Client-Specific Information in Key Audit Matters and Audit Risks

Abstract

We investigate the association between auditors' disclosure of client-specific information in Key Audit Matters (KAMs) and audit risks (captured by an audit fees model). On the one hand, we find that client-specific information in the risk description part of the KAM is positively associated with audit risks, consistent with greater inherent and control risks. On the other hand, we find a negative association between auditors' disclosure of client-specific information in the response and observation part of the KAM and audit risks, consistent with a reduction in detection risks. Overall, auditors' disclosure of client-specific information in KAMs is associated with lower audit risks. KAMs provide opportunities to disentangle audit effort and quality from audit risk in audit fees. 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 disentangle the increase in audit fees due to higher audit effort, implying greater audit quality, from a risk premium (DeFond & Zhang, 2014). We believe that the introduction of Key Audit Matters (KAMs) provides opportunities to better understand the audit risk model, a foundation of the accounting literature. This paper investigates the association between auditors' disclosure of client-specific information in KAMs and audit risks, captured by audit fees.

The revision of the international standard on auditing ISA700 introduced in 2013 the expanded audit reports for premium listed firms on the London Stock Exchange (LSE) (FRC, 2013b).[1] This standard mandates auditors to disclose Key Audit Matters (KAMs) 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 (e.g., Church, Davis, & McCracken, 2008; Gray, Turner, Coram, & Mock, 2011; Mock et al., 2013; Vanstraelen, Schelleman, Meuwissen, & Hofmann, 2012). However, critics of this new disclosure requirement feared that KAMs would be boilerplate and standardized (Citi Research, 2014; Gray et al., 2011; Mock et al., 2013) although the standard encourages auditors to write KAMs in their own words (FRC, 2013b).

[1] 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.

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 1. Although both KAMs refer to the same type of risk "Revenue recognition", KAMs are client-specific. 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.[2] KAM lengths differ. There are variations in the words chosen and their occurrence. We intend to capture these variations reflecting client-specific information through KAM dissimilarity metrics and we investigate its association with audit risks.

The sign of this association is, however, not straightforward and depends on both KAM components, namely (a) the risk description and (b) the response and observation. 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 parts of the KAMs: (a) the risk description (capturing inherent and control risks) and (b) the auditors' response and observation (capturing detection risk).

[2] In the first KAM, client-specific information refer 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 refer to contractual arrangements and the recognition of rewards associated to the underlying agreement.

Although some risks are inherent to an industry, KAMs should be specific to the client firm audited and the standard encourages auditors to write KAMs in their own words (FRC, 2013b). 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 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, Malsch, & Paillé, 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. By disclosing client-specific information about these procedures, auditors reduce detection risk and the overall level of audit risk. 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 KAMs corresponds to the joint effect of its two components, expected to yield opposite and complementary insights about audit risks. To keep audit risk at an acceptable level, as inherent and control risks increase, auditors must reduce detection risks (Hogan & Wilkins, 2008). However, to the best of our knowledge, we do not know the extent to which auditors reduce detection risks to keep audit risk at an acceptable level. If client-specific information in KAM disclosures mainly reflects the risks encountered during the audit, we would expect a positive association between client-specific information in KAMs and audit risks. However, if client-specific information in KAMs reflects auditors' effort to keep audit risk at an acceptable level by reducing detection risk, we would observe a negative association between client-specific information in KAMs and audit risks.

Investigating the overall relationship between auditors' disclosure of client-specific information in KAMs and audit risks is thus an empirical question.

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, and one for the full KAM disclosure. We follow Brown and Tucker (2011) to get a dissimilarity score among industry peers facing the same type of risks per fiscal year. 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.

