY$_{i,t}$	?		-1.203***		-0.703	*-0.500*
			(0.136)		(0.395)	*(0.315)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		785	785	583	583	
Adjusted R-squared		0.812	0.812	0.817	0.818	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Table 2 – 6: Cross-Sectional Tests Based on Audit Firm Characteristics

Table 2 – 6 reports regressions on cross-sectional tests based on audit firm industry specialization in Panel A, and audit firm tenure in Panel B. The sample period ranges from 2013 to 2019. Columns (1) and (3) partition the KAM disclosures into two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*). Columns (2) and (4) report the results for the full KAM disclosures (*KAM_DISSIMILARITY*). The regressions include industry, year, and audit firm fixed effects and standard errors reported in parentheses are clustered by audit firms. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively. Control variables are included but not reported for brevity.

Panel A: Cross-Sectional Test Based on Audit Firm Industry Specialization

		$ISP_{i,t}$ >= AUDIT FIRM MEDIAN		$ISP_{i,t}$ < AUDIT FIRM MEDIAN		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
$DESCR\_DISSIMILARITY_{i,t}$	?	1.038***		0.672**		*0.366**
		(0.251)		(0.210)		*(0.215)*
$RESP\_DISSIMILARITY_{i,t}$	?	-2.097***		-1.459*		*-0.638*
		(0.470)		(0.651)		*(0.882)*
$KAM\_DISSIMILARITY_{i,t}$	?		-0.962**		-0.783	*-0.179*
			(0.393)		(0.528)	*(0.638)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		1,100	1,100	751	751	
Adjusted R-squared		0.858	0.858	0.758	0.761	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Panel B: Cross-Sectional Test Based on Audit Firm Tenure

		$ATENURE_{i,t}$ <= 3		$ATENURE_{i,t}$ > 3		
VARIABLES	Expected Sign	(1) $AFEES_{i,t}$	(2) $AFEES_{i,t}$	(3) $AFEES_{i,t}$	(4) $AFEES_{i,t}$	*Test of coeff. Differences*
$DESCR\_DISSIMILARITY_{i,t}$	?	0.600		1.151***		*-0.551*
		(0.921)		(0.351)		*(0.999)*
$RESP\_DISSIMILARITY_{i,t}$	?	-2.531***		-1.697***		*-0.834*
		(0.655)		(0.468)		*(0.623)*
$KAM\_DISSIMILARITY_{i,t}$	?		-1.744***		-0.498	*-1.246****
			(0.196)		(0.347)	*(0.287)*
Controls		*YES*	*YES*	*YES*	*YES*	
Observations		570	570	1.281	1.281	
Adjusted R-squared		0.858	0.858	0.817	0.816	
Year FE		YES	YES	YES	YES	
Industry FE		YES	YES	YES	YES	
Audit Firm FE		YES	YES	YES	YES	
Audit Firm Clusters		YES	YES	YES	YES	

Table 2 – 7: Additional Analyses Regarding Audit Quality and Audit Effort

Panel A: Audit Quality Analysis

Table 2 – 7 reports the regression results investigating the association between KAM dissimilarity and audit quality in Panel A and audit effort in Panel B. The sample period ranges from 2013 to 2019. Odd columns report the results for the two KAM components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*), while even columns report results for the entire KAM disclosures (*KAM_DISSIMILARITY)*. *ABS_DACC* is the absolute value of discretionary accruals following (Dechow & Dichev, 2002). *SMALL_PROFITS* and *SMALL_EARNINGS_INCR* are two dummy variables respectively capturing the propensity of managers to report small profits and to report small earnings' increases. *NEW_CLIENT* is a dummy variable equal to 1 for first-year audits, and 0 otherwise. Columns (1) and (2) report OLS regressions while columns (3) to (8) are logit models. The models include industry and year fixed effects and standard errors reported in parentheses are clustered by audit firms. Columns (1) and (2) also include audit firm fixed effects, while columns (3) to (8) have an additional control variable for Big 4. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 2 - 2. The significance levels are denoted by ***, **, and * for 1, 5, and 10 percent, respectively. Control variables are included but not reported for brevity.

VARIABLES	Expected Sign	(1) $ABS\_DACC_{i,t}$	(2) $ABS\_DACC_{i,t}$	(3) $SMALL\_PROFITS_{i,t}$	(4) $SMALL\_PROFITS_{i,t}$	(5) $SMALL\_EARNINGS\_INCR_{i,t}$	(6) $SMALL\_EARNINGS\_INCR_{i,t}$	(7) $NEW\_CLIENT_{i,t}$	(8) $NEW\_CLIENT_{i,t}$
$DESCR\_DISSIMILARITY_{i,t}$	?	-0.025		3.749***		-0.461		6.088***	
		(0.062)		(1.401)		(0.734)		(2.336)	
$RESP\_DISSIMILARITY_{i,t}$	?	-0.037		-1.015		-1.657**		-4.885*	
		(0.053)		(1.413)		(0.700)		(2.970)	
$KAM\_DISSIMILARITY_{i,t}$	?		-0.090**		1.602		-1.470***		0.925
			(0.035)		(1.486)		(0.343)		(1.049)
Controls		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Observations		1,832	1,832	1,851	1,851	1,851	1,851	1,851	1,851
Adjusted R-squared		0.116	0.111						
Year FE		YES	YES	YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES	YES	YES
Audit firm FE		YES	YES	NO	NO	NO	NO	NO	NO
Audit Firm Clusters		YES	YES	YES	YES	YES	YES	YES	YES

Panel B: Audit Effort Analysis

VARIABLES	Expected Sign	(1) $REPORT\_LAG_{i,t}$	(2) $REPORT\_LAG_{i,t}$	(3) $EARNINGS\_LAG_{i,t}$	(4) $EARNINGS\_LAG_{i,t}$
$DESCR\_DISSIMILARITY_{i,t}$	?	0.038		0.014	
		(0.081)		(0.092)	
$RESP\_DISSIMILARITY_{i,t}$	?	0.277**		0.196	
		(0.101)		(0.119)	
$KAM\_DISSIMILARITY_{i,t}$	?		0.312***		0.207**
			(0.056)		(0.082)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		1,831	1,831	1,848	1,848
Adjusted R-squared		0.301	0.302	0.393	0.393
Year FE		YES	YES	YES	YES
Industry FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Audit Firm Clusters		YES	YES	YES	YES

CHAPTER 3

IS SPECIFIC INFORMATION IN KEY AUDIT MATTERS INFORMATIVE?

THE ROLE OF RISK DISCLOSURES

Is Specific Information in Key Audit Matters Informative?

The Role of Risk Disclosures

Abstract

Mixed results in prior literature examining the informativeness of Key Audit Matters (KAMs) and KAM features after their implementation in various jurisdictions suggest that there is a need to better understand the conditions under which KAMs are informative. Using a sample of firms in the United Kingdom, I examine the wording and content of the risk description of KAMs. I hypothesize and find that auditors' risk disclosures are informative only if they provide specific (dissimilar) information compared to both the previous year and industry peers. Consistent with prior literature examining managerial risk disclosures, auditors' specific risk disclosures reflect bad news rather than good news. My results strengthen when investors face greater information asymmetries, and when all audit committee members are independent. This paper has implications for auditors and standard setters by providing evidence that temporal and cross-sectional variations in KAMs provide valuable information.

Keywords: Key Audit Matters, investors' reactions, cumulative absolute abnormal returns, KAM dissimilarity, risk disclosure, auditor disclosure, textual analysis

1. Introduction

High-quality risk disclosures represent a key element of market information (Caruana, 2011). Prior literature finds that managerial risk disclosures in annual reports are client-specific and useful to investors (Tan et al., 2017). However, risk disclosures become less informative as managers tend to disclose fewer material risks (Beatty et al., 2019). Through Key Audit Matters (KAMs), auditors must disclose the greatest risks of material misstatements they encounter during the audit process (FRC, 2013b). KAMs aim to enhance the communicative value of the audit report and assist financial statement users in understanding the firm and areas of significant management judgment (FRC, 2020). However, critics fear KAMs would contain boilerplate language lacking incremental information content (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013). I investigate the conditions under which auditors' risk disclosures in KAMs are informative to investors.

KAMs represent the most significant change in the audit report in the past 70 years. Auditors identify KAMs based on professional judgment while considering significant events, transactions, and/or internal control deficiencies specific to the audit engagement (FRC, 2013a). Each KAM consists of two components: first, auditors describe the risk encountered, second, they detail the procedures performed to address that risk. I focus on the risk description rather than the auditors' response component of the KAM since the risk description relates to client uncertainty and key risks that are more likely to satisfy the informational needs of market participants. Investors may not be familiar with audit procedures, and therefore they are more likely to ignore the auditors' response component of the KAM (Chang et al., 2022).

Although KAMs aim to enhance the communication between auditors and users of the audit report (FRC, 2013b), prior literature finds mixed results regarding the informativeness of KAMs. While experimental studies show that KAMs have informative value to investors (Brasel et al., 2016; Carver & Trinkle, 2017; Christensen et al., 2014; Rapley et al., 2021),

archival research examining the informativeness of the implementation of KAMs in different jurisdictions provides mixed findings (e.g., Bens et al., 2019; Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022). Similarly, examining the informativeness of KAM features (such as KAM number, length, and type) and content (such as readability, tone, and specificity) also provides mixed results (Abbott & Buslepp, 2022; Chang et al., 2022; Klevak et al., 2022; Lennox et al., 2022; Hao Li, 2017; Seebeck & Kaya, 2022). These mixed results suggest there is a need to understand the conditions under which KAMs are informative.

Using textual analysis tools, I examine the content of the risk description of KAMs. I argue that to be informative, auditors' risk disclosures must be specific in two dimensions: they must embrace both temporal and cross-sectional variations. I define auditors' specific risk disclosures as differences in the words disclosed by auditors in the risk description of the KAM compared to the same type of KAM (a) in the previous year and (b) of all industry peers during the same fiscal year. Appendix 3 - 1 provides KAM examples for illustrative purposes. In Panels A and B, I highlight similar words compared to the previous year, and one industry peer, respectively. Words not highlighted represent auditors' specific risk disclosures in each dimension. I capture these variations in words disclosed by auditors about the risks encountered during the audit process with two dissimilarity metrics, one for each dimension. I hypothesize and find that to be informative, auditors' risk disclosures must be specific (dissimilar) in both dimensions simultaneously. Figure 3 - 1 highlights the interplay between the two dimensions of auditors' dissimilar risk disclosures.

[Insert Figure 3 - 1 here]

I hand-collect KAMs from a sample of premium listed firms on the London Stock Exchange (LSE) from 2013 to 2019. I use OLS regressions with the four-day cumulative absolute abnormal returns around the annual report release date (from day -1 to day +2) as the dependent variable. KAMs are disclosed in the audit report, which is included in the annual

report, thus KAMs are publicly available on the annual report release date. I measure the specificity of auditors' risk disclosures with two dissimilarity variables based on cosine similarity scores (S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). First, to capture temporal variations, I pair KAMs per topic and firm for years *t* and *t-1*. Second, to capture cross-sectional variations, I pair KAMs per topic, industry, and year. Calculating dissimilarity within topic alleviates concerns about differences in underlying economic activities among firms. I average the scores per firm and fiscal year for each dissimilarity variable to obtain two firm-year level measures. Following prior literature, I control for factors likely to affect investors' reactions, such as firm profitability and risk, earnings news, financial information in the annual report, and the number of days between the earnings announcement date and annual report release date (Carcello & Li, 2013; Gutierrez et al., 2018; Lennox et al., 2022).

I first examine each dimension of auditors' specific risk disclosures separately, then together before examining their interaction effect. I find that temporal variations in auditors' risk disclosures are marginally negatively associated with investors' reactions, while cross-sectional variations are not incrementally informative to investors. I find that to be informative, auditors' risk disclosures must be specific in the two dimensions simultaneously: dissimilar compared to (a) the previous year and (b) industry peers in the same fiscal year.

I perform several cross-sectional tests to enhance the validity of my findings. First, I divide my sample based on investors facing high versus low information asymmetries. KAMs can be particularly useful for "audited entities where there are fewer sources of other information" (FRC, 2016a). KAM disclosures can bring investors' attention to the matters mentioned and facilitate their analysis of the financial statements (PCAOB, 2016). Thus, I expect auditors' specific risk disclosures to provide greater benefit to investors facing high information asymmetries. I find results consistent with my expectation using two proxies for information asymmetry: bid-ask spreads (Corwin & Schultz, 2012; Peterson et al., 2015), and

service versus industrial firms due to differences in risk-related disclosures in their interim reports (Elzahar & Hussainey, 2012).

Second, I examine subsamples based on audit committee independence. The role of the audit committee is to oversee the financial statements and monitor external auditors to ensure their independence, objectivity, and effectiveness of the audit process (FRC, 2016b). Independent audit committees can reduce managerial pressure on auditors' reporting decisions (e.g., Bruynseels & Cardinaels, 2014; Carcello & Neal, 2000). I expect auditors to write more informative risk descriptions in KAMs when all the audit committee members are independent. I find results consistent with this expectation.

I further examine signed cumulative abnormal returns to rule out the alternative explanation that auditors' specific risk disclosures reflect good news to investors. Risk disclosures are likely to be perceived as bad news by investors (Tan et al., 2017). I examine separately positive and negative cumulative abnormal returns and find that while auditors' specific risk disclosures are not significantly associated with positive cumulative abnormal returns, such disclosures are significantly associated with negative cumulative abnormal returns. This analysis suggests that auditors' specific risk disclosures are perceived as bad news rather than good news by investors.

I perform several robustness tests to ensure my results are not driven by design choices. I first remove observations for which I did not find the annual report release date and instead used the Annual General Meeting (AGM) or notice of AGM dates. Second, I examine alternative event windows to compute the cumulative absolute abnormal returns. Finally, I use an alternative measure of dissimilarity focusing on the occurrence of the words rather than their frequency. My results remain qualitatively similar to my main findings.

This paper contributes to the accounting and auditing literature in several ways. First, it complements papers studying the informativeness of KAM disclosures to market participants.

Although KAMs aim to enhance the communication between auditors and users of the audit report (FRC, 2013b), prior literature finds mixed results after its implementation in various jurisdictions (e.g., Bens et al., 2019; Burke et al., 2022; Goh et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022; Liao et al., 2022; Su & Li, 2020). This research goes beyond examining the KAM regulatory change by analyzing the content of KAM disclosures. I complement this literature by isolating the conditions under which auditors' risk disclosures are informative.

Second, my findings complement prior literature on risk disclosures (Beatty et al., 2019; Elzahar & Hussainey, 2012; Hope et al., 2016; Tan et al., 2017) by focusing on auditors' rather than managers' disclosures. Risk disclosures become less informative as managers disclose fewer material risks (Beatty et al., 2019). KAMs provide a unique setting to examine risk-related information based on auditors' perspectives. Through KAMs, auditors must disclose the matters representing the greatest risks of material misstatements during the audit process. Consistent with prior literature examining the specificity of risk-factor disclosures (Hope et al., 2016), I find that auditors' specific risk disclosures are informative.

Third, this paper complements research that analyzes the informativeness of KAM features and content, such as KAM length, number, topics, tone, and specificity (Abbott & Buslepp, 2022; Chang et al., 2022; Klevak et al., 2022; Lennox et al., 2022; X. Li, 2020; Seebeck & Kaya, 2022; Su & Li, 2020). This paper also contributes to the KAM literature that examines textual features of KAMs such as their number and types (e.g., Al-mulla & Bradbury, 2022; Rousseau & Zehms, 2022), as well as KAM similarity (Burke et al., 2022; Chen, Nelson, et al., 2020; Zeng et al., 2021). I contribute to this literature by examining the informativeness of auditors' risk disclosures' dissimilarity, namely focusing on word differences among the same type of KAMs over time and across industry peers. I find that to be informative, auditors' risk disclosures must embrace both temporal and cross-sectional variations.

Fourth, my analysis contributes to the literature on auditors' disclosures of additional information in the audit report (Czerney, Schmidt, & Thompson, 2019; Menon & Williams, 2010). This study also complements papers investigating investors' reactions to disclosures of internal control weaknesses (e.g., Hammersley, Myers, & Shakespeare, 2007; Ittonen, 2010). Although some risks are inherent to an industry, auditors should consider significant events or transactions that affect the audit, such as internal control deficiencies (IAASB, 2015), when determining a KAM.

2. Prior Literature and Hypothesis Development

2.1. Institutional Setting of Key Audit Matters

Key Audit Matters (KAMs) have been implemented to improve the communication between auditors and users of the audit report (FRC, 2013b). The traditional audit report provides a binary opinion (qualified versus unqualified) and is highly standardized. The audit report has long been criticized for providing little client-specific information (e.g., Christensen et al., 2019; Church et al., 2008; Gray et al., 2011; Mock et al., 2013; Vanstraelen et al., 2012). KAM disclosures result from a demand for more informative audit reports.

KAMs are auditors' disclosures in the audit report, forming the extended audit report. KAMs represent the greatest risks of material misstatements encountered during the audit process. Auditors identify KAMs based on professional judgment while considering significant events, transactions, and/or internal control deficiencies specific to the audit engagement. An extended audit report may consist of multiple KAMs, and each KAM consists of two sections: the first describes the risk encountered, and the second details the audit procedures performed to respond to the risk.

Premium-listed firms on the London Stock Exchange with a fiscal year-end on or after September 30th, 2013 are the first to disclose risks of material misstatements, the precursor of

KAMs (FRC, 2013a). After the implementation of KAMs in the United Kingdom (UK) and Ireland, other countries quickly enacted similar standards, and KAMs are now implemented worldwide. KAMs have been implemented in the European Union, Hong Kong, Singapore, New Zealand, and Australia in 2016 (AASB, 2015; HKICPA, 2016; IAASB, 2015; ISCA, 2016; NZ AASB, 2015), in China in 2017 (Chinese MoF, 2016), in Canada in 2018 (CPA, 2018), and the United States (US) in 2019 with Critical Audit Matters (CAMs) (PCAOB, 2017).

2.2. Informativeness of KAM Disclosures

Before the implementation of CAMs in the US, several experimental studies examined investors' perceptions related to CAM disclosures providing mixed results. Although CAMs have arguably been found to decrease the readability of the audit report, CAM disclosures have not been shown to affect investor valuation judgments (Carver & Trinkle, 2017). On the contrary, most experimental research finds CAM disclosures to be informative to investors. Investors may adjust their investment decisions based on CAMs, as CAM disclosures reflect heightened risks of material misstatements that have been found to forewarn investors especially when misstatements are difficult to foresee (Brasel et al., 2016; Christensen et al., 2014; Rapley et al., 2021). However, this effect is mitigated when auditors explain how they addressed the matter (Christensen et al., 2014).

After the implementation of KAM disclosures, several researchers examined the consequences of this regulatory change on the market yielding mixed results. The implementation of justification of assessments (JOAs) and new JOAs in subsequent years are not informative to investors based on abnormal returns and abnormal trading volume in France (Bédard et al., 2019).[32] Several researchers fail to find an impact of the KAM regulatory change

[32] JOAs are implemented in France since 2003 and aim to enhance the informative value of audit reports. JOAs are part of the French expanded audit reports and represent matters that are important in the audit. However, JOAs differ from KAMs in that auditors are not required to explain why the matter is important in JOAs (Bédard et al., 2019).

on investors' decisions when examining cumulative absolute abnormal returns and trading volume in the UK (Gutierrez et al., 2018; Lennox et al., 2022) and in the US (Burke et al., 2022). Examining signed cumulative abnormal returns in the UK similarly fails to find any impact of KAMs on investors' decisions (Lennox et al., 2022). Other researchers found similar results examining KAMs in Asia: KAM regulations neither impact cumulative absolute abnormal returns in China (Gu & Ncuti, 2020), nor cumulative absolute abnormal returns, trading volume, or bid-ask spreads in Hong Kong (Liao et al., 2022).

On the other hand, some papers report KAMs to be informative for market participants. The implementation of KAMs in the UK has been shown to lower bid-ask spreads and dispersion in earnings forecasts by security analysts (Bens et al., 2019). The disclosure of KAMs in Hong Kong increases abnormal trading volume and earnings response coefficients and decreases stock price synchronicity (Goh et al., 2022). Similarly, the disclosure of KAMs in China increases listed companies' cost of capital, a proxy for investors' risk perception (Zhou, 2019).