Following prior literature, we capture audit risk by using a classic audit fee model (e.g., Hay et al., 2006) and by controlling for factors related to client-specific risks (e.g., Cassell, Drake, & Rasmussen, 2011; Hogan & Wilkins, 2008). Prior literature finds strong evidence that audit fees increase with client risk, such as client firm size and complexity (Hay et al., 2006). The positive relation between audit fees and audit risk could illustrate two phenomena: higher audit fees can result from greater audit effort to audit risky clients resulting in greater audit quality; or a fee premium to compensate for auditors' exposure to client risks, or both simultaneously (DeFond & Zhang, 2014; Ranasinghe, Yi, & Zhou, 2022). In addition, higher audit fees can also create an economic bond between auditors and their clients that can threaten auditor independence and audit quality (DeAngelo, 1981). A limitation in the literature is the inability to disentangle whether the increase in audit fees results from higher audit effort and quality and/or from an audit risk premium (DeFond & Zhang, 2014). With a sample of derivative

hedging usage by oil and gas firms, Ranasinghe et al. (2022) provide evidence of a business risk premium in audit fees. Examining the content of KAMs provides opportunities to disentangle the audit effort and audit quality component from the audit risk component in audit fees. This 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 control is performed and that internal control will not prevent the risk of material misstatement. These risks are present before auditors perform any procedures. We argue that the risk description part of KAMs captures inherent and control risks. Client-specific information in this part of the KAM reflects client-specific risks before audit procedures are undertaken. To keep audit risk at an acceptable level, auditors perform additional procedures to reduce detection risk (Hogan & Wilkins, 2008). We argue that the auditors' response and observation part of KAMs captures detection risks. Client-specific information in this part of the KAM reflects client-specific audit procedures performed to address the identified risks. 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.

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 show that more client-

specific information in the risk description reflects greater inherent and control risks, therefore increasing audit risk. Auditors reduce detection risk by performing additional audit procedures that are reflected in more client-specific information in KAMs, leading to an overall decrease in audit risk. Moreover, we find that the decrease in detection risk is greater compared to the increase in inherent and control risks. This explains our results that client-specific information in the overall KAM is associated with lower audit 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 (Backof, Bowlin, & Goodson, 2019; Gimbar, Hansen, & Ozlanski, 2015; Lee, Moroney, & Phang, 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 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 (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, 2002). We find results consistent with our expectations.

We perform two additional analyses to rule out the alternative explanation that the negative associations found between client-specific information in the full KAMs and in the auditors' response and audit fees induce lower audit quality and audit effort. 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 the 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.

This study makes several important contributions to the literature. First, our paper complements prior literature on audit risk (e.g., Felix, Gramling, & Maletta, 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) 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 disentangle the audit effort and audit quality component from the audit risk component in audit fees. 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 audit 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, Chang, & Huang, 2019; Drake, Goldman, Lusch, & Schmidt, 2021; Gold, Heilmann, Pott, & Rematzki, 2020; Gutierrez, Minutti-Meza, Tatum, & Vulcheva, 2018; Li, Hay, & Lau, 2019; Liao, Minutti-Meza, Zhang, & Zou, 2019; Reid, Carcello, Li, Neal, & Francis, 2019). . Our paper also complements the literature examining the similarity of KAMs (Burke, Hoitash, Hoitash, & Xiao, 2021; Chen, Nelson, Wang, & Yu, 2020; Zeng, Zhang, Zhang, & Zhang, 2021). We highlight the importance of examining the different components of KAM disclosures separately. We show that their dissimilarity scores have a significant 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., Bradbury & Almulla, 2019; Rousseau & Zehms, 2020) as well as KAM readability and tone (Chen et al., 2020; Lennox, Schmidt, & Thompson, 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., 2021; Chen 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).

KAM regulation is 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, the materiality of the matter to the financial statements and its importance to intended users 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 (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. Audit 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, 2021). 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 papers focus on the audit consequences of the KAM regulation and provide mixed evidence. While several papers fail to find an association between this regulatory change and audit fees, and audit quality in Hong Kong (Liao et al., 2019), the UK (Gutierrez et al., 2018), and the US (Burke et al., 2021); Li et al. (2019) find an increase in audit quality and audit fees in New Zealand after the implementation of KAM disclosures. However, 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 (Bradbury & Almulla, 2019; 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., 2019). Examining firms in New Zealand, Bradbury and Almulla (2019) 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 (2020) 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., 2021; Chen et al., 2020; Zeng et al., 2021). These papers do not systematically focus on the two KAM components as well as the full KAM disclosure. In the US, Burke et al. (2021) find that management changes financial statements footnotes referenced by a CAM and these footnotes are 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 KAM. These results persist in the second year of CAM disclosures and changes are greater for new CAMs.

In Hong Kong, longer, more complex, litigious, and weak tone of the full KAM disclosures are associated with an increase in audit fees, while audit fees decrease with the similarity of KAMs to industry peers (Chen et al., 2020). 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 part of the KAM. Yet, the length of the disclosure, numbers mentioned, and weak tone are significantly associated with audit fees in the response part (Chen 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. 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., 2021; Chen et al., 2020; Zeng et al., 2021) by focusing on client-specific

information in KAMs and its association with audit risks. We focus on the same type of KAMs among industry peers per fiscal year to enable a comparison for the same type of risk. Our dissimilarity metrics are thus different from grouping KAMs per industry-year reflecting client-specific risks (Chen et al., 2020). More importantly, we decompose KAM disclosures by examining first the two KAM components before analyzing the full KAM disclosures.

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 components (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 must reduce detection risks by increasing substantive testing (Hogan & Wilkins, 2008).

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). Although the audit fee model is primarily used to examine audit pricing (e.g., Simunic, 1980), it could 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). Following prior literature, we capture the overall level of audit risk by audit fees (e.g., Cassell et al., 2011; Hogan & Wilkins, 2008; Krishnan & Wang, 2014; Niemi, Knechel, Ojala, & Collis, 2018). Our set of control variables, further detailed in section 4, related to client firm size, complexity, profitability, and riskiness enables us to capture the incremental effect of auditors' disclosure of client-specific information in KAMs and audit risks.

Although the audit fee literature is abundant, an important unresolved issue remains to disentangle whether increases in audit fees result from greater audit effort and quality and/or from an audit risk premium (DeFond & Zhang, 2014; Ranasinghe et al., 2022).[5] Disentangling the two is critical to assert that high audit fees reflect greater audit effort and consequently, greater audit quality, instead of a risk premium. However, in settings studied in prior literature, factors increasing audit risks also demand more audit effort (Ranasinghe et al., 2022). 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 to disentangle business risk from audit effort. However, one

[5] 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 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 conomic bond between an auditor and its client will prevent the auditor from performing additional testing and procedures.

limitation of this setting is that their results could reflect overall risk aversion. We argue that KAMs provide opportunities to disentangle the audit effort and quality component from the audit risk component in audit fees for all types of firms.

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 part refers to detection risk, as auditors explain the audit procedures performed to address and alleviate the risk identified as a KAM. Figure 1 displays how the KAM components are related to the ones of audit risk.[6] 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 1 here]

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 et al., 2020). Although some risks are inherent to an industry, KAMs

[6] Adapted and completed from https://blog.aicpa.org/2019/04/the-audit-risk-model-your-first-step-in-risk-assessment.html

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 part of KAMs that reflect 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 part 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 part 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 part of the KAM is negatively associated with audit risks, reflecting lower detection risks.

By linking the KAM components with audit risk components, KAMs provide opportunities to disentangle audit risk from audit effort in audit fees. Inherent and control risks increase audit risk and are present before auditors perform any procedures. The risk description part of the KAM thus provides a setting where audit risks are likely to be high while audit effort is low. On the contrary, auditors perform additional procedures to reduce detection risk (Hogan & Wilkins, 2008). This is reflected in the auditors' response and observation part providing a setting with low audit risk and high audit effort. KAMs thus provide a setting where the

correlation between audit risk and audit effort is likely negative. In this case, audit effort would bias against finding significant associations between client-specific information in KAMs and audit risk.

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. We explain our dissimilarity measures in the next section.

3. KAM Dissimilarity Measures and Sample Selection

3.1. KAM Dissimilarity Measures

We develop three KAM dissimilarity measures to capture auditors' disclosure of client-specific information in KAMs, i.e. for the full KAM disclosures and its two components: (a) the risk description and (b) the response and observation. 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 (Brown & Tucker, 2011), accounting policy footnotes in 10-K filings (Peterson, Schmardebeck, & Wilks, 2015) or the text of annual reports in a cross-cultural study (Lang & Stice-Lawrence, 2015). However, the auditing literature examining the similarity of KAMs is still sparse (Burke et al., 2021; Chen 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 thanks to KAM dissimilarity measures. 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.[7] 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.