These mixed results suggest that there is a need to understand the conditions under which KAMs are informative. Some researchers have begun to do so, by focusing on features of KAM disclosures such as their number, length, topic, tone, and specificity. In the US, firms with more extensive CAM disclosures (longer and more CAMs, and more audit procedures mentioned) have lower market returns around the Form 10-K filing date (Klevak et al., 2022). In China, a higher number of KAMs and proportion of numbers disclosed in KAMs leads to more institutional investors withdrawing their holdings in the firm (X. Li, 2020). However, in Taiwan, the number of KAMs does not provide informative content to investors (Su & Li, 2020), while client-specific information in KAMs, captured with the percentage of generic tetragrams, is associated with lower reporting quality (Chang et al., 2022). Similarly, in the UK, the unexpected number of KAMs, the negative tone and uncertainty words in KAMs, new

KAMs, KAM readability, length, and number are not incrementally informative to the market (Lennox et al., 2022; Seebeck & Kaya, 2022), but specificity related to specific words mentioned in KAMs (such as locations, names, currency, percentages, date, etc.) are informative (Seebeck & Kaya, 2022).[33] In the US, distinct and more diverse CAMs are also found to be informative to sophisticated market participants (Anding et al., 2022). Focusing on business combination CAMs in the US, Abbott and Buslepp (2022) find that investors react more negatively to merger and acquisition announcements when a business combination CAM is disclosed before the announcement, suggesting that this type of CAM is informative.

2.3. Hypotheses Development

The mixed results regarding the informativeness of KAMs could be driven by different factors. First, researchers use different research designs (Chang et al., 2022) and proxies to capture the informativeness of KAM disclosures. Second, although the KAM regulation is similar worldwide, differences in regulatory and disclosure requirements, as well as socio-economic differences among the countries studied could explain the mixed results found in the KAM literature (Chang et al., 2022; Velte & Issa, 2019). Third, cultural differences affect auditors' work, such as objectivity (Svanberg & Öhman, 2016) and involvement (Bik & Hooghiemstra, 2017), and can explain differences in KAM disclosures and its informativeness.

Although auditors are encouraged to write KAMs in their own words, critics fear KAMs would contain boilerplate language lacking incremental information content (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013). Moreover, audits are credence goods (Causholli & Knechel, 2012), so auditors could strategically engage in herding behavior and write boilerplate KAMs. Based on interviews with audit partners in the US, a recent study finds that auditors

[33] My measure of specific (dissimilar) information is different from the one used by Chang et al. (2022) and by Seebeck and Kaya (2022). I focus on the content of the risk disclosures after removing the generic words (stop words) for the same type of risk (same KAM topic) to capture differences in specific risk-related information provided by auditors. Finally, this paper is the first to examine the informativeness of auditors' specific risk disclosures over time and among industry peers.

indeed engage in herding behavior when writing CAMs and avoid "sticking out" by fear of attracting regulators' attention (Dannemiller et al., 2022). Prior literature finds that KAM disclosures are informative when they provide specific words (Chang et al., 2022; Seebeck & Kaya, 2022). However, it is unclear under which conditions specific KAMs are informative.

Based on social psychology literature, the Construal Level Theory states that responding to more abstract and distant events requires more conceptualization, while closer and more specific events rely on direct experience (Trope & Liberman, 2010). The Construal Level Theory suggests that investors are more likely to react to specific information than to abstract boilerplate disclosures. Prior literature finds that analysts are better able to assess firms' fundamental risks when disclosures are more specific, and that specific risk disclosures benefit financial statement users (Hope et al., 2016). Prior literature also finds that client-specific managerial risk disclosures in annual reports are useful to investors (Campbell, Chen, Dhaliwal, Lu, & Steele, 2013; Tan et al., 2017). I argue that auditors can disclose specific risk disclosures in two dimensions by providing both temporal and cross-sectional variations in KAMs.

Examining temporal variations in KAMs is a change measure by design and reflects new information disclosed (S. V. Brown & Tucker, 2011). Prior literature finds that dissimilarity in Management Discussion and Analysis (MD&A) compared to the previous year is positively associated with the magnitude of stock price responses of 10-K filings (S. V. Brown & Tucker, 2011). This result suggests that new information in the MD&A compared to the previous year is informative to investors. This temporal dissimilarity measure applies to other settings where the disclosure is narrative, repetitive, and contains discretionary content, such as KAMs. Moreover, auditors have access to a wide set of private information and due to auditors' independence requirement, auditors' disclosure can be seen as more credible than management risks' disclosures (Lennox et al., 2022). Temporal variations in auditors' risk disclosures can thus be informative to investors.

However, KAMs represent purely qualitative disclosures and their content could thus be boilerplate, without informational value (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013). Prior literature finds that footnotes referenced by a CAM in the US are more similar to the CAMs in 2019 compared to 2018 (Burke et al., 2022). This result supports the explanation that auditors avoid providing original information or that managers and auditors wish to disclose the same information. Moreover, prior literature finds that quarter-over-quarter similarity in earnings press releases is associated with lower financial analysts' uncertainty (Bozanic & Thevenot, 2015). This finding suggests that providing similar disclosures over time reinforces previously disclosed news and helps reduce uncertainty. Providing specific risk disclosures could thus increase investors' confusion about the firm's underlying risks. Based on these conflicting arguments, it is an open question whether temporal variations in auditors' risk disclosures are informative to investors. I state my first hypothesis as follows:

H1: Temporal variations in auditors' risk disclosures are not incrementally informative to investors.

Focusing on cross-sectional variations in auditors' risk disclosures, prior literature shows that non-standard audit reports, such as going concern opinions in the US, are informative when they are unexpected (Menon & Williams, 2010). In the risk description of the KAM, auditors should explain the greatest risks of material misstatements that require the most professional judgment they have encountered during the audit process (FRC, 2013b). Through KAMs, auditors can disclose unexpected risks and/or update beliefs about the firm's financial reporting quality (Gutierrez et al., 2018). Although some risks are inherent to an industry, auditors should consider significant events or transactions that affect the audit, when determining a KAM. Prior literature finds that client-specific language in the risk descriptions of KAMs compared to industry peers reflects heightened risks of material misstatements (Chen,

Nelson, et al., 2020). Cross-sectional variations in auditors' risk disclosures are thus likely to be informative to investors.

However, providing dissimilar disclosures reduces comparability among peers, and comparability has been shown to improve the informativeness of stock prices (Choi, Choi, Myers, & Ziebart, 2019). Additionally, prior literature shows that clients cluster within audit firms when their financial disclosure is similar to those of industry peers (S. V. Brown & Knechel, 2016). As mentioned previously, auditors are likely to provide similar disclosures to managers, especially when footnotes are referenced by a KAM (Burke et al., 2022). If auditors use similar wordings to managers in the financial statement, auditors' risk disclosures are likely to be boilerplate among industry peers and thus lack incremental information content. Moreover, auditors may refrain from disclosing client-specific information to protect themselves against litigation risks or if they fear getting inspected when disclosing dissimilar information compared to industry peers (Dannemiller et al., 2022). Finally, if auditors lack the appropriate expertise to provide accurate disclosures with a proper context, they may confuse financial statement users (Carver & Trinkle, 2017). If this is the case, cross-sectional variations in auditors' risk disclosures are unlikely to be informative to investors. Based on these conflicting arguments, I state my second hypothesis as follows:

H2: Cross-sectional variations in auditors' risk disclosures are not incrementally informative to investors.

Examining each dimension of auditors' specific risk disclosures separately may not be informative to market participants but examining them simultaneously is more likely to provide valuable information. Disclosures may be dissimilar year over year while being similar to the peers. If this is the case, auditors' risk disclosures are unlikely to provide unexpected information related to industry-specific idiosyncratic risks that would address investors' needs for risk-related information. On the other hand, if disclosures are similar year over year but

dissimilar compared to industry peers, they are unlikely to provide new valuable information to investors. Providing specific risk disclosures in both dimensions simultaneously is thus likely to address investors' needs for risk-related information and provide valuable content. However, as detailed previously, if auditors' risk disclosures are boilerplate without specific content, or do not reflect the firm's underlying economic risk, such disclosures are unlikely to be informative. I thus state my third hypothesis as follows:

H3: Auditors' risk disclosures providing both temporal and cross-sectional variations are not incrementally informative to investors.

3. Research Design and Sample Selection

3.1. Research Design

I capture investors' reactions with the four-day cumulative absolute abnormal returns around the annual report release date (from day -1 to day +2) (Gutierrez et al., 2018; Lennox et al., 2022). Cumulative absolute abnormal returns capture market reaction following the publication of the annual report and reflect whether the market finds auditors' specific risk disclosures informative. KAMs are disclosed in the audit report, which is included in the annual report, thus KAMs are publicly available on the annual report release date. I measure my dependent variable, *ABS_CAR*, following Gutierrez et al. (2018).[34] I compute abnormal returns as the firm's returns minus the same-day returns for the LSE100 value-weighted portfolio.[35] I then sum the four-day absolute values of abnormal returns around the annual report release

[34] I omit time and firm subscripts when mentioning variables in my paper for ease of exposition.
[35] The FTSE100 index includes the 100 firms listed on the LSE with the highest market capitalization. These firms represent about 80% of the LSE total capitalization. This index is a widely used summary indicator for the UK stock market (Gutierrez et al., 2018).

date. I obtain the annual report release dates and earnings announcement dates as per the RNS on Capital IQ and lse.co.uk/rns.[36]

I measure the specificity of auditors' risk disclosures with two dissimilarity variables based on cosine similarity scores (S. V. Brown & Knechel, 2016; S. V. Brown & Tucker, 2011). First, to capture temporal variations (*TIME_DISS*), I pair KAMs per topic and firm for years *t* and *t-1*. Second, to capture cross-sectional variations (*PEERS_DISS*), I pair KAMs per topic, industry SIC-1-digit, and year. Calculating dissimilarity within topic alleviates concerns about differences in underlying economic activities among firms. I allocate each KAM to a topic based on the words in its title. Topics that are unique to a group (e.g., a unique KAM topic in an industry-year or a KAM topic not disclosed in the previous year for that firm), are coded as fully dissimilar.[37]

I average all the pairs formed per KAM to get a score at the KAM level. I then average the scores per firm and fiscal year for each dissimilarity variable to obtain two firm-year level measures. To alleviate concerns about differences in lengths when comparing KAMs, I adjust the scores for document length as in S. V. Brown and Tucker (2011). The dissimilarity score equals one minus the similarity score. Higher scores represent greater dissimilarity. To ease the interpretation of the results, I center the two dissimilarity variables by deducing their respective means. I provide a detailed explanation of the methodology to compute the dissimilarity variables in the general introduction of the Thesis (section 3, page 16). I provide additional tests for construct validity in Appendix 3 - 2.

[36] I manually collected annual report release dates on the firm websites in the regulatory announcement section when missing or when there were mistakes in the data. When the annual report release date is not available, I use the Annual General Meeting (AGM) date or notice of AGM date (Gutierrez et al., 2018).

[37] Results are qualitatively similar when I remove the unique KAM topics, alleviating concerns that fully dissimilar KAMs drive my results. I find that the coefficients of dissimilarity in both dimensions are not statistically significant, and the interaction term is positive and statistically significant at the 5% level.

I test my hypotheses with the following OLS regressions:

$$\begin{aligned} ABS\_CAR_{i,t} = {} & \beta_0 + \beta_1 DISSIMILARITY_{i,t} + \beta_2 LENGTH_{i,t} + \beta_3 NB\_KAM_{i,t} \\ & + \beta_4 ABS\_CAR\_EA_{i,t} + \beta_5 MKT_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CHNI_{i,t} \\ & + \beta_8 MTB_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} LEVERAGE_{i,t} \\ & + \beta_{11} SALES\_VOL_{i,t} + \beta_{12} BETA_{i,t} + \beta_{13} LAG_{i,t} \\ & + IndustryearFE + AuditFirmFE + \varepsilon_{i,t} \end{aligned} \quad (1)$$

$$\begin{aligned} ABS\_CAR_{i,t} = {} & \beta_0 + \beta_1 TIME\_DISS_{i,t} + \beta_2 PEERS\_DISS_{i,t} \\ & + \beta_3 TIME\_DISS_{i,t} * PEERS\_DISS_{i,t} \\ & + \sum \beta_i \, Controls + IndustryYearFE + AuditFirmFE + \varepsilon_{i,t} \end{aligned} \quad (2)$$

The dependent variable is the four-day cumulative absolute abnormal returns around the annual report release date, denoted by the variable *ABS_CAR*. I first examine each dimension of dissimilarity separately (Equation 1). The coefficient of interest is β_1 and alternatively represents the variables *TIME_DISS* and *PEERS_DISS* to test Hypotheses 1 and 2, respectively. Second, I examine their interaction effect to test Hypothesis 3 (Equation 2). The coefficient of interest is β_3 and represents the interaction between both dimensions of dissimilarity.

The two equations include the same set of control variables. I control for the length of the risk description of the KAM (*LENGTH*) and the number of KAMs (*NB_KAM*) (Alves Júnior & Galdi, 2019; Klevak et al., 2022; Zhou, 2019). Following prior literature, I control for factors affecting investors' reactions (Carcello & Li, 2013; Gutierrez et al., 2018; Lennox et al., 2022). I collect client firm characteristics on Thomson Reuters Eikon. These variables related to firm riskiness and profitability include total market value (*MKT*), return on assets (*ROA*), profitability (*LOSS*), the equity market-to-book value (*MTB*), leverage (*LEVERAGE*), sales volatility (*SALES_VOL*), change in net income (*CHNI*), and the firm's beta (*BETA*). To capture earnings news and financial information in the annual report, I control for market reactions around the earnings announcement date (from day -1 to day +2) (*ABS_CAR_EA*) and the number of days between the earnings announcement and audit report release dates (*LAG*). Prior

literature finds that there is little reaction to 10-K reports when earnings are announced beforehand (E. X. Li & Ramesh, 2009). To further alleviate concerns about reactions related to other information released in the annual report, I remove observations for which the annual report is released on the same day as earnings are announced.

I include industry-year, and audit firm fixed effects to account for unobservable differences among the industry-years, and audit firms. I also cluster standard errors by client firms to control for potential correlation within firms. I winsorize all the continuous variables at the 1st and 99th percentiles to mitigate the impact of outliers. All the variables are defined in Appendix 3 - 3.

3.2. Sample Selection

My sample consists of premium listed firms on the London Stock Exchange (LSE) from 2013 to 2019, the longest sample period possible. Table 3 - 1 Panel A presents the sample selection process. The initial sample consists of 4,594 premium-listed firm-year observations on the LSE from 2013 to 2019, from 823 unique firms. I remove firms in the financial industry (SIC 6000-6900) because their risks and accounting structure are different from non-financial firms (2,602 firm-year observations). I further eliminate observations without annual reports or KAM disclosures (78 firm-year observations).[38] I remove observations with a fiscal period other than twelve months, with missing annual reports release dates, and earnings announcement dates (13 firm-year observations).

Due to the temporal dimension of auditors' specific risk disclosures, first-year KAMs cannot get a score. This further reduces my sample by 339 firm-year observations now starting in 2014. I also remove observations when the earnings are announced the same day as the annual report is released, as it results in similar dependent and control variables for *ABS_CAR* and

[38] I retrieved annual reports thanks to web scrapping technique on the three following websites: annualreport.com, data.fca.org.uk, and Capital IQ. Missing annual reports have been manually downloaded on the firms' websites.

ABS_CAR_EA (56 firm-year observations). Finally, I eliminate observations with missing control variables (230 firm-year observations). My final sample consists of 1,276 firm-year observations from 308 unique firms resulting in 4,652 KAMs from 2014 to 2019. I present the number of firms and KAMs per year in Table 3 - 1 Panel B.

[Insert Table 3 - 1 here]

I provide the distribution of KAM topics in Table 3 - 1 Panel C. I identify 17 categories of KAMs based on their titles. The two most frequent KAM topics are "Revenue Recognition" (16.06%) and "Valuation of Intangible Assets" (15.97%). I believe that my allocation of KAM topics is representative and consistent with the significant risks indicated by auditors in Europe as a result of ISA701 (Dixon, 2020).[39]

4. Empirical Results

4.1. Descriptive Statistics

Table 3 - 2 presents the descriptive statistics and the correlation matrix for the main variables in Panel A and B, respectively. The dissimilarity variables are centered to ease the interpretation of the coefficients, thus their means are equal to 0. There are more variations in the dissimilarity scores within firms compared to the ones among industry peers, with a standard deviation and amplitude of 0.259 and 0.998 for *TIME_DISS*, and 0.050 and 0.260 for *PEERS_DISS*.[40] The risk description of KAMs has on average 66 words (natural logarithm equals 4.114), with a standard deviation of 25 words. The minimum length is 14.5 words (natural logarithm of 2.674), and the maximum is 147.2 words (natural logarithm of 4.992). Firms disclose on average three to four KAMs, with a minimum of one and a maximum of eight.

[39] The two largest KAM issues for European firms in 2019 are "Asset Impairment and Recoverability" (24.2%) and "Revenue and Other Income" (17.2%), according to the Audit Analytics database (Dixon, 2020).
[40] The amplitude is calculated as the maximum minus the minimum value displayed in the descriptive statistics.

[Insert Table 3 - 2 here]

Investors react more to earnings announcements compared to the release of the annual report (average *ABS_CAR* and *ABS_CAR_EA* of 0.071 and 0.111, respectively). On average, firms release the annual report 29 days after the earnings are announced (mean of the variable *LAG*). Firms in my sample are large, with an average market capitalization of 1.165 billion GBP (average *MKT* equals 20.876). Although they have low profitability, with an average *ROA* of 0.055, and an average change in net income of 0.002 (mean of the variable *CHNI*), only 13.9% experienced a loss during my sample period. Firms in my sample have an average market-to-book ratio of 3.310 and are mostly financed through debt, with an average leverage ratio of 57.9%. On average, my sample comprises low-risk firms, with an average sales volatility of 11.9% and an average *BETA* of 0.848. Most firms in my sample are audited by a Big 4 (93%).

In Panel B of Table 3 - 2, the correlation matrix presents Pearson's correlation coefficients and Spearman's rank correlation in the upper- and lower-triangular cells, respectively. The two dissimilarity measures are not highly correlated, with a correlation of 0.144. Both dissimilarity variables are negatively correlated to *ABS_CAR*. However, *TIME_DISS* has a small positive correlation with *ABS_CAR_EA*. The two variables *ABS_CAR* and *ABS_CAR_EA* are negatively correlated with *MKT, ROA*, *CHNI,* and *MTB*, but positively correlated with *LOSS*, *LEVERAGE, SALES_VOL*, and *BETA.* The two variables, *ROA* and *LOSS*, are naturally inversely correlated (coefficient of -0.599 but not statistically significant). Overall, the correlation coefficients do not raise multicollinearity concerns.

4.2. Main Results

I report my main results in Table 3 - 3. I provide results for the two dimensions of auditors' specific risk disclosures in KAMs as independent variables in the first two columns of the table to test Hypotheses 1 and 2, respectively. Column (1) shows the results for dissimilar KAMs compared to the previous year (*TIME_DISS*), while Column (2) reports dissimilarity in

KAMs compared to industry peers (*PEERS_DISS*). In Column (3), I report the two measures together. Finally, in Column (4), I include the interaction of these two variables to test Hypothesis 3.

[Insert Table 3 - 3 here]

I find that the coefficient of *TIME_DISS* is negative (-0.012) and marginally significant at the 10% level. However, the coefficient of *PEERS_DISS* is not statistically significant ($p>0.1$). These results suggest that auditors' specific risk disclosures compared to the previous year and industry peers are not incrementally informative to market participants. However, in Column (4), the interaction term is positive (0.338) and statistically significant at the 1% level. This result is also economically significant. When auditors provide average dissimilar risk disclosures in the two dimensions simultaneously, the four-day cumulative absolute abnormal returns around the annual report release date increase by 14.7%[41].