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., 2021; Chen et al., 2020), and KAMs pertaining to groups with less than five industry peers (Burke et al., 2021; Chen et al., 2020; Zeng et al.,

[7] 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.

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.[8]

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 which relate to different accounts although they are part of the same type of risk. As we analyze each KAM, we ensure there is only one KAM for the firm analyzed in the sub-group. We then turn to the other KAM having the same topic for the same firm and rerun the same procedure. This results in having a slightly different sub-group when computing the similarity scores.[9] Our measure goes beyond the similarity scores used in prior literature (Burke et al., 2021; Chen et al., 2020; Zeng et al., 2021) and enables comparing industry peers facing the same type of risks.

We follow Brown and Tucker (2011) to calculate a similarity score for each pair, and we average all the pairs formed per KAM to get a measure at the KAM level. We then average the scores obtained per firm to get a measure at the firm-year level, we adjust the scores for document length as in Brown and Tucker (2011). The dissimilarity variables equal one minus the similarity score. Higher scores represent greater dissimilarity. Appendix 2 offers a detailed explanation of the computation of our dissimilarity variables.

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.[10]

[8] We lose 17 firm-year observations by adding this constraint.

[9] 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.

[10] 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.

Table 1 Panel A presents the sample selection process. From 2013 to 2019, there are 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 without annual reports, or which did not report any KAM (61 firm-year observations) and observations with 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 are presented in Table 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 collect 6,060 KAMs from 1,851 non-financial firm-year observations.

[Insert Table 1 here]

Table 1 Panel C provides the distribution of KAM topics. We group KAMs per topic, industry, and year. We ensure there is at least a KAM from five different firms in each sub-group to have a minimum benchmark to compare firms with. We identified 17 categories of KAMs with the most frequent KAMs being "Revenue recognition" (18.28%) and "Valuation of intangible assets" (17.79%). We believe that our KAM topic allocation is representative and consistent with the major risks reported by auditors following ISA701 in Europe (Dixon, 2020).[11]

4. Empirical Results

4.1. Descriptive Statistics

[11] The Audit Analytics database reports "Asset Impairment and Recoverability" (24.2%) and "Revenue and Other Income" (17.2%) as the two major KAM topics for European firms in 2019 (Dixon, 2020).

Table 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*.[12,13] 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 part of the KAM is longer than the risk description part 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 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 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

[12] 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.
[13] We omit time and firm subscripts when mentioning variables in our paper for ease of exposition.

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. Our three dissimilarity scores are highly correlated among themselves, which is not surprising as they are computed following the same methodology. 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., Bradbury & Almulla, 2019; Rousseau & Zehms, 2020). 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.[14]

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 overall 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:

[14] 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.

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

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 overall KAM dissimilarity measure (*KAM_DISSIMILARITY*) as the independent variable to test hypothesis H3. In the first model, *LENGTH_RATIO* is the ratio of the length of the response and observation over the length of the entire KAM disclosure.[15] In the second model, *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 et al., 2020). We also control for the number of KAMs disclosed per firm (*NB_KAM*) as it is positively associated with audit fees (Bradbury & Almulla, 2019).

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 and receivables (*INVREC*), and with a series of dummies whether the firm engages in foreign

[15] 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.

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 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.[16] 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 3.

Table 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).*[17]

[16] 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.
[17] 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 (respectively positive and negative, Column (1)) supporting our hypotheses H1 et H2. These coefficients respectively equal 0.901 and -1.721. These results are also economically significant. A one standard deviation increase in *DESCR_DISSIMILARITY* results in a 4.99% increase in audit fees.[18] A one standard deviation increase in *RESP_DISSIMILARITY* results in a 7.77% decrease in audit fees.[19] Considering the economic magnitude of the coefficients, these results show that dissimilarity in the response and observation part of the KAM results in a greater decrease in audit fees compared to the increase resulting from the dissimilarity in the risk description part. These results are consistent with our hypotheses H1 and H2.

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

[18] The standard deviation of *DESCR_DISSIMILARITY* is 0.051, and $e^{(0.901 \times 0.054)}-1=0.0499$.
[19] The standard deviation of *RESP_DISSIMILARITY* is 0.047, and $e^{(-1.721 \times 0.047)}-1=-0.0777$.
[20] 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 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. These results are consistent with prior literature (e.g., Bradbury & Almulla, 2019; Chen 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 rule out the alternative explanation that the reduction in detection risks and audit risks implies lower audit quality and audit effort.

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).[21] 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).[22] We define infrequent topics as topics different from the two most frequent KAMs ("Revenue recognition" and "Valuation of intangible assets").

Table 4 Panel 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 3). The coefficients for both subsamples respectively equal 1.223 and 0.542 for *DESCR_DISSIMILARITY;* -2.620 and -1.317 for *RESP_DISSIMILARITY*; and -1.522 and -0.653 for *KAM_DISSIMILARITY*. 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

[21] 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.

[22] 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 qualitatively similar, but the difference in coefficients for *KAM_DISSIMILARITY* is not significant.

DESCR_DISSIMILARITY and *RESP_DISSIMILARITY* in the subsample with a majority of infrequent KAM topics are not statistically significant. Similarly, the differences in the coefficients for the two KAM components between the frequent and infrequent topics subsamples are not statistically significant.

[Insert Table 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 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 (coefficient of 1.312 significant at the 5% level). 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, with, respectively, coefficients of -1.974 and -1.391. 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 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. The score ranges from 0 to 1, and a higher score denotes a greater ESG performance and the degree of transparency in reporting material ESG data publicly. 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, 2016). 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.[23]

Table 5 Panels B and C provide results for 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

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

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 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 (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, Jeny, & Jiang, 2016).

Table 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 part 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 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., 2002). 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 lower tenure.

Table 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 part of the KAM as auditors can better identify the audit risks of their client. However, longer auditor tenure can also bias auditor independence and prevent auditors to disclose client-specific information in KAMs.

5.4. Alternative Explanations Regarding Audit Quality and Audit Effort

In this section, we examine the alternative explanations that the negative associations found between dissimilarity in the response part and the overall KAM and audit fees induce lower audit quality and lower audit effort. As mentioned by DeFond and Zhang (2014), prior literature does not disentangle whether higher audit fees result from greater audit quality and audit effort, or a risk premium. In a recent study, Ranasinghe et al. (2022) provide evidence of a client

business risk premium. Their findings provide evidence that an increase (decrease) in audit fees is not necessarily attributable to an increase (decrease) in audit quality and audit effort.

We alternatively use four proxies of audit quality. It is important to use several audit quality proxies 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), the propensity of managers to report small profits and to report small earnings increases. The third audit quality proxy we use is a dummy variable for new clients. Greater earnings management and auditing new clients are both associated with lower audit quality (e.g. Aobdia, 2019).

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. On the other hand, we expect greater client-specific information in the response part of the KAM reflecting the audit procedures performed to be associated with higher audit quality.

Table 7 Panel A reports the results of this analysis. 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.

[Insert Table 7 here]

Table 7 Panel B reports the audit effort analysis. 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 and

alternatively the earnings announcement date respectively for *REPORT_LAG* and *EARNINGS_LAG* (Glover, Hansen, & Seidel, 2021; Ranasinghe et al., 2022). We find a positive association between *KAM_DISSIMILARITY* and both audit effort proxies. Moreover, *RESP_DISSIMILARITY* is also positively associated with *REPORT_LAG*.

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 reduces the overall level of audit risk while increasing 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 alleviate concerns about multi-collinearity issues. 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

In this robustness test, 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 results are qualitatively similar to our main findings reported in Table 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

In this robustness test, we modify our KAM dissimilarity measures based on the Cosine Similarity Scores (CSS). We initially computed the CSS between each pair at the topic-industry-year level and averaged all the pairs to get a score at the KAM level. Here, we concatenate the text of all the KAMs of industry peers with the same KAM topic per year. This enables us to have only one pair per KAM and improves granularity by removing one level of averaging at the KAM level. Our results are similar to our main findings in Table 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 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).[24] The results are qualitatively similar to our main findings reported in Table 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

[24] Note that in this model we do not include *NASFEES* as control variable as it is included in *TOTFEES*, the dependent variable.