These results suggest that providing auditors' specific risk disclosures in KAMs is incrementally informative to investors only when the disclosures are different from the previous year while being dissimilar to those of industry peers. If only one of these two conditions is met, the information provided regarding risks of material misstatements is not incrementally informative to investors. This result highlights the importance for auditors to write KAMs in their own words, as encouraged by the standards (FRC, 2013b). My result is also consistent with the aim of the FRC to improve communication between auditors and users of the audit report through KAM disclosures.

Turning now to the control variables, I find that neither the length of the risk description nor the number of KAMs disclosed provide useful information to market participants. Unsurprisingly, the cumulative absolute abnormal returns around the earnings announcement

[41] As the variables of interest are centered, the intercept is the predicted score for average auditors' specific risk disclosures in both dimensions simultaneously.

date are positively and significantly at the 1% level associated with *ABS_CAR* around the annual report release date. *BETA* and *LOSS* are also significantly and positively associated with *ABS_CAR*. The other control variables are not statistically significant, except *MKT* in Column (4), which has a negative coefficient significant at the 10% level.

5. Additional Analyses

In this section, I perform several cross-sectional tests to ensure the validity of my results. I first examine bid-ask spreads and differences between service and industrial firms to proxy for information asymmetry faced by investors. Second, I examine the role of the audit committee's independence. Finally, I perform an additional analysis based on signed cumulative abnormal returns to rule out the alternative explanation that auditors' specific risk disclosures convey good news to investors.

5.1. Cross-Sectional Test Based on Information Asymmetry

I examine subsamples based on investors facing more versus less information asymmetries. By disclosing the greatest risks of material misstatements encountered during the audit process, KAM disclosures could reduce information asymmetries faced by investors about firms' risk information. Indeed, the FRC argues that KAM disclosures can be particularly useful "for those audited entities where there are fewer sources of other information" (FRC, 2016a). I expect auditors' specific risk disclosures to benefit more investors facing high information asymmetries.

I use two proxies of information asymmetry. First, I divide my sample based on bid-ask spreads above and below the industry median per fiscal year (Corwin & Schultz, 2012; Peterson et al., 2015). I use the quoted spread, which is the difference between the bid and ask prices. Second, I examine the differences between service and industrial firms. Managers in industrial firms disclose more risk-related information in their interim reports in the UK compared to

service firms (Elzahar & Hussainey, 2012). Thus, I expect auditors' specific risk disclosures to be more informative for firms providing services as managers disclose less risk-related information. I define service firms based on their SIC-1-digit code equal to 4 (Communication & Transportation), 7 (Personal & Business Services), and 8 (Health, Educational, and Engineering Services).

Table 3 - 4 reports the results of these analyses based on bid-ask spreads and industry in Panels A and B, respectively. I find that the coefficient of the interaction term *TIME_DISS*PEERS_DISS* is statistically significant at the 1% level only in the subsample of firm-year observations with a bid-ask spread above the industry median (Panel A). The difference in the coefficients between the two subsamples is statistically significant at the 5% level. In Panel B, auditors' specific risk disclosures are informative only for service firms (coefficient statistically significant at the 5% level). The difference in the coefficient between service and industrial firms is also statistically higher for service firms compared to industrial firms, significant at the 5% level. Interestingly, I find that the coefficient of *PEERS_DISS* is positive and statistically significant in the subsample of industrial firms.

This analysis suggests that auditors' specific risk disclosures are more informative for service firms as they disclose less risk-related information in their interim reports. These results are consistent with my expectation that auditors' specific risk disclosures benefit more market participants facing higher information asymmetries.

[Insert Table 3 - 4 here]

5.2. Cross-Sectional Test Based on Audit Committee Independence

In this cross-sectional test, I examine subsamples based on the audit committee's independence. The audit committee plays a critical role in overseeing the financial statements and monitoring external auditors' independence and objectivity as well as the effectiveness of

the audit process (FRC, 2016b). To achieve its role, the audit committee should consider relevant UK regulatory requirements, such as KAMs (FRC, 2016b). Independent audit committees can reduce managerial pressure on auditors' reporting decisions (e.g., Bruynseels & Cardinaels, 2014; Carcello & Neal, 2000). Hence, I expect auditors to provide more informative risk disclosures when the audit committee is solely composed of independent members.

I divide my sample based on audit committees with only independent members versus at least one non-independent member. Table 3 - 5 provides the results of this cross-sectional test. I find that the coefficient of the interaction term between the two dissimilarity variables is positive and statically significant (0.628, $p<0.01$) only when all the audit committee members are independent. The difference in the coefficients between the two groups is statistically significant at the 5% level. This result suggests that auditors' specific risk disclosures are more informative when all the audit committee members are independent. This result is consistent with the monitoring role of the audit committee (FRC, 2016b).

[Insert Table 3 - 5 here]

5.3. Alternative Explanation with Signed Cumulative Abnormal Returns

Risk disclosures are likely to be perceived as bad news by investors (Tan et al., 2017). In this analysis, I aim to rule out the alternative explanation that auditors' specific risk disclosures represent good news to investors. To this end, I examine signed cumulative abnormal returns as the dependent variable. I separate positive and negative cumulative abnormal returns to examine good and bad news separately. If auditors' specific risk disclosures do not convey good news to investors, we should not observe any increase in positive cumulative abnormal returns around the annual report release date.

I report the results of this analysis in Table 3 - 6 for positive and negative cumulative abnormal returns in Panels A and B respectively. As in the main analysis, I first report the results for each dimension of specific information in Columns (1) and (2), then together in Column (3), before examining their interaction effect in Column (4). In Panel A, none of the coefficients are statistically significant, suggesting that auditors' specific risk disclosures are not perceived as good news by investors.

In Panel B, I also examine negative cumulative abnormal returns. To ease the interpretation of the results, I take the absolute value of the negative cumulative abnormal returns. Results are similar to the main results and only the interaction term in Column (4) is statistically significant at the 5% level. Auditors' specific risk disclosures increase negative cumulative abnormal returns. This result is consistent with risk disclosures perceived as bad news rather than good news by investors (Tan et al., 2017).

[Insert Table 3 - 6 here]

6. Robustness Tests

In this section, I perform several robustness tests to ensure my results are not driven by research design choices.

6.1. Subsample Without Notice of AGM and AGM Dates

My results are highly sensitive to the choice of the annual report release date. I perform a first robustness test by excluding firms for which I did not find the annual report release date and for which I use the notice of Annual General Meeting (AGM) or the AGM date. Although some firms release the annual report when announcing the AGM date, other firms release it before. Moreover, the AGM occurs several weeks after the release of the annual report. By removing observations for which I have the notice of AGM or the AGM dates, I focus only on

firms for which I have the annual report release date. I thus expect my results to be stronger for these firms.

I report the results of this robustness test in Table 3 - 7. I first examine the two dimensions of auditors' specific risk disclosures in KAMs separately in Columns (1) and (2), before examining them together in Column (3). Finally, Column (4) shows the interaction effect of the two variables capturing the two dimensions of auditors' specific risk disclosures. I find results similar to my main findings, except that the coefficients for *TIME_DISS* are not significant anymore. This test further suggests that providing dissimilar risk disclosures in only one of the two dimensions is not incrementally informative. The interaction term in Column (4) remains significant at the 5% level. This result confirms my main findings. To be informative, auditors' risk disclosures must be specific in both dimensions simultaneously, that is they must provide both temporal and cross-sectional variations.

[Insert Table 3 - 7 here]

6.2. Alternative Windows

In this robustness test, I examine different windows to estimate the *ABS_CAR* variable. Table 3 - 8 reports the results of this analysis. For brevity, I report only the regressions with the interaction term. I examine four different windows from three to five days around the annual report release date (day 0), respectively (-1;+1); (-1;+3); (0;+2); and (0;+3) for Columns (1) to (4).

[Insert Table 3 - 8 here]

I find results similar to my main findings. The coefficients of *TIME_DISS* are negative and marginally significant at the 10% level, while the ones for *PEERS_DISS* are not statistically significant ($p>0.1$). The interaction term between these two variables is positive and statistically

significant at the 5% level in Columns (1) and (3), and at the 1% level in Columns (2) and (4). These findings suggest that my results are not sensitive to the window chosen.

6.3. Alternative Dissimilarity Measure

To ensure my results are not driven by research design choices, I use an alternative measure of dissimilarity. In this test, I use the Jaccard methodology, which enables comparing sets of words rather than their frequencies. This methodology differs from the cosine similarity in this sense. The methodology used to pair KAMs and compute the scores is the same as the one previously described in the general introduction of the Thesis (section 3, page 16).

Table 3 - 9 reports the results of this robustness test. The results are similar to the main results in Table 3 - 3. This analysis suggests that my results are not driven by the methodology used to compute the dissimilarity scores.

[Insert Table 3 - 9 here]

6.4. Other KAM Components and Abnormal Trading Volume

In untabulated analyses, I also examine the informativeness of auditors' specific disclosures in the overall KAM and the response and observation of the KAM. Again, I examine the two dimensions of auditors' specific disclosures separately, then together, and finally their interaction effect. I find that none of the coefficients for the dissimilarity scores are significant. These results suggest that only auditors' specific disclosures in the risk description of the KAM provide incremental information to investors.

I further examine abnormal trading volume, which is a different measure of the information content as it reflects changes in expectations of individual investors that may not affect changes in the overall expectations of the market (Bamber, Barron, & Stevens, 2011; Cready & Hurtt, 2002; Lennox et al., 2022). Untabulated results show that none of the coefficients for the dissimilarity variables are significant when examining the overall KAM and

its two components. Auditors' specific risk disclosures are associated with a price but no volume reaction. This suggests total consensus among investors and that investors interpret the information homogeneously (Beaver, 1968; Verrecchia, 1981).

7. Conclusion

I investigate under which conditions KAMs are informative to investors, by focusing on auditors' specific risk disclosures in KAMs. I argue that such disclosures embrace two dimensions: dissimilarity compared to (a) the previous year, and (b) all industry peers in the same fiscal year. I hypothesize and find that to be informative, the risk description of KAMs must be specific in both dimensions simultaneously. I capture specific auditors' risk disclosures with two dissimilarity metrics and examine the interaction between them.

My sample comprises premium listed firms on the London Stock Exchange from 2014 to 2019. I find that auditors' specific risk disclosures are informative to investors when they provide both temporal and cross-sectional variations. However, disclosing specific risk disclosures in only one of the two dimensions does not contain informative value. Moreover, I find that only the specific information in the risk description of the KAMs provides incremental information to investors, while specific information in the auditors' response and observation and the overall KAM does not.

This paper is of interest to researchers, as it highlights the importance to examine the content of KAM disclosures and its two components separately. Moreover, this study is the first to examine two dimensions of specific information in KAMs based on temporal and cross-sectional variations. My results are also of interest to auditors and regulators, as I show that the risk description in KAMs can be informative. However, to be informative, auditors must write specific KAMs year over year and compared to industry peers. Finally, my findings are also of

interest to investors and users of the audit report, who can find decision-useful information about firms' risks in KAM disclosures.

Although the KAM regulation is similar worldwide, there are some differences, especially with Critical Audit Matters (CAMs) in the US. CAMs in the US are based on material misstatements, while in the UK, KAMs disclosures result from the greatest risks of material misstatement. Thus, auditors report fewer CAMs than KAMs on average, and in the UK, auditors may report KAMs on different and more diverse topics compared to those in the US. Additionally, auditors face lower litigation risks in the UK compared to the US. This may result in auditors writing more specific KAMs in the UK as auditors would fear less scrutiny over their disclosures (Dannemiller et al., 2022). Moreover, institutional characteristics specific to the UK could limit the generalizability of my findings. Disclosure requirements are stricter in the US, where companies must file quarterly financial reports, resulting in a more transparent information environment. CAMs in the US may thus be less informative compared to KAMs in the UK, although CAMs refer to material misstatements that could be more relevant to investors. Further research could thus examine the informativeness of KAMs/CAMs and auditors' specific risk disclosures in different settings. Moreover, further research is needed to examine whether auditors' culture impacts the content of KAM disclosures and their informativeness.

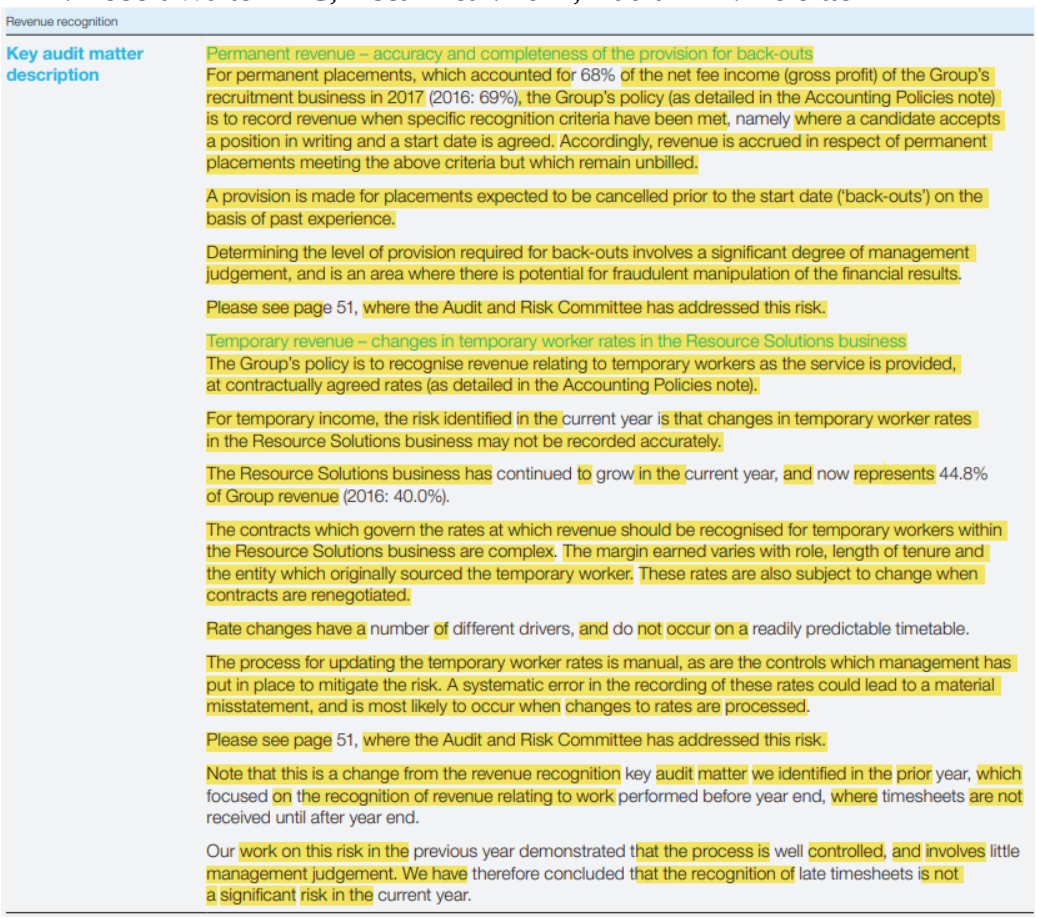
Appendices of Chapter 3

Appendix 3 - 1: KAM Examples

I provide KAM examples for illustrative purposes. Panel A displays the risk description of two KAMs about Revenue Recognition for Robert Walter PLC, a firm in the recruitment industry, in 2017 and 2018. I highlight words that are similar to both KAMs. I argue that my metric *TIME_DISS* captures differences in words for the same KAM compared to the previous year. In Panel B, I display two risk descriptions of KAMs about Revenue Recognition of two industry peers in 2018: Robert Walters PLC and PageGroup PLC, both in the recruitment industry. Again, I highlight words that are similar to both KAMs. I argue that my metric *PEERS_DISS* captures differences in words for the same KAM compared to industry peers in the same fiscal year. Words that are not highlighted reflect auditors' specific risk disclosures.

Panel A: Dissimilarity compared to the previous year

Firm: Robert Walter PLC, Fiscal Year: 2017, Audit Firm: Deloitte



Revenue recognition

Key audit matter description

Permanent revenue – accuracy and completeness of the provision for back-outs

For permanent placements, which accounted for 68% of the net fee income (gross profit) of the Group's recruitment business in 2017 (2016: 69%), the Group's policy (as detailed in the Accounting Policies note) is to record revenue when specific recognition criteria have been met, namely where a candidate accepts a position in writing and a start date is agreed. Accordingly, revenue is accrued in respect of permanent placements meeting the above criteria but which remain unbilled.

A provision is made for placements expected to be cancelled prior to the start date ('back-outs') on the basis of past experience.

Determining the level of provision required for back-outs involves a significant degree of management judgement, and is an area where there is potential for fraudulent manipulation of the financial results.

Please see page 51, where the Audit and Risk Committee has addressed this risk.

Temporary revenue – changes in temporary worker rates in the Resource Solutions business

The Group's policy is to recognise revenue relating to temporary workers as the service is provided, at contractually agreed rates (as detailed in the Accounting Policies note).

For temporary income, the risk identified in the current year is that changes in temporary worker rates in the Resource Solutions business may not be recorded accurately.

The Resource Solutions business has continued to grow in the current year, and now represents 44.8% of Group revenue (2016: 40.0%).

The contracts which govern the rates at which revenue should be recognised for temporary workers within the Resource Solutions business are complex. The margin earned varies with role, length of tenure and the entity which originally sourced the temporary worker. These rates are also subject to change when contracts are renegotiated.

Rate changes have a number of different drivers, and do not occur on a readily predictable timetable.

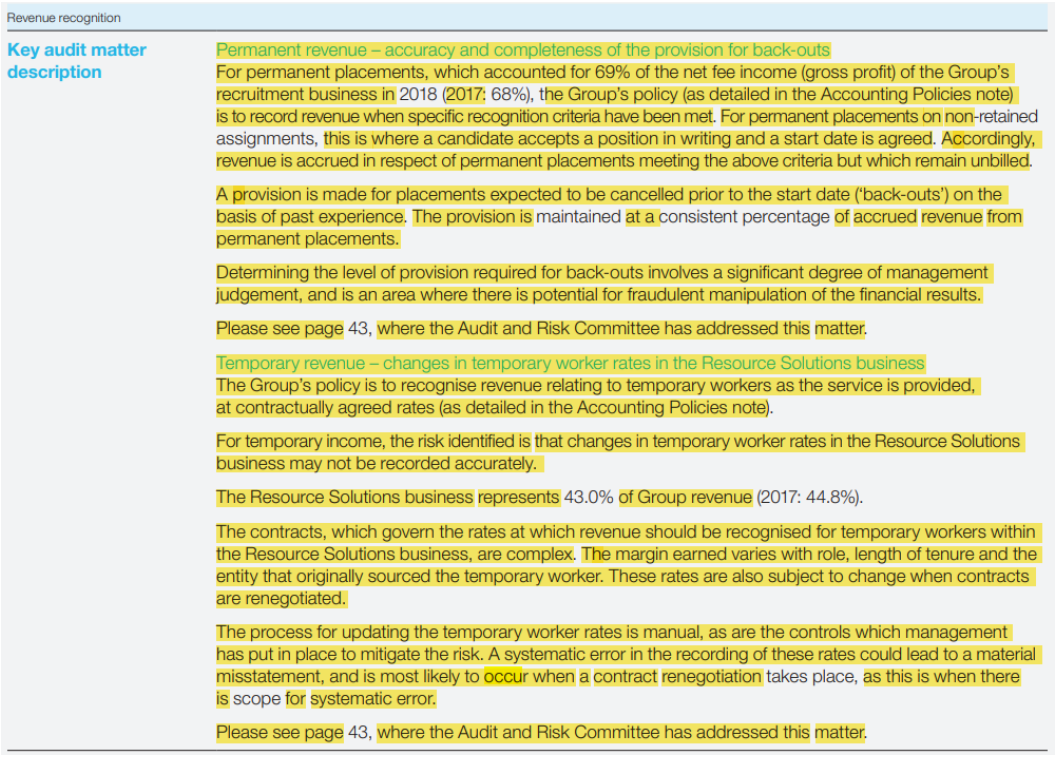
The process for updating the temporary worker rates is manual, as are the controls which management has put in place to mitigate the risk. A systematic error in the recording of these rates could lead to a material misstatement, and is most likely to occur when changes to rates are processed.

Please see page 51, where the Audit and Risk Committee has addressed this risk.

Note that this is a change from the revenue recognition key audit matter we identified in the prior year, which focused on the recognition of revenue relating to work performed before year end, where timesheets are not received until after year end.

Our work on this risk in the previous year demonstrated that the process is well controlled, and involves little management judgement. We have therefore concluded that the recognition of late timesheets is not a significant risk in the current year.

Firm: Robert Walter PLC, Fiscal Year: 2018, Audit Firm: Deloitte



Revenue recognition

Key audit matter description

Permanent revenue – accuracy and completeness of the provision for back-outs

For permanent placements, which accounted for 69% of the net fee income (gross profit) of the Group's recruitment business in 2018 (2017: 68%), the Group's policy (as detailed in the Accounting Policies note) is to record revenue when specific recognition criteria have been met. For permanent placements on non-retained assignments, this is where a candidate accepts a position in writing and a start date is agreed. Accordingly, revenue is accrued in respect of permanent placements meeting the above criteria but which remain unbilled.

A provision is made for placements expected to be cancelled prior to the start date ('back-outs') on the basis of past experience. The provision is maintained at a consistent percentage of accrued revenue from permanent placements.

Determining the level of provision required for back-outs involves a significant degree of management judgement, and is an area where there is potential for fraudulent manipulation of the financial results.

Please see page 43, where the Audit and Risk Committee has addressed this matter.

Temporary revenue – changes in temporary worker rates in the Resource Solutions business

The Group's policy is to recognise revenue relating to temporary workers as the service is provided, at contractually agreed rates (as detailed in the Accounting Policies note).

For temporary income, the risk identified is that changes in temporary worker rates in the Resource Solutions business may not be recorded accurately.

The Resource Solutions business represents 43.0% of Group revenue (2017: 44.8%).

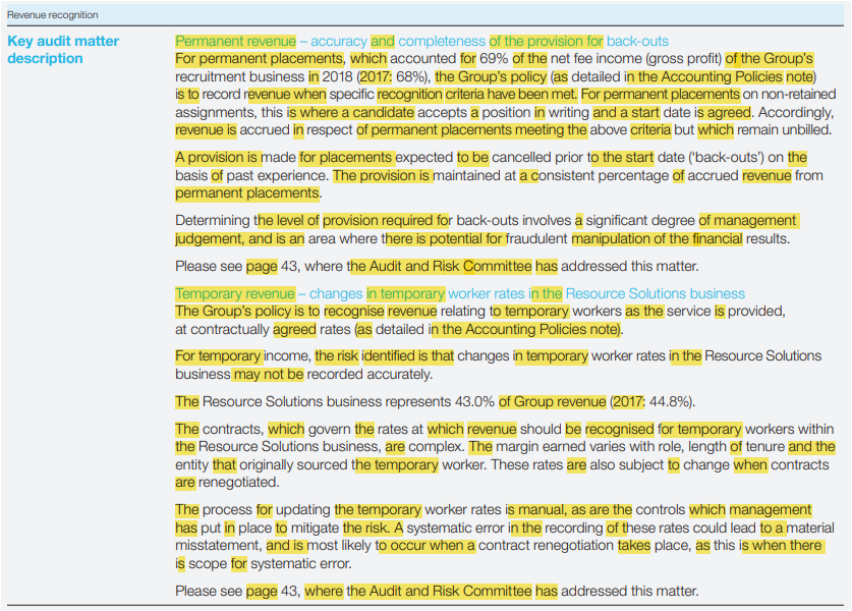
The contracts, which govern the rates at which revenue should be recognised for temporary workers within the Resource Solutions business, are complex. The margin earned varies with role, length of tenure and the entity that originally sourced the temporary worker. These rates are also subject to change when contracts are renegotiated.

The process for updating the temporary worker rates is manual, as are the controls which management has put in place to mitigate the risk. A systematic error in the recording of these rates could lead to a material misstatement, and is most likely to occur when a contract renegotiation takes place, as this is when there is scope for systematic error.

Please see page 43, where the Audit and Risk Committee has addressed this matter.

Panel B: Dissimilarity compared to industry peers

Firm: Robert Walter PLC, Fiscal Year: 2018, Audit Firm: Deloitte



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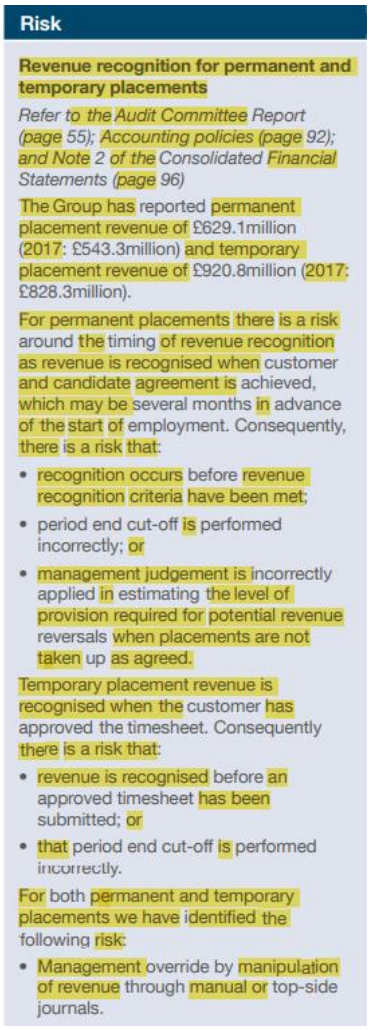
Please see page 43, where the Audit and Risk Committee has addressed this matter.

Firm: PageGroup PLC, Fiscal Year: 2018, Audit Firm: EY



Risk

Revenue recognition for permanent and temporary placements

Refer to the Audit Committee Report (page 55); Accounting policies (page 92); and Note 2 of the Consolidated Financial Statements (page 96)

The Group has reported permanent placement revenue of £629.1million (2017: £543.3million) and temporary placement revenue of £920.8million (2017: £828.3million).

For permanent placements there is a risk around the timing of revenue recognition as revenue is recognised when customer and candidate agreement is achieved, which may be several months in advance of the start of employment. Consequently, there is a risk that:

- recognition occurs before revenue recognition criteria have been met;
- period end cut-off is performed incorrectly; or
- management judgement is incorrectly applied in estimating the level of provision required for potential revenue reversals when placements are not taken up as agreed.

Temporary placement revenue is recognised when the customer has approved the timesheet. Consequently there is a risk that:

- revenue is recognised before an approved timesheet has been submitted; or
- that period end cut-off is performed incorrectly.

For both permanent and temporary placements we have identified the following risk:

- Management override by manipulation of revenue through manual or top-side journals.

Appendix 3 - 2: Construct Validity

I get two measures of dissimilarity. The first variable, *TIME_DISS*, captures auditors' specific risk disclosures for the same firm from one year to another. This measure is similar to the one used by S. V. Brown and Tucker (2011) to examine modifications of Management Discussion and Analysis (MD&A). It is a change measure by design and captures new information disclosed in the risk description of KAMs. The second variable, *PEERS_DISS*, captures auditors' specific risk disclosures among industry peers. In this Appendix, I focus on the construct validity of the second variable, *PEERS_DISS*, which has not yet been validated in the accounting literature.

First, I examine whether *PEERS_DISS* captures the level of audit risks disclosed in KAMs. I capture audit risk by audit fees, controlling for factors influencing audit fees such as client firm size, riskiness, complexity, and audit firm characteristics (e.g., Hay et al., 2006). In untabulated analyses, I find that *PEERS_DISS* is positively and significantly associated with audit fees after controlling for audit firm, year, and industry fixed effects. This result is robust to standard errors clustered in different ways: by client firm, audit firm, and audit firm-year. This result suggests that auditors' specific risk disclosures compared to industry peers are associated with greater audit risks.

Second, I examine whether *PEERS_DISS* moves in the expected direction after a change in accounting standards. To this end, I examine the introduction of IFRS15 related to Revenue Recognition. This standard was applied as of January 1st, 2018 and its objective is to improve the usefulness of the information disclosed related to the nature, amount, timing, and uncertainty of revenues and cash flows arising from a contract with customers. IFRS 15 introduces a five-step model common to all types of transactions and industries regarding revenue recognition.

I expect this standard to lead to more comparable and similar disclosures related to revenue recognition among industry peers. Thus, I expect the variable *PEERS_DISS* to reflect more similarity among firms after the introduction of IFRS 15. I find that the mean of *PEERS_DISS* is significantly lower after 2018 (difference statistically significant at the 1% level). This result is similar when I focus only on the KAMs related to Revenue Recognition. This test suggests that the risk description of KAMs becomes more similar after the introduction of IFRS 15, as expected.

Overall, these two analyses enhance the validity of my metric *PEERS_DISS.* I argue that this variable captures auditors' specific risk disclosures compared to industry peers. This variable reflects audit risks and moves in the expected direction after a change in accounting standards, such as IFRS 15.

Appendix 3 - 3: Definition of the Variables

Variables	Definition	Source
Dependent Variables		
$ABS\_CAR(-1;+2)_{i,t}$	Four-day cumulative absolute abnormal returns around the annual report release date *d=0*, from day *d=-1* to *d=+2*, for firm *i* during year *t*, calculated each day as the firm *i* returns minus same-day returns for the LSE 100 value-weighted portfolio	Thomson Reuters Eikon
Independent Variables		
$TIME\_DISS_{i,t}$	Dissimilarity among the risk description of KAMs of the same topic for each firm *i* from year *t* to year *t-1*. Dissimilarity is obtained with the cosine similarity score of the risk description of the KAM controlling for the length of the risk description following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are averaged at the firm level to get one score per firm *i* during year *t*. KAM topics, which were not disclosed in the previous year are coded as fully dissimilar. Greater scores represent more dissimilar risk descriptions. This variable is centered on the mean value of the variable	Annual Reports
$PEERS\_DISS_{i,t}$	Dissimilarity among the risk description of KAMs of the same topic for industry peers in the same fiscal year for each firm *i* during year *t*. Dissimilarity is obtained with the cosine similarity score of the entire text description of the KAM controlling for the length of the risk description following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are first averaged at the KAM level and then averaged again at the firm level to get one score per firm *i* during year *t*. KAM topics, which are unique to an industry during year *t* are coded as fully dissimilar. Greater scores represent more dissimilar KAMs. This variable is centered on the mean value of the variable	Annual Reports
Control Variables		
$LENGTH_{i,t}$	Natural logarithm of the number of words in the risk description of the KAM, after removing stop words, lemmatizing and stemming the text for firm *i* during year *t*	Annual Reports
$NB\_KAM_{i,t}$	Number of KAMs for firm *i* during year *t*	Annual Reports

Variables	Definition	Source
$ABS\_CAR\_EA(-1;+2)_{i,t}$	Absolute value of the four-days cumulative abnormal returns around the earnings announcement date *d=0,* from day *d=-1* to *d=+2,* for firm *i* during year *t*, calculated each day as the firm *i* returns minus same-day returns for the LSE 100 value-weighted portfolio	Thomson Reuters Eikon
$MKT_{i,t}$	Natural logarithm of market capitalization for firm *i* during year *t*	Thomson Reuters Eikon
$ROA_{i,t}$	Net income before extraordinary items divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$CHNI_{i,t}$	Change in net income from year *t* to year *t-1* for firm *i* during year *t* scaled by total assets	
$MTB_{i,t}$	Market-to-book ratio, measured as the firm market capitalization divided by total equity for firm *i* during year *t*	Thomson Reuters Eikon
$LOSS_{i,t}$	Dummy variable equal to 1 if the net income is negative and 0 otherwise for firm *i* during year *t*	Thomson Reuters Eikon
$LEVERAGE_{i,t}$	Total liabilities divided by total assets for firm *i* during year *t*	Thomson Reuters Eikon
$SALES\_VOL_{i,t}$	Standard deviation of firm *i* total revenue from year *t-1* to *t-3* scaled by total assets	Thomson Reuters Eikon
$BETA_{i,t}$	Beta of firm *i* during year *t*. Missing values have been replaced by 1	Thomson Reuters Eikon
$LAG_{i,t}$	Number of days between the earnings announcement date and the annual report release date for firm *i* during year *t*	Capital IQ & lse.co.uk
Independent Variables in Robustness Tests		
$TIME\_JACCARD\_DISS_{i,t}$	Dissimilarity among the risk description of KAMs of the same topic for each firm *i* from year *t* to year *t-1*. Dissimilarity is obtained with the Jaccard methodology of the risk description of the KAM controlling for the length of the risk description following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are averaged at the firm level to get one score per firm *i* during year *t*. KAM topics, which were not disclosed in the previous year are coded as fully dissimilar. Greater scores represent more dissimilar risk descriptions. This variable is centered on the mean value of the variable	Annual Reports

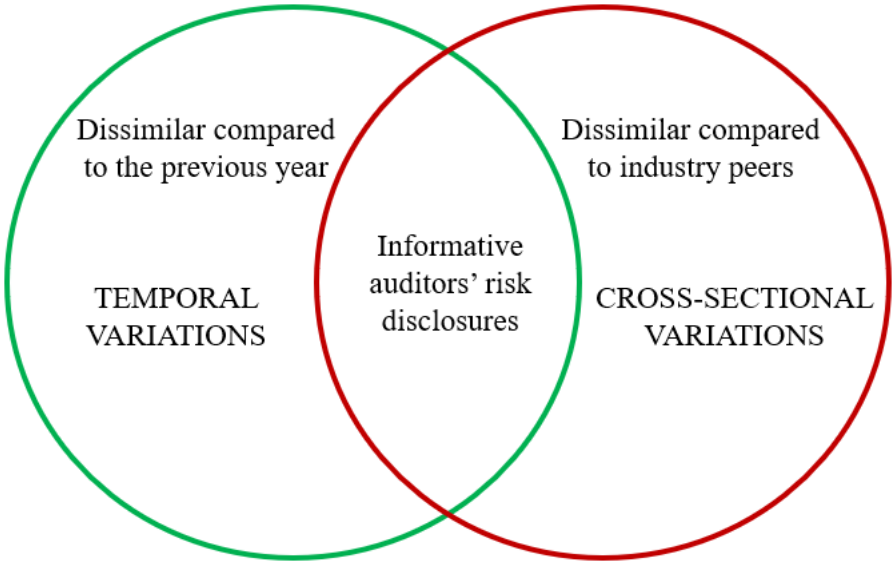
Variables	Definition	Source
$PEERS\_JACCARD\_DISS_{i,t}$	Dissimilarity among the risk description of KAMs of the same topic for industry peers in the same fiscal year for each firm *i* during year *t*. Dissimilarity is obtained with the Jaccard methodology of the entire text description of the KAM controlling for the length of the risk description following Brown and Tucker (2011). The dissimilarity score is 1 minus the similarity score. Scores are first averaged at the KAM level and then averaged again at the firm level to get one score per firm *i* during year *t*. KAM topics, which are unique to an industry during year *t* are coded as fully dissimilar. Greater scores represent more dissimilar KAMs. This variable is centered on the mean value of the variable	Annual Reports
Variables used in Additional Analyses		
$SPREAD_{i,t}$	Bid-Ask spread for firm *i* during year *t*, calculated as yearly ask minus bid prices	Thomson Reuters Eikon
$SERVICE_{i,t}$	Service firms are coded as 1 if they have the following 1-digit-SIC code: 4 (Communication & Transportation), 7 (Personal & Business Services), and 8 (Health, Educational and Engineering Services); and 0 otherwise representing the industrial firms for each firm *i* and year *t*	Thomson Reuters Eikon
$AC\_IND_{i,t}$	Percentage of independent audit committee members for firm *i* during year *t*	Thomson Reuters Eikon
$CAR(-1;+2)_{i,t}$	Signed cumulative abnormal returns four days around the annual report release date *d=0*, from day *d=-1* to *d=+2*, for firm *i* during year *t*, calculated each day as the firm *i* returns minus same-day returns for the LSE 100 value-weighted portfolio	Thomson Reuters Eikon

Missing data has been hand collected from annual reports.

Figures of Chapter 3

Figure 3 - 1: The Two Dimensions of Auditors' Specific Risk Disclosures

The two circles represent the two dimensions of auditors' specific risk disclosures: dissimilarity compared to (a) the previous year in green and (b) industry peers in red. Each dimension reflects different information characteristics. Auditors' risk disclosures are informative when they provide both temporal and cross-sectional variations simultaneously.



Tables of Chapter 3

Table 3 - 1: Sample Selection

Table 3 - 1 shows the sample selection procedure; in Panel B, it shows the number of firms and KAMs each year; and in Panel C, it shows the distribution of KAM topics. From 2014 to 2019, the sample includes 1,276 firm-year observations premium-listed on the London Stock Exchange (LSE). Data from annual reports have been used to fill in missing observations.

Panel A: Sample Selection Process

Sample period: firms with fiscal year-end after September 30th, 2013 to December 31st, 2019	
Total firm-year observations premium listed on the London Stock Exchange	4,594
(-) firm-year observations in the financial industry (SIC codes 6000-6900)	-2,602
Total non-financial firm-year observations premium listed on the LSE	**1,992**
(-) Firm-year observations without annual reports	-61
(-) Firm-year observations without KAMs	-17
Total firm-year observations	**1,914**
(-) Firm-year observations with a fiscal period other than 12 months	-6
(-) Firm-year observations without earnings or annual report release dates found	-7
(-) Observations without KAM data in the previous year	-339
(-) Firm-year observations with earnings and annual reports released the same day	-56
(-) Firm-year observations with missing variables	-230
Total firm-year observations from 2014 to 2019	**1,276**

Panel B: Number of Firms and KAMs per Year

Year	Nb Firms	*Percent*	Nb KAMs	*Percent*
2014	105	*8.230*	421	*9.050*
2015	200	*15.670*	747	*16.060*
2016	230	*18.030*	827	*17.780*
2017	230	*18.030*	804	*17.280*
2018	259	*20.300*	920	*19.780*
2019	252	*19.750*	933	*20.060*
Total	1,276	*100*	4,652	*100*

Panel C: Distribution of KAM Topics at the Firm-KAM Level

KAM Topic	Nb of Firm-KAMs	*Percent*
Revenue recognition	747	*16.060*
Valuation of intangible assets	743	*15.970*
Taxation	450	*9.670*
Valuation of liabilities	398	*8.560*
Valuation of properties	377	*8.100*
Acquisitions and disposals	373	*8.020*
Pension and other post-employment benefits	307	*6.600*
Valuation of inventories	303	*6.510*
Related party transactions	165	*3.550*
Exceptional items	134	*2.880*
Internal controls	116	*2.490*
Impairment of loans and receivables	108	*2.320*
Development costs	103	*2.210*
Valuation of securities and financial instruments	96	*2.060*
Political and economic risks	82	*1.760*
Going concern	81	*1.740*
Compliance with laws and regulations	69	*1.480*
Total	4,652	*100*

Table 3 - 2: Descriptive Statistics and Correlation Matrix

In Panel A, Table 3 - 2 reports the descriptive statistics; in Panel B, it shows the correlation matrix. In Panel B, lower- and upper-triangular cells respectively represent Pearson's correlation coefficients and Spearman's rank correlation. From 2014 to 2019, the sample includes 1,276 firm-year observations premium-listed on the LSE. Variables in bold are significant at the 10% level. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3.