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 part 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 part 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). In this robustness test, 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 ISA701. Our results are qualitatively similar to our main findings (untabulated).

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 proxy audit risk by audit fees (Cassell et al., 2011; Hay et al., 2006; Hogan & Wilkins, 2008; Simunic, 1980). We decompose and link both KAM components with the three 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 part 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 part 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 part. This explains our finding in the overall KAM disclosures for which we find that client-specific information in KAMs is negatively associated with audit risks. In additional analyses, we rule out the alternative explanations that the negative associations found between dissimilarity in the response part and the overall KAM and audit fees imply lower audit effort and quality. Our results are consistent with auditors charging an audit risk premium (Ranasinghe et al., 2022). Our results suggest that the reduction in audit risks lowering audit fees is greater than the audit effort and the costs to perform high audit quality that would increase audit fees.

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, Raghunandan, & Subramanyam, 2002; 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 disentangle between the audit risk premia and audit quality proxied by audit fees.

We believe this paper is also of interest to regulators as it provides insights on 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 importance 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 in the US. While KAMs refer to risks of material misstatements, CAMs refer to material misstatement (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.

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Appendix 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 the 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. These examples 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: Measure of KAM Dissimilarity

In this Appendix, we detail how we measure KAM dissimilarity with the Cosine Similarity Score (CSS). We follow the same methodology for the full KAM disclosures (*KAM_DISSIMILARITY*) and its two components: (a) the risk description (*DESCR_DISSIMILARITY*), and (b) the auditors' response and observation (*RESP_DISSIMILARITY*). CSS is a mathematical formula that measures how similar two documents are. The CSS formula between two vectors A and B is as follows, where A and B represent vectors containing the word counts of each document:

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

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. For 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.[25]

After converting the text of each KAM into an array of words, we clean the text in several steps. First, we check the consistency of the words. This includes putting the text in lower case, verifying American versus English writing styles to have similar orthographs, and removing hyphens in words. We also transform n-grams into their corresponding abbreviations as they reflect the same word since auditors use a lot of abbreviations when writing KAMs. Second, we remove all the numbers and all the non-alphanumerical characters, such as punctuation or special characters. Third, we remove all the stop words based on the list of stop words available

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

on the Notre Dame Software Repository for Accounting and Finance.[26] We also add stop words, similar to the ones removed previously mainly including locations, currencies, and firm names. Similarly, we remove words, which are unique to a firm, likely to be firm names, and words, which appear only once in the full database, likely to be erroneous words or stop words. After cleaning the text, we lemmatize and stem the text to its root form. [27, 28]

We use the term-frequency-inverse document frequency (TF-IDF) as 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. After applying the TF-IDF, the CSS is comprised between 0 and 1, with higher values corresponding to greater similarity. As we focus on KAM dissimilarity, we obtain the dissimilarity scores by doing one minus the CSS.

To alleviate the concern of document length, we follow Brown and Tucker (2011) who adjust their *Rawscore* (CSS obtained as explained previously) for document length using a Taylor expansion at 0. They regress their *Rawscore* on the first five polynomials of document length, where document length equals the number of words in the cleaned document. We follow the same methodology by regressing each dissimilarity variable on the five polynomials of the corresponding document length as follows:

$$CSS = \beta_0 + \beta_1 LEN + \beta_2 LEN^2 + \beta_3 LEN^3 + \beta_4 LEN^4 + \beta_5 LEN^5 + \varepsilon$$

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

[27] "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)

[28] "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)

Where *CSS* and *LEN* respectively and alternatively represent *CSS_KAM* and *KAM_LENGTH*; *CSS_DESCR*, and *DESCR_LENGTH*; and *CSS_RESP* and *RESP_LENGTH*. We get dissimilarity scores adjusted for document length by doing the dissimilarity score minus the fitted value obtained from the regression. These scores are our independent variables: *KAM_DISSIMILARITY*, *DESCR_DISSIMILARITY*, and *RESP_DISSIMILARITY*.