Panel A: Descriptive Statistics

	N	Mean	SD	Min	P25	Median	P75	Max
$TIME\_DISS_{i,t}$	1,276	0.000	0.259	-0.407	-0.217	-0.018	0.196	0.591
$PEERS\_DISS_{i,t}$	1,276	0.000	0.050	-0.157	-0.030	0.005	0.036	0.103
$LENGTH_{i,t}$	1,276	4.114	0.400	2.674	3.902	4.127	4.369	4.992
$NB\_KAM_{i,t}$	1,276	3.640	1.500	1.000	3.000	3.000	5.000	8.000
$ABS\_CAR(-1;+2)_{i,t}$	1,276	0.071	0.068	0.009	0.032	0.050	0.078	0.379
$ABS\_CAR\_EA(-1;+2)_{i,t}$	1,276	0.111	0.088	0.017	0.057	0.090	0.134	0.581
$MKT_{i,t}$	1,276	20.876	1.762	16.811	19.698	20.780	22.089	25.288
$ROA_{i,t}$	1,276	0.055	0.079	-0.234	0.021	0.051	0.088	0.320
$CHNI_{i,t}$	1,276	0.002	0.060	-0.254	-0.012	0.005	0.023	0.196
$MTB_{i,t}$	1,276	3.310	3.961	-8.925	1.310	2.275	4.293	21.995
$LOSS_{i,t}$	1,276	0.139	0.346	0.000	0.000	0.000	0.000	1.000
$LEVERAGE_{i,t}$	1,276	0.579	0.218	0.131	0.424	0.563	0.710	1.369
$SALES\_VOL_{i,t}$	1,276	0.119	0.120	0.008	0.047	0.084	0.142	0.682
$BETA_{i,t}$	1,276	0.848	0.439	0.023	0.547	0.852	1.087	2.228
$LAG_{i,t}$	1,276	28.821	15.997	1.000	19.000	27.000	36.000	89.000
$BIG4_{i,t}$	1,276	0.930	0.255	0.000	1.000	1.000	1.000	1.000
$SPREAD_{i,t}$	1,260	0.009	0.058	-0.288	-0.002	0.007	0.016	0.973
$SERVICE_{i,t}$	1,276	0.317	0.466	0.000	0.000	0.000	1.000	1.000
$AC\_IND_{i,t}$	949	0.923	0.141	0.286	0.833	1.000	1.000	1.000

Panel B: Correlation Matrix

	$TIME\_DISS_{i,t}$	$PEERS\_DISS_{i,t}$	$LENGTH_{i,t}$	$NB\_KAM_{i,t}$	$ABS\_CAR(-1;+2)_{i,t}$	$ABS\_CAR\_EA(-1;+2)_{i,t}$	$MKT_{i,t}$	$ROA_{i,t}$	$CHNI_{i,t}$	$MTB_{i,t}$	$LOSS_{i,t}$	$LEVERAGE_{i,t}$	$SALES\_VOL_{i,t}$	$BETA_{i,t}$	$LAG_{i,t}$
$TIME\_DISS_{i,t}$		**0.172**	0.016	**0.196**	0.002	0.018	-0.005	-0.133	-0.083	-0.057	**0.109**	**0.051**	-0.014	0.009	0.025
$PEERS\_DISS_{i,t}$	**0.144**		-0.038	**0.052**	-0.002	-0.051	-0.029	-0.107	-0.013	-0.099	**0.099**	0.046	0.000	0.005	0.013
$LENGTH_{i,t}$	-0.002	-0.049		0.042	**0.092**	**0.078**	**0.123**	-0.209	-0.115	-0.102	**0.158**	0.040	-0.044	**0.064**	0.023
$NB\_KAM_{i,t}$	**0.183**	**0.047**	**0.069**		-0.052	-0.035	**0.294**	-0.268	-0.169	-0.084	**0.123**	**0.284**	-0.157	**0.095**	-0.008
$ABS\_CAR(-1;+2)_{i,t}$	-0.036	-0.052	**0.145**	-0.022		**0.327**	-0.200	-0.146	-0.104	-0.121	**0.161**	-0.032	**0.053**	**0.079**	-0.017
$ABS\_CAR\_EA(-1;+2)_{i,t}$	**0.052**	-0.036	**0.079**	-0.036	**0.362**		-0.154	-0.130	-0.102	-0.081	**0.171**	0.016	**0.081**	**0.082**	-0.032
$MKT_{i,t}$	0.007	-0.002	**0.134**	**0.335**	-0.067	-0.222		**0.148**	0.025	**0.300**	-0.162	**0.100**	-0.187	**0.227**	-0.092
$ROA_{i,t}$	-0.130	-0.118	-0.187	-0.217	-0.135	-0.200	**0.158**		**0.432**	**0.459**	-0.599	-0.199	**0.161**	-0.103	-0.018
$CHNI_{i,t}$	-0.068	-0.027	-0.109	-0.132	-0.103	-0.163	0.041	**0.515**		**0.171**	-0.341	-0.051	**0.178**	-0.022	-0.014
$MTB_{i,t}$	-0.021	-0.033	-0.070	-0.049	-0.079	-0.078	**0.206**	**0.347**	**0.108**		-0.242	**0.157**	**0.164**	-0.075	-0.065
$LOSS_{i,t}$	**0.107**	**0.095**	**0.155**	**0.139**	**0.147**	**0.221**	-0.157	-0.631	-0.414	-0.141		**0.083**	0.014	**0.118**	0.019
$LEVERAGE_{i,t}$	0.042	0.025	**0.047**	**0.256**	0.002	0.037	**0.086**	-0.096	-0.048	**0.097**	**0.077**		-0.021	**0.054**	0.025
$SALES\_VOL_{i,t}$	-0.002	0.044	-0.043	-0.150	0.011	**0.074**	-0.225	**0.141**	**0.100**	**0.223**	0.029	**0.073**		-0.059	0.017
$BETA_{i,t}$	0.004	0.030	**0.071**	**0.089**	**0.148**	**0.130**	**0.184**	-0.105	-0.033	-0.053	**0.123**	**0.065**	-0.034		0.013
$LAG_{i,t}$	0.014	0.003	0.022	-0.017	-0.021	-0.005	-0.107	0.006	0.006	-0.069	0.016	0.016	**0.049**	0.033	

Table 3 - 3: Regression of Risk Dissimilarity on Absolute Cumulative Abnormal Returns

Table 3 - 3 reports the main regression results investigating the association between auditors' specific risk disclosures and investors' reactions. The sample period covers the years 2014 through 2019. Columns (1) and (2) display results for each dimension of dissimilarity, respectively compared to (a) the previous year, and (b) industry peers. Column (3) reports results with the two dimensions of dissimilarity, while Column (4) displays results with its interaction term. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively.

VARIABLES	Expected Sign	(1) *ABS_CAR (-1;+2)$_{i,t}$*	(2) *ABS_CAR (-1;+2)$_{i,t}$*	(3) *ABS_CAR (-1;+2)$_{i,t}$*	(4) *ABS_CAR (-1;+2)$_{i,t}$*
TIME_DISS$_{i,t}$	?	-0.011*		-0.012*	-0.012*
		(0.006)		(0.006)	(0.006)
PEERS_DISS$_{i,t}$	?		0.020	0.026	0.021
			(0.036)	(0.036)	(0.036)
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?				0.338***
					(0.129)
LENGTH$_{i,t}$	+	0.001	0.001	0.001	0.001
		(0.005)	(0.005)	(0.005)	(0.005)
NB_KAM$_{i,t}$	+	-0.001	-0.001	-0.001	-0.001
		(0.001)	(0.001)	(0.001)	(0.001)
ABS_CAR_EA(-1;+2)$_{i,t}$	+	0.114***	0.113***	0.115***	0.113***
		(0.030)	(0.030)	(0.030)	(0.030)
MKT$_{i,t}$	-	-0.002	-0.002	-0.002	-0.002*
		(0.001)	(0.001)	(0.001)	(0.001)
ROA$_{i,t}$	+	-0.039	-0.035	-0.037	-0.039
		(0.027)	(0.027)	(0.027)	(0.027)
CHNI$_{i,t}$	+	0.018	0.017	0.018	0.020
		(0.034)	(0.035)	(0.035)	(0.034)
MTB$_{i,t}$	-	-0.000	-0.000	-0.000	-0.000
		(0.000)	(0.000)	(0.000)	(0.000)
LOSS$_{i,t}$	-	0.012*	0.011*	0.011*	0.012*
		(0.007)	(0.007)	(0.007)	(0.007)
LEVERAGE$_{i,t}$	-	-0.005	-0.005	-0.005	-0.006
		(0.007)	(0.007)	(0.007)	(0.007)
SALES_VOL$_{i,t}$	-	-0.000	-0.001	-0.001	-0.001
		(0.012)	(0.012)	(0.012)	(0.012)

$BETA_{i,t}$	+	0.015***	0.015***	0.015***	0.015***
		(0.004)	(0.004)	(0.004)	(0.004)
$LAG_{i,t}$	-	-0.000	-0.000	-0.000	-0.000
		(0.000)	(0.000)	(0.000)	(0.000)
Constant		0.146***	0.147***	0.146***	0.147***
		(0.030)	(0.030)	(0.030)	(0.030)
Observations		1,276	1,276	1,276	1,276
Adjusted R-squared		0.355	0.353	0.355	0.359
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

Table 3 - 4: Cross-Sectional Test based on Information Asymmetry

Table 3 - 4 reports the cross-sectional test investigating the impact of information asymmetry on the main results, proxied by bid-ask spreads in Panel A and industrial versus service firms in Panel B. I display only the regression of interest with the interaction term. The sample period covers the years 2014 through 2019. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

Panel A: Bid-Ask Spread Analysis

		SPREAD >= industry-year median	SPREAD < industry-year median	
	Expected	(1)	(2)	*Test of coeff.*
VARIABLES	Sign	*ABS_CAR (-1;+2)$_{i,t}$*	*ABS_CAR (-1;+2)$_{i,t}$*	*Differences*
TIME_DISS$_{i,t}$	?	-0.010	-0.002	
		(0.009)	(0.006)	
PEERS_DISS$_{i,t}$	?	0.034	-0.012	
		(0.052)	(0.037)	
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?	0.435***	-0.031	*0.468***
		(0.166)	(0.126)	*(0.222)*
Controls		*YES*	*YES*	
Observations		765	511	
Adjusted R-squared		0.386	0.236	
Industry-Year FE		YES	YES	
Audit Firm FE		YES	YES	
Client Firm Clusters		YES	YES	

Panel B: Analysis based on Industrial versus Service Firms

		SERVICE = 1	SERVICE = 0	
	Expected	(1)	(2)	*Test of coeff.*
VARIABLES	Sign	*ABS_CAR (-1;+2)$_{i,t}$*	*ABS_CAR (-1;+2)$_{i,t}$*	*Differences*
TIME_DISS$_{i,t}$	?	-0.017	-0.009	
		(0.012)	(0.007)	
PEERS_DISS$_{i,t}$	?	-0.092	0.010**	
		(0.057)	(0.046)	
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?	0.718***	0.070	*0.648***
		(0.203)	(0.162)	*(0.292)*
Controls		*YES*	*YES*	
Observations		405	871	
Adjusted R-squared		0.357	0.368	
Industry-Year FE		YES	YES	
Audit Firm FE		YES	YES	
Client Firm Clusters		YES	YES	

Table 3 - 5: Cross-Sectional Test based on Audit Committee Independence

Table 3 - 5: reports the cross-sectional test based on audit committee independence. I display only the regression of interest with the interaction term. The sample period covers the years 2014 through 2019. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

		AC_IND=1	AC_IND<1	
	Expected	(1)	(2)	*Test of coeff.*
VARIABLES	Sign	*ABS_CAR (-1;+2)$_{i,t}$*	*ABS_CAR (-1;+2)$_{i,t}$*	*Differences*
TIME_DISS$_{i,t}$	?	-0.022**	-0.004	
		(0.009)	(0.015)	
PEERS_DISS$_{i,t}$	?	0.050	0.113	
		(0.054)	(0.089)	
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?	0.628***	-0.227	*0.856***
		(0.186)	(0.350)	*(0.368)*
Controls		*YES*	*YES*	
Observations		686	263	
Adjusted R-squared		0.372	0.407	
Industry-Year FE		YES	YES	
Audit Firm FE		YES	YES	
Client Firm Clusters		YES	YES	

Table 3 - 6: Alternative Analysis with Signed CAR

Table 3 - 6: reports the main analysis with positive and negative cumulative abnormal returns as the dependent variable in Panels A and B respectively. To ease the interpretation of the results, negative cumulative abnormal returns are in absolute value. The sample period covers the years 2014 through 2019. Columns (1) and (2) display results for each dimension of dissimilarity, respectively compared to (a) the previous year, and (b) industry peers. Column (3) reports results with the two dimensions of dissimilarity, while Column (4) displays results with its interaction term. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

Panel A: Positive Cumulative Abnormal Returns

VARIABLES	Expected Sign	(1) *CAR* $(-1;+2)_{i,t} > 0$	(2) *CAR* $(-1;+2)_{i,t} > 0$	(3) *CAR* $(-1;+2)_{i,t} > 0$	(4) *CAR* $(-1;+2)_{i,t} > 0$
$TIME\_DISS_{i,t}$	?	-0.005		-0.004	-0.005
		(0.005)		(0.005)	(0.005)
$PEERS\_DISS_{i,t}$	?		-0.014	-0.011	-0.008
			(0.030)	(0.030)	(0.030)
$TIME\_DISS_{i,t}$ x $PEERS\_DISS_{i,t}$	?				0.166
					(0.113)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		628	628	628	628
Adjusted R-squared		0.147	0.146	0.146	0.148
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

Panel B: Negative Cumulative Abnormal Returns

VARIABLES	Expected Sign	(1) *CAR* $(-1;+2)_{i,t} <= 0$	(2) *CAR* $(-1;+2)_{i,t} <= 0$	(3) *CAR* $(-1;+2)_{i,t} <= 0$	(4) *CAR* $(-1;+2)_{i,t} <= 0$
$TIME\_DISS_{i,t}$	?	-0.003		-0.003	-0.002
		(0.005)		(0.005)	(0.005)
$PEERS\_DISS_{i,t}$	?		0.017	0.018	0.009
			(0.031)	(0.030)	(0.031)
$TIME\_DISS_{i,t}$ x $PEERS\_DISS_{i,t}$	?				0.201**
					(0.099)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		648	648	648	648
Adjusted R-squared		0.144	0.144	0.143	0.147
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

Table 3 - 7: Robustness Test without AGM or Notice of AGM

Table 3 - 7 reports the main analysis after removing firms for which the annual report release date was not available, as a robustness test. In this analysis, I remove observations for which I use the Annual General Meeting (AGM) or notice of AGM date. The sample period covers the years 2014 through 2019. Columns (1) and (2) display results for each dimension of dissimilarity, respectively compared to (a) the previous year, and (b) industry peers. Column (3) reports results with the two dimensions of dissimilarity, while Column (4) displays results with its interaction term. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

VARIABLES	Expected Sign	(1) *ABS_CAR (-1;+2)$_{i,t}$*	(2) *ABS_CAR (-1;+2)$_{i,t}$*	(3) *ABS_CAR (-1;+2)$_{i,t}$*	(4) *ABS_CAR (-1;+2)$_{i,t}$*
TIME_DISS$_{i,t}$	?	-0.011		-0.011	-0.011
		(0.007)		(0.007)	(0.007)
PEERS_DISS$_{i,t}$	?		-0.003	0.004	0.004
			(0.038)	(0.038)	(0.038)
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?				0.324**
					(0.137)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		1,117	1,117	1,117	1,117
Adjusted R-squared		0.381	0.380	0.381	0.384
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

Table 3 - 8: Robustness Test with Additional Windows

Table 3 - 8 reports the main analysis with different windows to compute the absolute cumulative abnormal returns, as a robustness test. The sample period covers the years 2014 through 2019. I display only the regression of interest with the interaction term. In Columns (1) to (4), the absolute cumulative abnormal returns are computed based on three to five days around the annual report release date (*d=0*), respectively from day -1 to day +1; from day -1 to day +3; from day 0 to day +2; and from day 0 to day +3. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3. For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

VARIABLES	Expected Sign	(1) *ABS_CAR (-1;+1)$_{i,t}$*	(2) *ABS_CAR (-1;+3)$_{i,t}$*	(3) *ABS_CAR (0;+2)$_{i,t}$*	(4) *ABS_CAR (0;+3)$_{i,t}$*
TIME_DISS$_{i,t}$	?	-0.009*	-0.020**	-0.008*	-0.014**
		(0.005)	(0.008)	(0.005)	(0.006)
PEERS_DISS$_{i,t}$	?	0.012	0.043	0.011	0.026
		(0.031)	(0.048)	(0.028)	(0.035)
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?	0.207**	0.451***	0.236**	0.327***
		(0.101)	(0.163)	(0.095)	(0.120)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		1,375	1,203	1,310	1,236
Adjusted R-squared		0.309	0.368	0.313	0.358
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

Table 3 - 9: Robustness Test with an Alternative Measure of Dissimilarity

Table 3 - 9 reports the main analysis with an alternative measure of dissimilarity, that is the Jaccard methodology, as a robustness test. The sample period covers the years 2014 through 2019. Columns (1) and (2) display results for each dimension of dissimilarity, respectively compared to (a) the previous year, and (b) industry peers. Column (3) reports results with the two dimensions of dissimilarity, while Column (4) displays results with its interaction. The regressions include industry-year, and audit firm fixed effects. Standard errors are clustered by client firms and are reported in parentheses. All the continuous variables are winsorized at the 1% and 99% levels. All the variables are defined in Appendix 3 - 3 For 1, 5, and 10%, the significance levels are indicated by ***, **, and *, respectively. For the sake of brevity, control variables are included but not reported.

VARIABLES	Expected Sign	(1) *ABS_CAR (-1;+2)$_{i,t}$*	(2) *ABS_CAR (-1;+2)$_{i,t}$*	(3) *ABS_CAR (-1;+2)$_{i,t}$*	(4) *ABS_CAR (-1;+2)$_{i,t}$*
TIME_DISS$_{i,t}$	?	-0.012*		-0.012*	-0.013**
		(0.006)		(0.006)	(0.006)
PEERS_DISS$_{i,t}$	?		0.016	0.021	0.011
			(0.042)	(0.042)	(0.042)
TIME_DISS$_{i,t}$ x PEERS_DISS$_{i,t}$	?				0.428***
					(0.149)
Controls		*YES*	*YES*	*YES*	*YES*
Observations		1,276	1,276	1,276	1,276
Adjusted R-squared		0.355	0.353	0.355	0.360
Industry-Year FE		YES	YES	YES	YES
Audit Firm FE		YES	YES	YES	YES
Client Firm Clusters		YES	YES	YES	YES

GENERAL CONCLUSION

1. Concluding Remarks

My Ph.D. Thesis is composed of three Chapters, each examining a different research question related to the content of Key Audit Matters (KAMs). Despite KAMs being implemented for about a decade, research on the textual content of KAMs is still sparse and the literature on KAMs, especially regarding their informative content, is mixed. Critics fear KAMs would be boilerplate, and KAMs are more likely to be similar among industry peers facing the same type of risk in the same time period. Differences in the wording of such KAMs thus reflects client-specific information about the audit.

Providing client-specific information in KAMs is important to provide incremental information for financial statements' users regarding the risks the client face, the audit undertaken and its quality. By providing a granular analysis of the content of KAMs thanks to textual analysis tools, I capture differences in words written by auditors for the same type of KAMs with measures of dissimilarity. My Thesis aims to go beyond prior literature examining the implementation of KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022) by providing an in-depth analysis of its content, both regarding its determinants and consequences.

Although textual analysis is gaining interest in accounting research, it is still sparse in auditing research. Indeed, KAMs represent the biggest change in the audit report for the past 70 years, expanding its standardized format based on a template with first-time qualitative disclosures in it. Therefore, KAMs provide opportunities to examine risk disclosures from auditors' perspectives. Using hand-collected data from premium listed firms in the United Kingdom, my analyses provide the longest time series possible and complement the KAM literature examining the first years of the KAM implementation (e.g., Burke et al., 2022; Carlé et al., 2023; Gutierrez et al., 2018).

In Chapter 1, we examine the determinants of KAM dissimilarity and audit consequences related to audit quality and audit delay. We find that KAM dissimilarity is mostly driven by client firm and audit partner unobservable characteristics (fixed effects). Client firm's riskiness is associated with more dissimilar KAMs. We find some evidence that KAM dissimilarity is associated with higher audit quality. KAM dissimilarity is also associated with longer audit delays of about two days.

In Chapter 2, we analyze the association between KAM dissimilarity and audit risks by linking the KAM components with those of audit risks. We find that dissimilarity in the risk description is associated with greater inherent and control risks, while dissimilarity in the auditors' response and observation is associated with lower detection risks. Overall, dissimilarity in the entire KAM is associated with lower audit risks.

In Chapter 3, I investigate the informativeness of dissimilar risk descriptions in KAMs that proxy for auditors' specific risk disclosures. I find that KAMs can be informative but only under certain conditions. To be informative, auditors' risk disclosures must be specific (dissimilar) in two dimensions at the same time. They must be different compared to the same disclosure from the previous year and industry peers simultaneously. Providing dissimilar risk disclosures in only one of the dimensions does not provide informative content to market participants.

Overall, my Thesis contributes to the auditing literature (e.g., Felix et al., 2001; Hackenbrack & Knechel, 1997; Hogan & Wilkins, 2008; Mock & Wright, 1999) and the growing literature on KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022) by providing a granular analysis of the content of KAM disclosures. First, throughout the three studies, I consistently find that the two KAM components, namely the risk description and the auditor's response and observation, serve different purposes. It is thus important for future research to examine them separately.

Second, examining dissimilarity in KAMs for the same type of risk alleviates concerns about differences in underlying economic activities among firms. Despite KAMs providing mostly similar information, they provide enough variations in the wording to examine their content. My measure of dissimilarity thus goes beyond examining the implementation of KAMs (e.g., Burke et al., 2022; Gutierrez et al., 2018; Lennox et al., 2022; Reid et al., 2019), and prior measures examining features of KAMs such as their number, length, topic, and tone (e.g., Abbott & Buslepp, 2022; Al-mulla & Bradbury, 2022; Lennox et al., 2022; Rousseau & Zehms, 2022). I also contribute to the textual analysis literature in accounting (e.g., Bochkay et al., 2022) by focusing on an under-researched area of textual analysis in the auditing literature. KAMs provide the first opportunity to examine qualitative disclosures from auditors that intend to be specific and informative.

My results also have practical implications for standard setters who strive to improve the informativeness of audit reports through KAMs. My analyses can partly help them assess whether their stated objectives are achieved. KAMs aim to improve communications between auditors and users of audit reports. The results of my Thesis show that client-specific information in KAMs is valuable as it reflects audit risks, audit effort and audit quality. Moreover, KAMs can be informative but only if they provide new information compared to the previous year and industry peers. However, more should be done regarding the auditors' response for market participants to appreciate its content. My findings can benefit regulators to refine their standards by better understanding the determinants of dissimilar KAMs and some of their consequences.

My research is also of interest to market participants and auditors. I provide evidence that auditors can produce useful disclosures for users of the audit reports through KAMs. My results show the importance to decompose KAMs into its two components, as they serve different purposes. Moreover, I provide evidence on the importance to write specific KAMs.

Auditors should thus refrain from developing templates related to KAMs and they should rather detail the risks and procedures of each audit engagement.

2. Limitations and Future Research

Despite providing additional and robust analyses to ensure the validity of my findings, theoretical and empirical challenges remain. In this section, I discuss the limitations of my dissertation and avenues for future research.

My sample is comprised of large UK firms, the first mandated to disclose KAMs. However, KAMs are now available worldwide. My sample focusing solely on UK firms can trigger questions about the generalizability and external validity of my findings. While I expect my results to be generalizable to other settings, since the KAM regulation is similar worldwide, there are some differences with CAMs in the US. Indeed, while KAMs refer to the greatest risks of material misstatements encountered during the audit process, CAMs relate to material risks. Moreover, other factors, such as institutional characteristics specific to the UK and cultural differences can impact auditors' writing KAMs differently in different countries, possibly leading to different results. To address these concerns, further research is necessary by increasing the sample size to all the UK firms and examining KAM dissimilarity in different jurisdictions.

Examining the US setting is especially interesting, as CAMs refer to material misstatements, that could thus lead to more informative disclosures. However, disclosure requirements are stricter in the US, where companies must file quarterly financial reports, resulting in a more transparent information environment. Moreover, auditors face lower litigation risks in the UK compared to the US. This may result in auditors writing more specific KAMs in the UK as auditors would fear less scrutiny over their disclosures (Dannemiller et al., 2022). If CAMs are boilerplate and if the information is already known by the market, CAM

disclosures are unlikely to be informative. Further research could examine the content of CAMs in the US and their informativeness to market participants.

My dissimilarity measures are affected by the design choices I made. There is a tradeoff between the comparability (size of the groups) and the specificity of the groups. I thus chose the industry-level SIC1-digit, which is less precise than the SIC-2-digits to create a benchmark of industry peers. This constraint enables me to have enough observations within each group to ensure comparability among firms. Moreover, I use fixed effects to control for audit firms' unobservable characteristics instead of grouping KAMs at the audit firm level which would reduce the size of each group. Further research could examine dissimilarity in KAMs among other groups, such as dissimilarity within audit firms.

My research is limited to the data publicly available. Throughout my dissertation, I rely on different proxies to perform my analyses. Despite having been widely used in the literature, each proxy provides its limitations. In Chapter 1, I use several proxies of audit quality following Aobdia (2019), but audit quality is unobservable and there is no perfect measure to proxy for it. Similarly, in Chapter 2, I capture audit risks with audit fees. This measure is quite noisy as audit fees proxy for many audit characteristics such as audit pricing (e.g., Simunic, 1980), audit effort (e.g., Davis et al., 1993; Lobo & Zhao, 2013), audit quality (e.g., Aobdia, 2019), auditor independence (e.g., Ashbaugh et al., 2003; Frankel et al., 2002), economic bonding (e.g., DeAngelo, 1981; Hoitash et al., 2007; Hope et al., 2009; Simunic, 1980), auditors' litigation risks (e.g., Simunic & Stein, 1996), and audit risk (e.g., Cassell et al., 2011; Hogan & Wilkins, 2008). Finally, in Chapter 3, I focus on the absolute value of cumulative abnormal returns following Gutierrez et al. (2018). I chose this proxy to ensure comparability with prior KAM research using the same setting and examining the informativeness of the implementation of KAMs. However, there are several proxies used in the literature to capture market reactions and informativeness. Moreover, these proxies may be sensitive to the design choices made. Further

research is thus needed to find better proxies used in the auditing literature. Research using proprietary data with privileged access to audit firms will be particularly relevant. Following the findings in Chapter 2, additional research is needed to disentangle the audit effort and audit quality component from the audit risk premium in audit fees.

Although the KAM literature is growing fast, KAMs provide plenty of research opportunities. Building on additional analyses of Chapter 2, I believe that examining how KAM disclosures affect executive compensation would enrich our understanding of the consequences of this new disclosure requirement. Executive compensation is significantly associated with audit fees, suggesting higher audit risks (e.g., Kannan et al., 2014; Sharma et al., 2021; Vafeas & Waegelein, 2007). KAMs can bring attention to internal control deficiencies and heightened risks in the firm enabling the board of directors to make better-informed decisions about executive compensation. Moreover, management changes its disclosures when it is referenced by a KAM (Burke et al., 2022). KAM disclosures could thus lead to more transparent information related to executive compensation in the annual report.

Future research can focus on the impact of audit firms lobbying for their clients on KAM disclosures, and how auditors' culture shapes the content of KAMs. Further research can examine cultural differences in the language of the country and the language used in writing the audit report. Additionally, gender distinctions in the language (e.g. Galor, Özak, & Sarid, 2016; Jeny & Santacreu-Vasut, 2017) can provide insights into cultural attitudes towards audit partner gender's role in KAM disclosures. Moreover, cross-sectional studies in different countries are sparse and differences among institutional settings remain to be studied.

Examining specific KAM topics and KAM disclosures of financial firms can also provide promising future research articles. Most of the KAM literature focuses on non-financial firms due to the different risks and accounting structures of financial firms. Effective at the end of 2023, additional requirements in the audit report will further enhance research opportunities

in KAMs and audit research. Among others, these new requirements include assessing separately inherent and control risks and documenting the evaluation of certain internal controls and the rationale for significant judgments made regarding the risks identified (AICPA, 2021). All these avenues for future research should be relevant for standard setters who strive to enhance the communicative value of the audit report and have practical implications for market participants.

APPENDICES

Appendix A: Examples of KAMs

Key Audit Matters for the firm 4 Imprint Group PLC in 2013

Four KAMs are reported with the title preceding each KAM. The risk description is disclosed on the left and the auditors' response is on the right.

Area of focus	How the scope of our audit addressed the area of focus
Accounting for defined benefit pension scheme assets and liabilities	
We focused on this area because the Group operates a large defined benefit pension scheme which, although closed to future accrual, has a significant deficit which is sensitive to changes in actuarial assumptions. Modest changes to the assumptions used to value the Group's net pension deficit could have a significant effect on the results and financial position of the Group.	Our audit procedures included evaluating the assumptions and methodologies used by the Group's actuarial advisors, in particular those relating to the discount rate, inflation and mortality assumptions. We compared the Group's assumptions to externally derived data as well as our own, independently formed, assessments in relation to these and other key inputs in assessing whether the assumptions used were reasonable. We also assessed whether the disclosures reflect the risks inherent in the accounting for the pension scheme.
Accounting for SPS (EU) Limited as held for sale and the related discontinued operations	
We focused on this area given the judgement required in determining whether SPS (EU) Limited met the criteria for classification as a disposal group held for sale and as a discontinued operation as at 28 December 2013; and in determining the fair value less cost to sell of SPS (EU) Limited. Changes in estimates of net proceeds and costs to sell could materially impact the impairment charge recognised. The impairment charge arising on classification as held for sale had a significant impact on the Group's financial performance and position.	We tested the Directors' presentation and disclosure of SPS (EU) Limited as held for sale and the presentation of the results for the 52 week period ended 28 December 2013 as discontinued operations. We also tested the restatement of the prior year income statement to reflect the results of SPS (EU) Limited as discontinued in the comparative information. Our audit procedures included obtaining the sale and purchase agreement to check the net proceeds from the sale agreed after the year end date. We tested the Directors' estimate of costs to sell by agreeing them to supporting third party documentation and checking that the costs included were directly attributable to the sale.
Fraud in revenue recognition	
ISAs (UK & Ireland) presume there is a risk of fraud in revenue recognition. We focused on the risk that revenue may have been recognised for each revenue stream for transactions that had not occurred.	Our testing of revenue transactions, to assess whether a service had been provided or a sale had occurred, focused on understanding whether cash had been received and whether evidence existed to support the completion of the service or sale agreed to be provided. Where revenue was recorded through manual journal entries we checked whether a sale had occurred in the financial year to support this recognition.
Risk of management override of internal controls	
ISAs (UK & Ireland) require that we consider this.	We assessed the overall control environment of the Group, including the arrangements for staff to "whistle-blow" inappropriate actions, and interviewed senior management. We examined the significant accounting estimates and judgements relevant to the financial statements for evidence of bias by the Directors, that may represent a risk of material misstatement due to fraud. We also tested journal entries to determine the rationale for manual adjustments.

KAM example for the firm KAZ Minerals PLC for the year 2013

I consider the references to the financial statements' footnotes and the risk description to be part of the risk description. The auditors' response and observation are clearly stated. I did not include the words in bold ("The risk"; "Our response"; "Our findings") in the textual analysis when hand-collecting the KAMs.

Tax contingencies (including Excess Profit Tax)

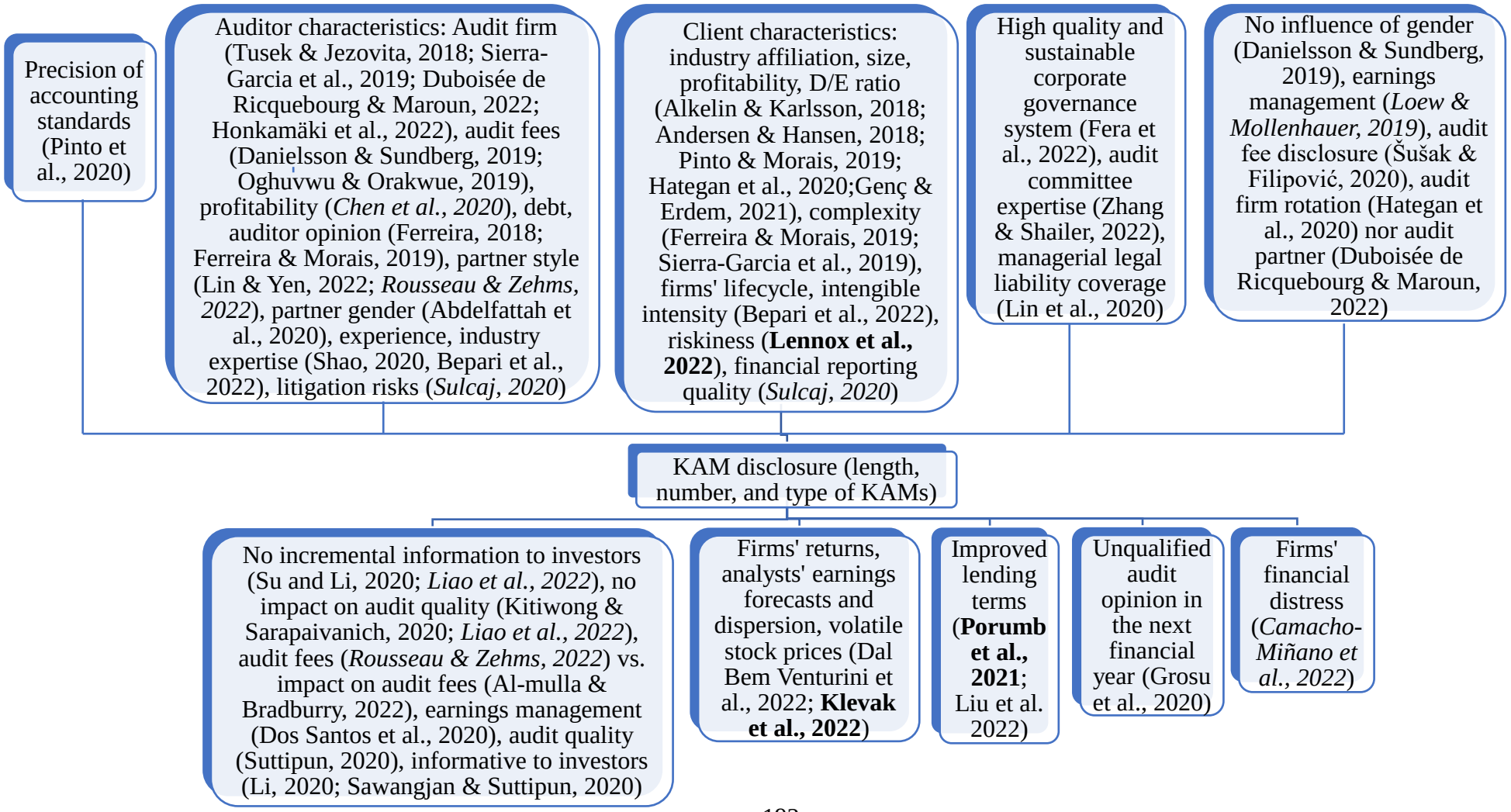
Refer to page 113 (note 4 – Significant accounting judgements and key sources of estimation uncertainty – Income taxes), pages 150 and 151 (note 37 – Commitments and contingencies – (b) Kazakhstan taxation contingencies), pages 129 to 131 (note 15 – Income taxes) and page 71 (Audit Committee report)

- **The risk** Tax legislation in Kazakhstan continues to evolve and can be open to different interpretations. Changes to the Kazakhstan tax legislations and new interpretations of existing legislation could impact the Group's financial position and results. Consequently, provisions for tax contingencies require the Group to make judgements and estimates in relation to tax risks the outcomes of which can be less predictable than in many other jurisdictions.
- **Our response** Our audit procedures included, among others, seeking to understand the current status of the tax claims and reviewing recent correspondence with the tax authorities to challenge the Group's view on the quantification, classification and disclosure of tax claims. We challenged the judgements inherent in the classification of tax claims made by the Group and the basis of accounting for provisions or refunds based on our knowledge of the Kazakhstan tax legislation. We involved our tax specialists in Kazakhstan and the UK to assist the Group audit team in making this assessment. We considered the adequacy of the Group's disclosures in respect of tax and uncertain tax positions.
- **Our findings** We found the Group's judgements as to the amounts recognised as provisions at 31 December 2013 to be acceptable though somewhat cautious. We found that the disclosures in notes 4, 15 and 37 provide a balanced description of the current status of tax claims and risks.

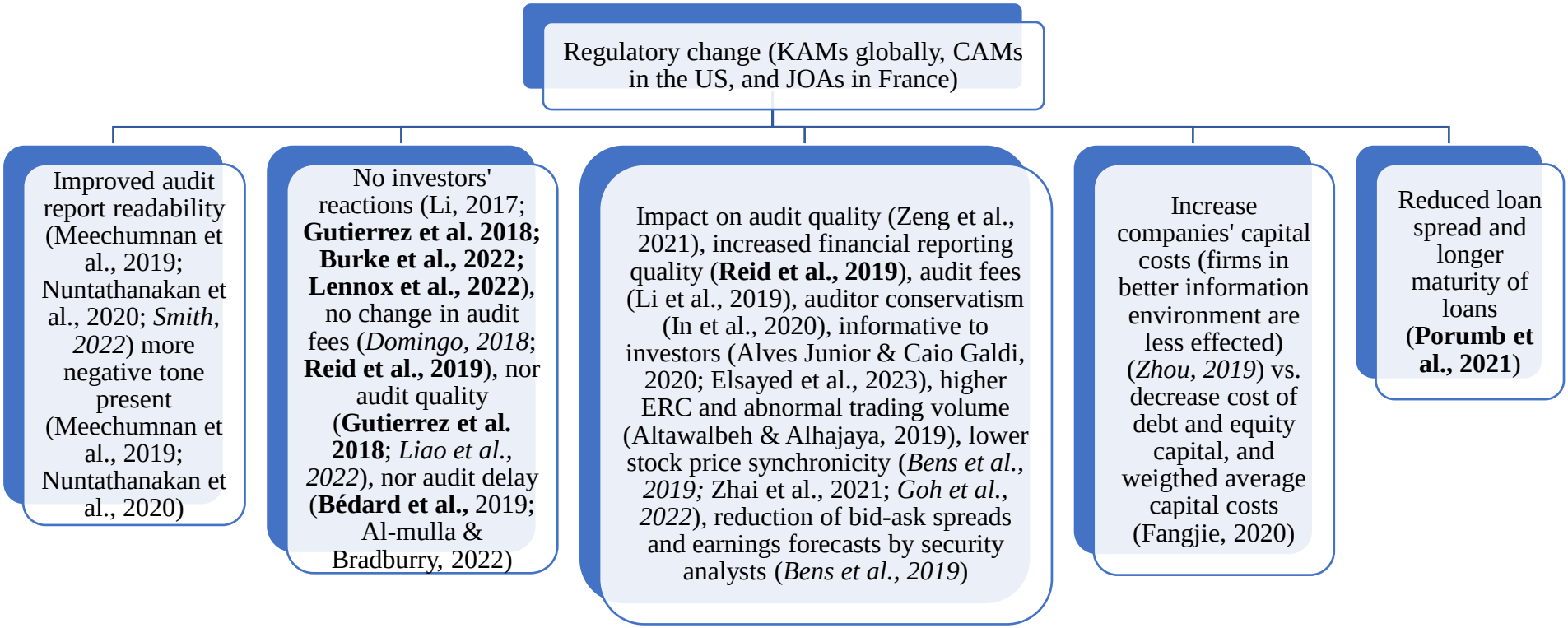
Appendix B: Graphs of the Quantitative Literature on KAMs

Authors in **bold** represent publications in the *The Accounting* Review, *Contemporary Accounting Research, Review of Accounting Studies, Auditing: A Journal of Practice and Theory, European Accounting Review* and in *italic* represent working papers.