The following table reports the scores before adjusting them for document length. These scores range between 0 and 1 with greater scores representing greater dissimilarity. KAMs are dissimilar relative to industry peers with an average (median) of 0.793 (0.797) for *CSS_DESCR*, 0.774 (0.774) for *CSS_RESP*, and 0.722 (0.722) for *CSS_KAM*. There are small variations among the dissimilarity scores with standard deviations of 0.055, 0.049, and 0.060, respectively. The risk description part of the KAM is on average more dissimilar and has a greater standard deviation than the auditors' response and observation part.

	N	Mean	SD	Min	p25	Median	p75	Max
$CSS\_DESCR_{i,t}$	1,851	0.793	0.055	0.635	0.759	0.797	0.831	0.914
$CSS\_RESP_{i,t}$	1,851	0.774	0.049	0.643	0.742	0.774	0.806	0.886
$CSS\_KAM_{i,t}$	1,851	0.722	0.060	0.575	0.680	0.722	0.762	0.861

Appendix 3: 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 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 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 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 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 regressing the cosine similarity score on the first five polynomials of KAM length, using a Taylor expansion at 0 following 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
$LOSS_{i,t}$	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
$FOREIGN\_OPERATIONS_{i,t}$	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 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* as 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* as 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 discretionnary 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* being 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.

Figure 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.

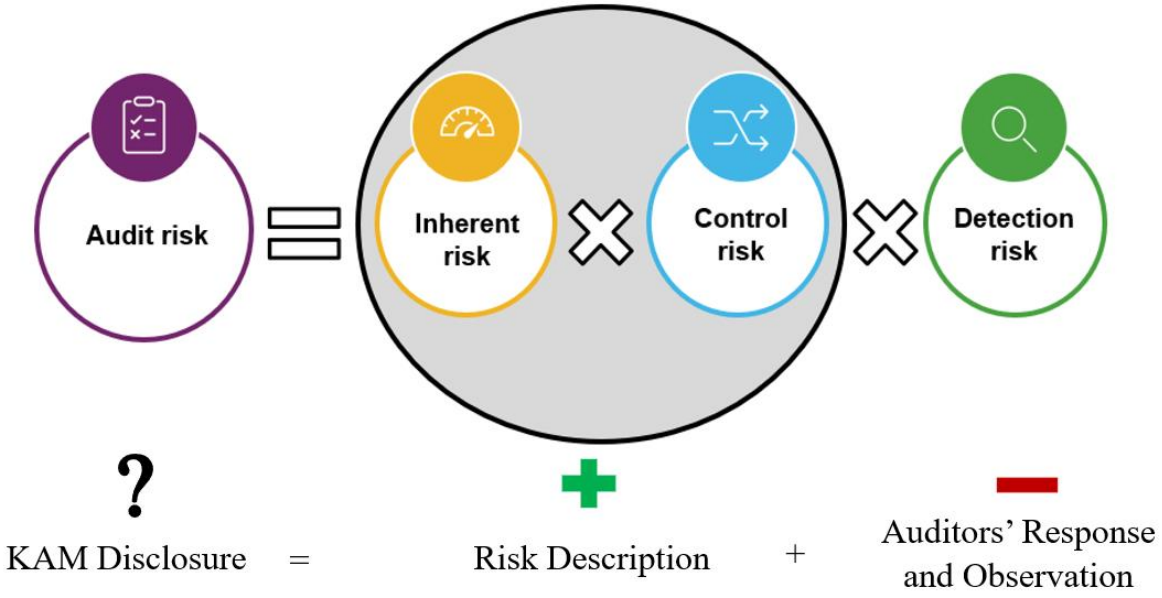

Table 1: Sample Selection

Table 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

Industry = SIC 1-digit	
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
Minus 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**
Minus firm-year observations without annual report found nor KAMs	-61
Total firm-year observations	**1,931**
Minus 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: Descriptive Statistics and Correlation Matrix

Table 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, 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 3.

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 3: Regression of KAM Dissimilarity on Audit Fees

Table 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 its 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 3. 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 4: Cross-Sectional Tests Based on KAM Characteristics

Table 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 its 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 3. 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 5: Cross-Sectional Tests Based on Client Firm Characteristics

Table 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 its 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 3. 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 6: Cross-Sectional Tests Based on Audit Firm Characteristics

Table 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 its 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 3. 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 7: Alternative explanations

Panel A: Audit Quality Analysis

Table 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 3. 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