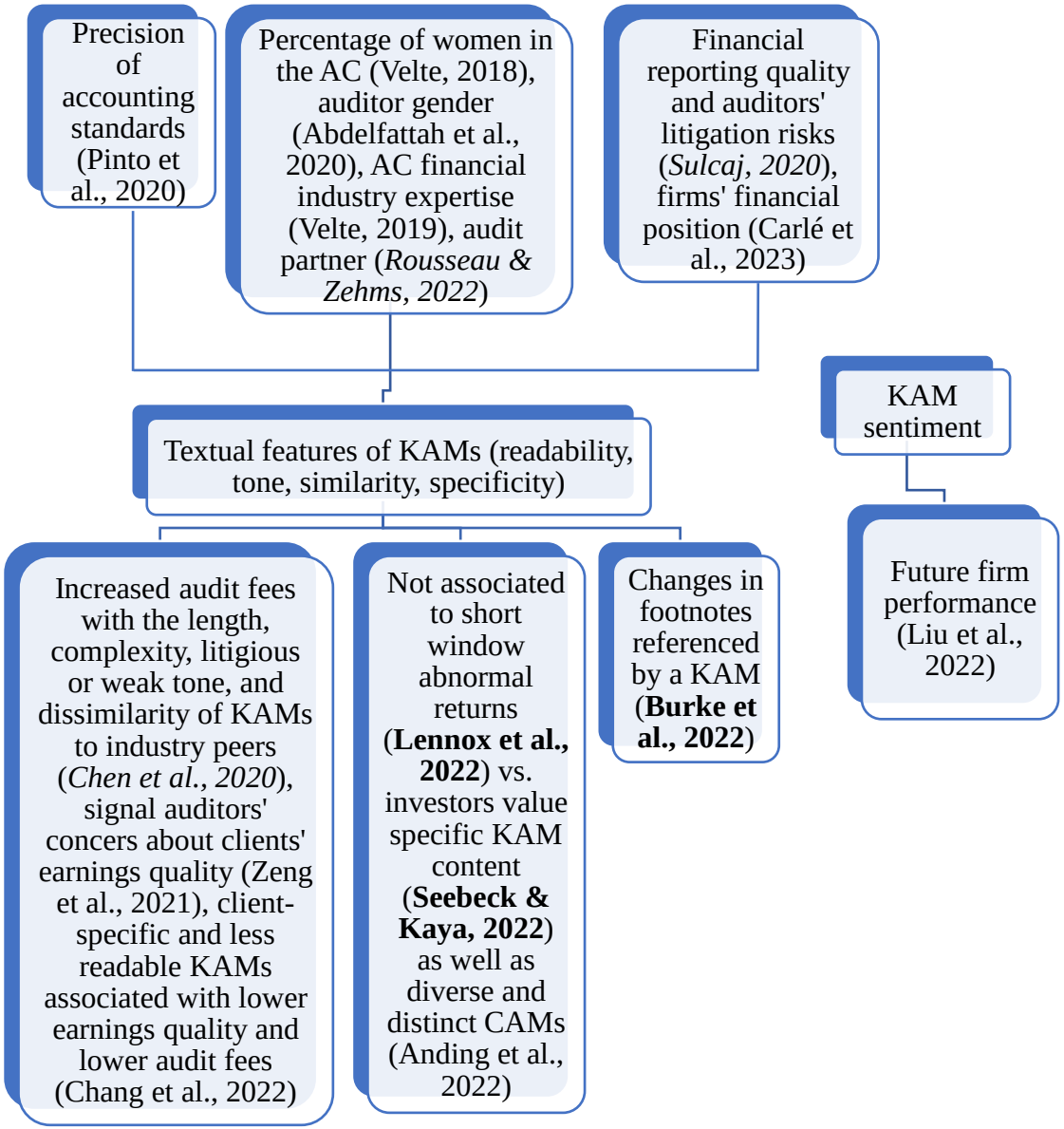
Panel A: Determinants and Consequences of KAM Disclosures



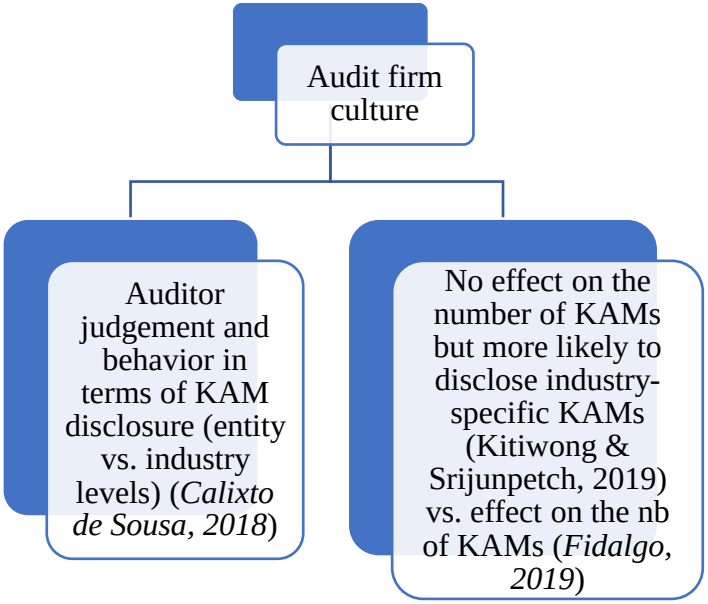
Panel B: Consequences of the Regulatory Change Related to the Expanded Audit Report



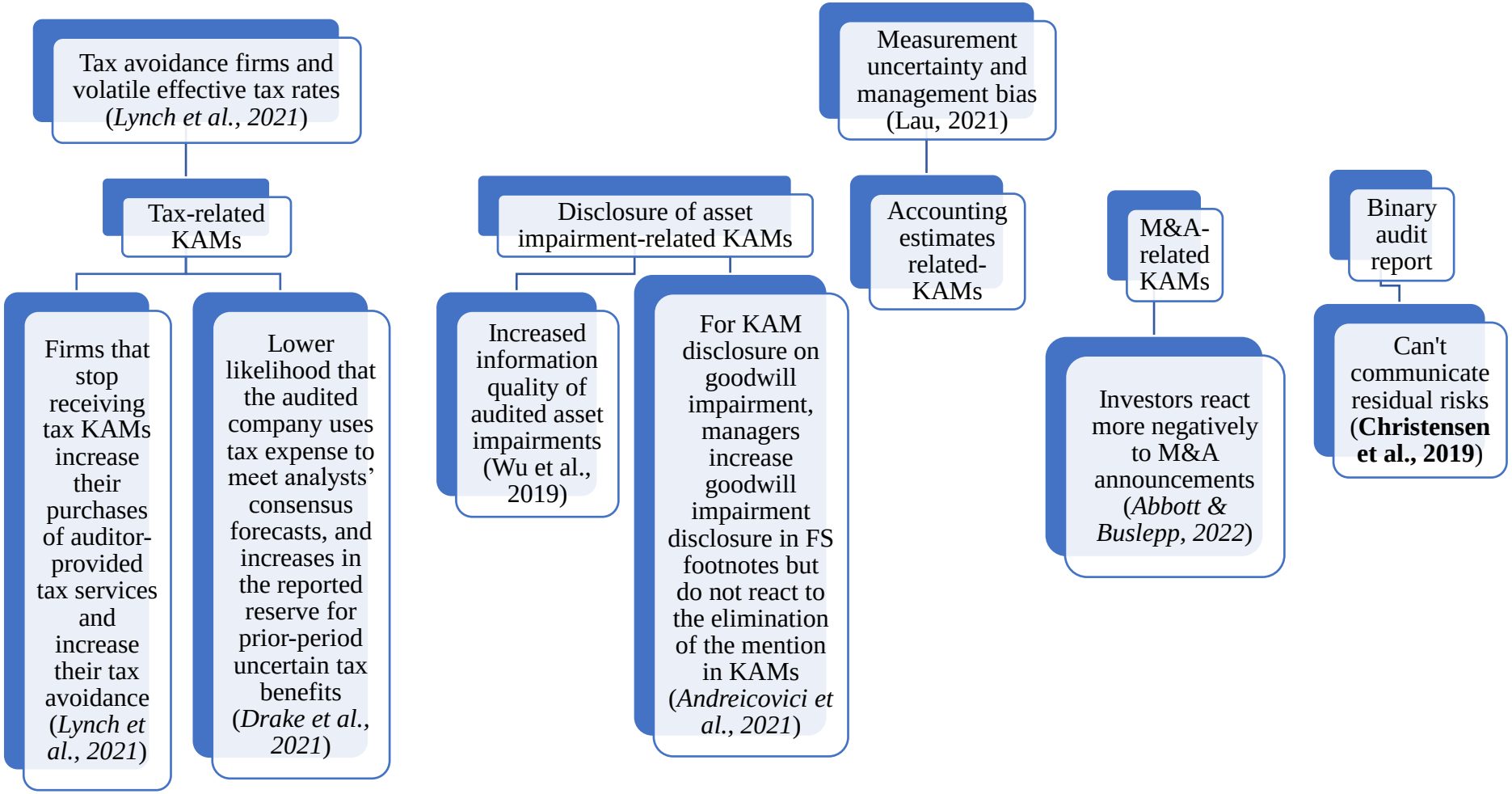
Panel C: Determinants and Consequences of Textual Features of KAMs



Panel D: Consequences of Audit Firm Culture on KAMs



Panel E: Consequences of KAM Disclosure by Type



Appendix C: Summary Tables of the Quantitative Literature on KAMs

Panel A: Determinants and Consequences of KAM

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Abdelfattah, Elmagoub, Elamer (2020)	Journal of Business Ethics	1,373 observations from 312 non-financial firms in the UK from 2013 to 2017	Natural logarithm of the number of KAMs and words, readability and tone of the audit report	Audit partner gender	Female audit partners are more likely than male audit partners to disclose more and longer KAMs with a less optimistic tone and less readable audit reports.
Alkelin, Karlsson (2018)	Dissertation	293 companies in Sweden in 2017	Type of KAMs	Client firm characteristics	Client firm characteristics such as industry affiliation, size, profitability, and debt/equity ratio are significantly associated with the type of KAMs disclosed.
Al-mulla, Bradburry (2021)	International Journal of Auditing	132 New Zealand listed issuers from 2015 to 2017 (278 KAMs)	Audit fees and audit delay; absolute value of abnormal accruals using the Modified Jones Model; stock price	Post dummy; number type, uniqueness of KAMs	By examining audit fees and value relevance, both auditors and investors price the information in KAMs (in both the first year of KAM reporting and in the prior year). Client disclosures related to inventory are greater for firms with inventory KAMs than firms not reporting inventory KAM. The number of KAMs, the uniqueness of KAMs in relation to the sample, the auditor, or the industry are associated with audit fees.
Andersen, Hansen (2018)	Dissertation	422 firm-year observations in Norway in 2016 and 2017	Number of KAMs	Client firm characteristics and industry based on the GICS classification	There are positive associations between: company size and the number of KAMs; capital turnover rate and the probability of reporting a revenue recognition KAM; companies that recognized write-downs in the previous year and the probability to have a write-down KAM reported; and companies in the industry «Oil and Gas» and the probability of reporting an impairment loss.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Bepari, Mollik, Nahar, Nazrul (2022)	Accounting in Europe	486 firm-year observations in Australia for 2017-2018	Number and type of KAMs, based on account- and entity-level risks	Client and audit firms', and audit partners' characteristics	Firms' life cycle, size, complexity, intangible intensity, audit firm identity, audit fees, auditors' specialization, experience, gender, and accounting degree affect the number and types of KAM disclosures
Camacho-Miñano, Muñoz-Izquierdo, Pincus, Wellmeyer (2022)	Working Paper	482 firms and 2,214 firm year observations of UK premium-listed firms for 2013 to 2018	Financial distress with Altman Z-score	Number and type of KAMs, based on account- vs. entity-level risks	The greater the number of KAMs disclosed, the higher the financial distress level of a firm. Going concern, exceptional items, and revenue recognition KAMs are the most relevant for assessing financial distress.
Chen, Elemes, Hope, Yoon (2020)	Working Paper	1,615 client-firm year observations from 2013 to 2017 in the UK	Number of KAMs	EBIT Margin at the audit firm-year level calculated as the ratio of audit-firm operating profit to sales	More profitable audit firms are associated with more KAMs disclosed.
Dal Bem Venturini, Bianchi, Noguez, Paulo (2022)	Revista Contabilidade & Finanças	137 firms from 2016 to 2018 in Brazil	Mean quarterly earnings per share forecast in year t+1, forecast error and forecast accuracy	Number and type of KAMs, based on 6 topics (dummy variables)	KAMs reported present relevant informational content about the audited firm for financial analysts, improving the quality of their forecasts.
Danielsson, Sundberg (2019)	Dissertation	296 companies listed on the Swedish Stock Exchange	Number of KAMs	Auditor gender, audit fees, audit firms	Auditor gender is not associated with the number of KAMs disclosed. Audit firms report different numbers of KAMs. Higher audit fees are associated with more KAMs disclosed.
Dos Santos, Bittencourt Guerra, Marques, Maria Junior (2020)	Journal of Education and Research in Accounting	96 Brazilian firms in 2016 and 2017	Earnings management proxies (discretionary accruals, and SG&A expenses, operating cash flow and revenue	Natural logarithm of the number of KAMs	The number of KAMs is positively associated with accruals and discretionary revenues, and negatively associated with operating cash flow and revenue.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Duboisée de Ricquebourg, Maroun (2022)	The British Accounting Review	666 South African companies from 2018 to 2020	KAM length, number of total, new and dropped KAMs, and overall change in KAMs (sum of new and dropped KAMs divided by the number of KAMs)	Dummy variables for audit firm and audit partner change	Audit firm and partner change are not associated with the number and length of KAMs disclosed. Changing audit partners is not associated with a change in new or dropped KAMs, but a switch in audit firm is significantly associated with KAMs being added or removed from the audit report.
Fera, Pizzo, Vinciguerra, Ricciardi (2022)	Corporate Governance	354 Italian firm-year observations from 2017-2019	Number of KAMs	Governance score relying on 10 items that impact the quality of corporate governance	High-quality and sustainable corporate governance systems are associated with fewer KAMs reported.
Ferreira (2018)	Dissertation	447 firms in Brazil in 2016	Number of KAMs	Client and audit firms' characteristics	Audit fees, size, profitability, and debt of the audited company are positively associated with the number of KAMs. Big 4 and the auditor’s opinion are negatively associated with the number of KAMs disclosed.
Ferreira, Morais (2019)	Revista Contabilidade & Finanças	447 Brazilian firms in 2016	Number of KAMs	Audit and client firms' characteristics	Client firm's complexity and Big 4 are positively associated with the number of KAMs. Audit fees and audit opinions are negatively associated with the number of KAMs.
Genç, Erdem (2021)	Emerging Markets Journal	18 firms in Turkey from 2017-2019	Number of KAMs	Client and audit firm characteristics	Some of the variables have a significant impact on the number of KAMs disclosed: size, inventory, PPE, auditor switch, industry and ROA.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Grosu, Robu, Istrate	Audit Financiar	67 firms listed on the Bucharest Stock Exchange from 2016 to 2018	Natural logarithm of p/(1-p) where p is the estimated probability that the auditor issues an unqualified audit opinion in the following year	Dummy variable equal to 1 if the audit report contains a KAM in year t; the total number of KAMs; dummies equal to 1 if the KAM type is reported; and if the audit report is an unqualified audit opinion in year t	Regardless of the type of auditor (Big 4 or non-Big 4), the existence of KAMs reported during the current period is associated with a greater probability of getting an unqualified audit opinion for the next financial year
Hategan, Pitorac, Crucean (2022)	Managerial Auditing Journal	818 reports for 767 companies listed on the European stock exchanges (EEA, UK & Switzerland) with 1,415 KAMs for 2019 and 2020	Number of KAMs	Auditor's size, frequency of the event, going concern, auditor's rotation, audit fees to revenue ratio and industry	Auditor's size, frequency of the event and going concern uncertainty are positively associated with the numbers of KAMs. Auditor rotation and audit fees are not significant.
Honkamäki, Mättö, Teittinen (2022)	International Journal of Auditing	235 audit reports from the real estate sector from 2017 to 2018 covering 60% of the listed real estate companies in the EU, Switzerland, and Norway	Number of audit procedures in KAMs; dummy variables equal to 1 if the auditor challenged the fair value opinion; and if they used a valuation specialist	Audit firm dummies	There is a statistically significant difference among the Big4 in reporting the challenge of management estimates and in the number of audit procedures. A country's legal origin plays a significant role when auditors report KAMs.
Kitiwong, Sarapaivanich (2020)	Managerial Auditing Journal	1,519 firm-year observations from 312 companies in Thailand from 2014 to 2017	Dummy equal to 1 if the financial statements are restated in year t+1	Dummy if a KAM is reported in year t, number and type of KAMs	Financial statements are less likely to be restated after the implementation of KAMs. The number and most common types of KAMS are not associated with audit quality.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Klevak, Livnat, Pei, Suslava (2022)	Auditing: A Journal of Practice & Theory	1,969 CAM disclosures from July 2019 to May 2020 in the US	Abnormal stock returns, and analyst reactions (number of upward and downward earnings revisions)	Extent of CAM disclosures: number of CAMs, number of audit procedures in the CAM section and in total, number of characters, words and verbs in the CAM section	Firms with more CAMs, lengthier CAMs, and more audit steps are characterized by significantly lower returns than firms with less extensive CAMs immediately around the 10-K filings. Analysts reduce their earnings forecasts to a larger extent for such firms; stock prices become more volatile; and the dispersion of analyst forecasts are greater for firms with more CAM disclosures.
Lennox, Schmidt, Thompson (2022)	Review of Accounting Studies	488 premium listed companies (976 firm-year observations) in the UK in 2013-2014 (first year of KAM implementation)	Cumulative (and absolute) abnormal return centered on the date of the annual report, abnormal trading volume and abnormal volatility	Number and type of KAMs	The number and types of RMM disclosures are not incrementally informative to investors even in poor information environments
Li (2020)	American Journal of Industrial and Business Management	1,031 Chinese firms for 2016 and 2017	Shareholding ratio of institutional investors of the company	Number of KAMs, amount of numbers and percentage used in the contents of KAMs, occurrence of KAMs higher than 50% compared to the industry	Institutional investors withdraw more investment as the number and accuracy of KAMs increase.
Liao, Minutti-Meza, Zhang, Zou (2022)	Working Paper	1,245 non-financial companies in Hong Kong with unqualified audit opinions for 2015 and 2016	Audit fees, cumulative absolute abnormal returns, abnormal trading volume, absolute discretionary accruals, small positive change in net income	Post period and treated firms (with KAM disclosures), type and number of KAMs	No evidence that KAMs provide incremental information to investors or that the new rules affect audit fees or quality. The variation in the content of KAMs is not consistently associated with incremental information content, audit fees or audit quality.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Lin, Hsu, Chou, Chao, Li (2020)	Emerging Markets Finance & Trade	1,501 Taiwan's listed companies in 2016	Number of KAMs	Dummy equal to 1 if directors' and officers' purchased liability insurance, 0 otherwise	The amount of directors' and officers' liability insurance is positively associated with the number of KAMs disclosed.
Lin, Yen (2022)	Advances in Accounting	2864 non-financial firm-year observations from listed companies in Taiwan from 2016 to 2018	Dummy equal to 1 when different types of KAMs are disclosed; and 0 otherwise. Absolute discretionary accruals according to the modified Jones model following Kothari et al. (2005)	Dummy equal to 1 when there is a change in one or both of the engagement partner(s) and 0 otherwise	A change in audit partners is significantly associated with different types of KAMs disclosed. Audit partner change is not associated with audit quality when there is no change in KAMs, but it is associated with audit quality when different KAMs are disclosed.
Liu, Ning, Zhang, Zhang (2022)	Managerial Auditing Journal	3,045 firm-year observations from 2016 to 2017 in China	Financing cost of debt and the maturity structure of debt	Post (fiscal year in 2017). Number and type of KAMs	KAM disclosures decrease interest rates and increase the proportion of long-term debt. The number of KAMs is associated with more favorable debt characteristics. Different KAM categories have different effects on debt contracting.
Loew, Mollenhauer (2019)	Working Paper	90 European banks in 2017	Type and number of KAMs	Bank size (number of employees and total assets), success (net income), earnings management (loan loss provisions/last year outstanding loans)	Bank size increases the probability to find KAMs related to IT and Tax and is positively associated with the number of KAMs. Earnings management led to insignificant results. Deloitte reports more Tax KAMs, but the number of reported KAMs does not differ between the audit firms.
Oghuvwu, Orakwue (2019)	Accounting and Taxation Review	15 banks quoted on the Nigeria Stock Exchange in 2016 and 2017	KAM dummy equal to 1 based on five criteria	Firm size and audit fees	Audit fees are significantly and positively associated with KAM disclosures. Firm size is not significant.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Pinto, Morais (2019)	Journal of International Financial Management & Accounting	142 firms from the UK, France and the Netherlands in 2016	Number of KAMs, average number of KAMs	Client and audit firm characteristics	Higher number of business segments (complexity), more precise accounting standards, higher audit fees are associated with more KAMs disclosed. Firms in the banking industry have fewer KAMs disclosed.
Pinto, Morais, Quick (2020)	Journal of International Accounting, Auditing & Taxation	135 companies from the UK, France and the Netherlands in 2016	Dummy variable equal to 1 if there are KAM disclosures; 0 otherwise. Readability of the audit report	Score of rules-based characteristics in an accounting standard; number of KAMs disclosed	More precise accounting standards are associated with a greater probability of KAM disclosures. The number of KAMs disclosed is associated with lower audit reports' readability
Porumb, Zengin-Karaibrahimoglu, Lobo, Hooghiemstra, de Waard (2021)	Contemporary Accounting Research	561 observations from 204 adopting firms and 174 observations from 54 non-adopting control firms in the UK from 2013 to 2016	One of three loan contracting features: interest rate spread, credit availability, loan maturity, and loan ownership structure	Post (fiscal year-end on or after October 1st, 2013) and adopt. For H2, low and high (below/above the median) RMM	The introduction of the expanded audit report is associated with improved lending terms for adopting relative to non-adopting firms. Lenders perceive borrowers with fewer RMMs to be less risky, suggesting incrementally more favorable loan contracting terms.
Rousseau, Zehms (2022)	Working Paper	1,378 observations from 345 partners, 22 audit firms from 2013 to 2019 in the UK	Similarity of KAM pairs, similarity in the number, length, readability, tone of the KAMs	Dummy variables if the audit partner and audit firms are the same; 0 otherwise	Audit partners play a greater role in having similar KAMs (in terms of wording, number, topic, length, tone) compared to audit firms.
Sawangjan, Suttipun (2020)	GATR Journal of Finance and Banking Review	96 listed companies of Top-50 firms from Thailand, Malaysia, and Singapore from 2016 to 2019	Stock price	Length and number of KAMs	KAM length is positively associated with stock price, while the number of KAMs is negatively associated with stock price
Shao (2020)	Modern Economy	5,655 listed companies from 2016 to 2018 in China	KAM characteristics: number and length of KAMs, numbers included, industry-specific KAM	Audit firm characteristics	Firm size, audit term, firm’s industry expertise, auditor’s gender, and years of practice are significantly associated with characteristics of KAM disclosures.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Sierra-Garcia, Gambetta, Garcia-Benau, Orta-Pérez (2019)	The British Accounting Review	70 companies listed in the Financial Times Stock Exchange 100 (FTSE 100) index from 2013 to 2016, resulting in 280 observations	Number of KAMs, KAMs' type (entity- vs. account-level risk)	Client and audit firms' characteristics: leverage, current ratio, ROA, complexity, audit firm, audit fees, non-audit fees ratio, audit firm switch, auditor specialist, etc.	Client and audit firms' characteristics determine the number and type of KAM disclosed. Deloitte, EY and KPMG tend to report fewer entity-level-risk KAM (ELRKAM) than PwC, while KPMG and BDO report fewer account-level-risk KAM (ALRKAM) than PwC. Auditors charging higher fees disclose more ELRKAM compared to ALRKAM.
Su, Li (2020)	Accounting Auditing Collection	1,385 expanded audit reports from Taiwan non-financial listed companies	Earnings and stock price returns	Number of KAMs	KAM disclosures are not incrementally informative to investors. The number of KAMs is a moderator of earnings informativeness.
Sulcaj (2020)	Working Paper	US CAMs from June 30, 2019 to February 29, 2020	Number of CAMs and CAM readability (Bog index)	litigious industries, absolute discretionary accruals (modified Jones model following Kothari et al., 2005)	Higher auditors litigation risks and lower financial reporting quality are associated with more CAMs disclosed, but they are not associated with the readability of CAMs. However, lower financial reporting quality in presence of litigation risks is associated with lower CAM readability. The number of CAMs is significantly associated with audit fees and audit report lag, while CAM readability isn't.
Šušak, Filipović (2020)	Zbornik Radova Veleučilišta u Šibeniku	73 non-financial companies on the Zagreb Stock Exchange in 2018	Number of KAMs	Information on the amount of fees paid to the auditors	The disclosure of amounts of fees paid to external auditors is not statistically associated with the number of KAMs.
Suttipun	Journal of Applied Accounting Research	100 firms listed on the Thailand Stock Exchange from 2016 to 2019	Audit quality based on the modified Jones model	KAM length	Positive significant relationship between KAM length and audit quality

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Suttipun (2020)	Asian Journal of Accounting Perspectives	150 companies in Thailand from 2016 to 2018	Number of KAMs	Client firm characteristics	Firm size and complexity are positively associated with the number of KAMs, while leverage is negatively associated with the number of KAMs disclosed. Firms listed on the Thailand Stock Exchange and audit firm rotation is also associated with the number of KAMs.
Tušek, Jezovita (2018)	Economics & Market Integrations	236 Croatian listed companies for 2016 and 2017	Number of KAMs	Big 4	Big4 disclose more KAMs
Zhang, Shailer (2022)	International Journal of Auditing	693 non-financial firm-year observations from 2013 to 2016 in the UK	Number of KAMS; percentage of significant of KAMs defined as having significant issues	Percentage of audit committee members who are accounting, supervisory or industry experts	Audit committee accounting and industry expertise is associated with fewer KAMs and fewer KAMs unrelated to significant issues.

Panel B: Consequences of the Regulatory Change Related to the Expanded Audit Report

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Altawalbeh, Alhajaya (2019)	International Business Research	128 firms listed in Jordan in 2017	Absolute value of abnormal trading volume	Dummy for firms mandated to report KAMs	KAM disclosures have informational value to the investors.
Alves Junior, Caio Galdi (2020)	Revista Contabilidade & Finanças	131 observations for 2015-2016 and 94 for 2016-2017, Brazilian firms	Change in abnormal annual returns	Cumulative abnormal returns around the financial statements and for each quarter	KAMs have informational relevance to investors.
Bédard, Gonthier-Besacier, Schatt (2019)	Auditing: A Journal of Practice & Theory	1,384 French audit reports from 2002 to 2011	abnormal returns and abnormal trading volume; audit report lag, abnormal accruals, and audit fees	Dummies for the year of the implementation of JOA and if the company is mandated to disclose JOAs	For both first-time implementation of JOAs and new JOAs in subsequent years, there is no significant market reaction to their disclosure and no significant effect on audit report lag, audit quality, and audit fees.
Bens, Chang, Huang (2019)	Working Paper	340 UK firms from 2012 to 2015	Financial reporting quality measured with ERC, discretionary accruals, accounting restatements, going concern opinion; usefulness of audit report measured by bid-ask spreads and dispersion of earnings forecasts by analysts	Post dummy after the implementation of KAMs (after October 2013)	The implementation of KAMs in the UK leads to audit reports that are perceived as more useful by stock market participants. Financial reporting quality appears to improve in the new regime via: higher ERCs; lower discretionary accruals; a higher perception of earnings quality by an independent financial firm; fewer accounting restatements; and a higher likelihood of a going concern opinion.
Burke, Hoitash, Hoitash, Xiao (2022)	The Accounting Review	2,253 observations in 2019 and 2020 in the US	Absolute cumulative abnormal returns and abnormal trading volume; footnote content	Post dummy, control group of footnotes not referenced by a CAM	There are significant changes to financial statement footnotes referenced by CAMs. CAM disclosures do not provide incremental information to the market.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Domingos (2018)	Dissertation	Firms in Spain and Portugal in 2015-2016	Natural logarithm of audit fees	Post and adopter dummies (Portugal firms in 2016)	KAMs do not have any impact on audit fees.
Elsayed, Elshandidy, Ahmed	Journal of International Accounting, Auditing and Taxation	572 firm-year observations from 2011 to 2015 in the UK	Market liquidity (bid-ask spreads and trading volume), user-perceived risk (volatility of daily market returns and analyst forecast dispersion); cost of capital, beta, idiosyncratic risk	Post dummy in the post regulatory period	Firms with an expanded audit report with disclosures on risks of material misstatement (materiality) exhibit significantly higher (lower) idiosyncratic risk, beta, and cost of equity. Information conveyed by the expanded auditor's report impacts bid-ask spread, trading volume, volatility of market returns, and analyst forecast dispersion.
Fangjie	Dissertation	Listed companies in Taiwan from 2013 to 2018	Cost of debt capital, cost of equity capital, and weighted average capital costs	Post (implementation of KAMS in 2016) and adopters (firms mandated to report KAMs) variables	The cost of debt capital, cost of equity capital, and weighted average capital costs have decreased significantly since the implementation of the extended audit report.
Goh, Li, Wang (2022)	Working Paper	7,325 firm-year observations in China and Hong Kong from 2014 to 2018	Cumulative absolute abnormal returns, abnormal trading volume, stock price synchronicity	Post dummy equal to 1 for A+H share firms in fiscal years 2016, 2017 and 2018, and for A share firms in fiscal years 2017 and 2018	After the implementation of KAMs, abnormal trading volume and earnings response coefficients are higher, and stock price synchronicity are lower. The expanded audit report is more informative for non-state-owned enterprises and for firms with higher information asymmetry.
Gutierrez, Minutti-Meza, Tatum, Vulcheva (2018)	Review of Accounting Studies	1,248 premium listed UK firms from 2013 to 2015	Cumulative absolute abnormal returns and abnormal trading volume; audit fees and audit quality	Post variable with two years before and after the adoption rule; control group of LSE AIM firms	The implementation of KAMs does not significantly affect investors' reaction to the release of auditors' reports, audit fees, or audit quality.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
In, Kim & Park	International Journal of Financial Studies	448 manufacturing firms in Korean in 2015 and 2016	Conservatism following Givoly & Hyan (2000), Kim & Bae (2006), and Khan & Watts (2009)	Dummy variable equal to 1 after the adoption of KAMS (2016)	After the introduction of KAMs, auditors perform their audit more conservatively.
Li (2017)	Advances in Economics, Business and Management Research	84 Chinese firms in 2016	Absolute value of cumulative abnormal returns	KAM disclosure	The implementation of KAMs in China is not informative to investors.
Li, Hay and Lau (2019)	Pacific Accounting Review	121 firms in New Zealand in 2015 and 2016	Audit quality proxied by absolute abnormal accruals (performance matched modified Jones model), audit fees	Post dummy if the financial year is the first year of adopting the new audit reporting regime	The enhanced audit reports were followed by an improvement in audit quality and significant increase in audit fees.
Meechumnan, Sarapaivanich, Tulardilok, Sittisombut	WMS Journal of Management	Property and construction industrial companies in Thailand	Communication value (readability and tone)	the new version of audit report with KAM	Audit reports with KAMs are easier to read and have more negative tone compared to prior audit reports without KAMs.
Nuntathanakan, Sarapaivanich, Kosaiyakanont, Suwanmongkol (2020)	Journal of Management Sciences	Listed companies in Thailand during 2015-2017	KAM readability and tone	Post dummy	The new version of the audit report with KAMs is easier to read and has a more negative tone compared to the previous version without KAMs.
Reid, Carcello, Li, Neal (2019)	Contemporary Accounting Research	1,304 premium listed UK firms from 2013 to 2015	Absolute abnormal accruals, meet or beat analyst forecasts, earnings response coefficients; natural logarithm of audit fees and audit delay	Post variable if the year is the first two years of the new reporting regime	The United Kingdom's new reporting regime is associated with an improvement in financial reporting quality while there is no significant change in audit fees or audit delay.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Smith (2022)	Working Paper	660 firm-year observations in the UK in 2014 and 2015	Audit report readability and tone as language-based proxies for communication value	Dummy variables equal to 1 if the audit opinion is issued in the first year or in the second year of the KAM implementation	Audit reports are easier to read after the implementation of KAMs and better reflect the risk-related nature of the audit.
Zeng, Zhang, Zhang, Zhang (2021)	Accounting Horizons	7,153 firm-KAMs in China in 2016 and 2017	Five audit quality measures: discretionary accruals, small positive earnings surprise, the adoption of below-the-line items or non-core earnings, types of audit opinions, and audit fees	Post and adopters. Five firm-level KAM variables: number of KAMs, KAM specificity, similarity, readability, length	Audit quality increases significantly following the KAM rule. The number of KAMs, disclosure characteristics (such as specificity, similarity, readability, and length), and reasons auditors identify issues as KAMs signal auditors' concerns about clients' earnings quality, their audit effort, and the propensity of issuing modified opinions.
Zhai, Lu, Shan, Liu, Zhao (2021)	International Review of Financial Analysis	3,375 firm-year observations for 2015 and 2016 in China	Price synchronicity from the regression of firm's returns on market and industry returns	Dual listed firms adopting KAMs in 2016 as treatment group and A shares firms as control group, post dummy after 2016	KAM disclosures provide incremental firm-specific information and reduce stock price synchronicity.
Zhou	Working Paper	3,049 observations in China for 2017 and 2018	Two measures of cost of capital following Easton (2004) and Claus and Thomas (2001)	Post and adopters variables (control group are firms starting to disclose KAMs in 2017; treatment group are firms adopting KAM in 2018)	The introduction of KAMs increased companies' capital costs in general and it affects companies in different information environments asymmetrically. Companies in a better information environment are less affected by the disclosure of KAMs.

Panel C: Determinants and Consequences of Textual Features of KAMs

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Anding, Blay, Bozanic (2022)	Working Paper	1,976 firm-year observations in the US from 2019 to 2021	Natural logarithm of audit fees; absolute value of cumulative abnormal returns; change in analysts' forecast errors	KAM topical distinctiveness and lexical diversity	Distinct and diverse CAM disclosures are associated with higher audit fees. While distinct and diverse CAM disclosures provide useful information to sophisticated market participants, they create confusion among unsophisticated investors.
Carlé, Pappert, Quick (2023)	Corporate Ownership & Control	207 observations from 69 unique German firms from 2017 to 2019	Similarity of KAMs of the same topic over time	Client and audit firms' characteristics	The financial position of the firm, especially a stable equity basis, is associated with more similar KAMs of the same topic over time for the same client. KAMs become more similar over time.
Chang, Chi, Stone (2022)	Journal of Accounting, Auditing & Finance	2,893 audit reports, 6,464 KAMs in 2016 and 2017 in Taiwan	Cumulative market-adjusted abnormal returns; discretionary accruals, audit fees misstatements	Interaction of the percentage of generic phrases in KAMs with the levels of and changes in income from continuing operations	Companies with KAMs that contain more client-specific information are perceived as having lower reporting quality. This is driven by the risk description of the KAMs.
Chen, Nelson, Wang, Yu (2020)	Working Paper	1,833 firms listed in Hong Kong in 2016	Natural logarithm of audit fees	Textual constructs of KAMs: number, length, complexity, tone, and similarity of KAM disclosures compared to industry peers	Audit fees are increasing in the length, complexity, and litigious or weak tone of KAM disclosures and decreasing in the similarity of KAMs to industry peers.
Liu, Yen, Wu (2022)	Journal of Information Systems	1,606 firm-year observations from 803 distinct firms in 2017 and 2018 in Taiwan	Tobin's Q, ROA, ROE	KAM sentiment	KAM sentiment is positively associated with current and next years' firm performances.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Seebeck, Kaya (2022)	European Accounting Review	733 firm-year observations in the UK in 2016	Communicative value, measured by readability, evaluative content, and visual aids, specificity for KAM sections	Post dummy; categorical variable reflecting the number of times an extended auditor report has been issued; abnormal trading volume and absolute cumulative abnormal returns	The communicative value of KAMs (based on different proxies, i.e., readability, evaluative content, visual aids, and specificity) improves in post-ISA 700 periods. A more specific description of KAM is significantly and positively associated with capital market reactions, suggesting that investors value precise information.
Velte (2018)	Corporate Social Responsibility and Environmental Management	660 UK firms in 2014 and 2015	KAM readability	Percentage of women in the audit committee	The percentage of women in the audit committee is positively associated with KAM readability in the audit report.
Velte (2019)	Journal of Applied Accounting Research	1,319 firm-year observations in the UK for the fiscal years 2014–2017	KAM readability	Percentage of industry and financial experts in the audit committee	Audit committees' financial and industry expertise are positively associated with KAM readability, with a stronger effect when both expertise are combined.

Panel D: Consequences of Audit Firm Culture on KAMs

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Calixto de Sousa (2018)	Dissertation	140 firms in the Netherlands, Portugal and the UK in 2016	Proportion of entity-level KAMs disclosed to the total KAMs disclosed	Hofstede cultural dimensions: uncertainty avoidance and individualism	Uncertainty avoidance and individualism are associated with more KAMs reported.
Fidalgo (2019)	Dissertation	200 European firms in 2017	Number of KAMs	Hofstede cultural dimensions: power distance and individualism	Individualism and power distance are both associated with fewer KAMS disclosed.
Kitiwong, Srijunpetch (2019)	Journal of Accounting Professions	781 firm-year observations from Malaysia, Singapore and Thailand from 2016-2018	Focus on two cultural dimensions of Hofstede (2001) and Hofstede et al. (2010): uncertainty avoidance and masculinity	Number and type of KAMs	Country's cultural characteristics of uncertainty avoidance and masculinity do not affect the number and type of KAMs disclosed by auditors.

Panel E: Consequences of KAM Disclosure by Type

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Lynch, Mandell, Rousseau (2021)	Working Paper	4,321 firm-year observations and 650 observations with at least one tax-related KAM in the UK from 2013 to 2019	Dummy equal to 1 if the firm received a tax KAM; Percentage change in tax-related service fees, audit fees, and effective tax-rate	Three dummy variables equal to 1 if the client continues to receive, receives for the first time, or stops receiving a tax-related KAM in year t	Firms with greater tax avoidance and more volatile effective tax rates are more likely to receive tax-related KAMs. Firms that stop receiving tax KAMs increase their purchases of auditor-provided tax services and increase their tax avoidance.
Drake, Goldman, Lusch, Schmidt (2021)	Working Paper	756 firm-year observations in 2018 and 2019 in the US	Change in annual effective tax rate from the third to fourth quarter	Post variable; dummy equal to 1 if the firm as a tax-related CAM; consensus forecast	Tax-related CAM disclosures are associated with (1) a lower likelihood that the audited company uses tax expense to meet analysts' consensus forecasts, and (2) increases in the reported reserve for prior-period uncertain tax benefits.
Wu, Fan & Yang (2019)	China Journal of Accounting Studies	3,231 observations in China in 2017	Impairment loss scaled by total assets at the beginning of the year	Indicators of deteriorating firm economics following Lobo et al. (2017); interaction with a dummy equal to 1 if there is at least one KAM disclosed	Disclosure of asset impairment-related CAMs is significantly positively associated with the information quality of audited asset impairment.

Authors (Year)	Journal	Country, Sample, Time Period	Dependent Variable	Independent Variable	Main Results
Andreicovici, Jeny, Lui (2021)	Working Paper	610 firm-year observations int he UK from September 2013 to June 2017	Goodwill impairment disclosure: (1) number of words in the goodwill impairment related FS note and (2) the number of times the goodwill impairment related references appear in the annual report	Dummy variable equal to 1 if auditors flag goodwill impairment as a risk of material misstatement; 0 otherwise	Managers increase goodwill impairment disclosures when auditors initiate the mention of this risk but do not react to the elimination of the mention.
Christensen, Neuman, Rice (2019)	Contemporary Accounting Research	56,161 firm-year observations in the US from 2000 to 2015	Restatement, bankruptcy filing, natural logarithm of audit fees	Material weakness and going concern based on four categories	Binary signals in audit reports are unable to fully communicate underlying risks that are inherently continuous in nature.
Abbott, Buslepp (2022)	Working Paper	815 mergers and acquisitions between June 30, 2019 and December 29, 2021 in the US	Acquirer's five-day abnormal returns during the acquisition announcement (-2; +2)	Dummy variable equal to 1 if the most recent audit report contains an M&A CAM, 0 otherwise	There is a negative association between business combination CAMs and acquisition announcement abnormal returns.
Lau (2021)	Asian Review of Accounting	351 Chinese listed firms in 2017	Stock price	Dummies equal to 1 for the following KAM topics: accounting estimates, fair value estimation, impairment review and loss estimation and other estimates	Measurement uncertainty is positively, while management bias is negatively, associated with KAMs related to accounting estimates.

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