



Contents lists available at ScienceDirect

Research in International Business and Finance

journal homepage: www.elsevier.com/locate/ribaf



The impact of financial risk on boilerplate of key audit matters: Evidence from China

Qi Wang^a, Lin Zhang^a, Qianqun Ma^{a,*}, Chong Wu^b

^a Business School, Southwest University of Political Science and Law, Chongqing, China

^b School of Management, Harbin Institute of Technology, Harbin, China



ARTICLE INFO

Keywords:

Key audit matters
Financial risk
Textual similarity
Audit reports

ABSTRACT

This paper examines whether auditors of firms with higher financial risk disclose less boilerplate of KAMs. Our empirical study demonstrates that KAMs are more differentiated if the firms are subject to higher financial risk. This association is only pronounced for client firms in the weaker legal environment and audit firms with larger market shares. In addition, client pressure will weaken the motivation of auditors to differentiate KAMs of firms with a higher level of financial risk. We also find that auditors are more likely to differentiate KAMs related to firms' profitability if firms are subject to high financial risk.

1. Introduction

The deficiencies of traditional audit reports spurred IAASB (International Audit and Assurance Standard Board) to introduce an expanded audit reporting model, requiring external auditors to disclose key audit matters (KAMs). The China Ministry of Finance (CMF) adopted the expanded audit reporting model and issued CSACPA 1504 in 2016, which became fully effective on January 1, 2018. To motivate auditors to convey private information, they are encouraged to disclose KAMs using personalized wordings. However, as differentiated disclosure is at risk of conveying audited firms' confidential information and auditors can hardly benefit from personalized audit reports, the KAMs are disclosed using innocuous and standardized language (Minutti-Meza, 2021). While the literature expresses concern with the boilerplate of KAMs, it finds that KAMs are not always a boilerplate as they sometimes provide risk-related information (Seebek and Kaya, 2023; Zeng et al., 2021). Current studies have begun to explore the reasons behind the boilerplate of KAM disclosures (Minutti-Meza, 2021; Yau, 2019). However, no study explores the factors that motivate auditors to disclose differentiated KAMs.

Ma et al. (2023) examine how clients' financial risk affects the association between auditors' KAM disclosure strategies and negative media coverage but fail to investigate the direct influence of clients' financial risk on the boilerplate of KAMs. However, clients' financial risk may substantially motivate auditors to tailor the KAMs instead of only acting as a modifying function. Ma et al. (2023) argue that negative media coverage will increase auditors' perceived litigation risk. However, clients' high financial risk will directly increase auditors' legal costs. According to Chan and Liu (2023), auditors will provide more precise KAMs when material misstatement brings investors losses. When clients have a high level of financial risk and are issued a financial report with material misstatement but an unqualified audit opinion, investors are more likely to come across significant losses and are more likely to recover from the auditors. Moreover, according to CSACPA 1504, KAMs are the matters that have the most significant influence on

* Corresponding author.

E-mail address: qima4957@163.com (Q. Ma).

audit procedures and audit opinion. Compared to media coverage, financial risk is a more critical matter that auditors should focus on through the audit work. Therefore, further research on the association between clients' financial risk and auditors' KAM disclosure strategy is still necessary. Appendix A lists the KAMs disclosed by the two companies in 2020 regarding goodwill. Although both companies were issued with unqualified audit opinions in that year, the first company (with a stock code of 600273) had a relatively low level of financial risk ($Z\text{-score} > 2.617$), and the second company (with a stock code of 600654) had a relatively serious financial risk around 2020 ($Z\text{-score} < 1.8$). Compared to the first company, the second company had a relatively high level of text differentiation in the description of goodwill risks and corresponding resolutions in the KAM disclosures.

Under the traditional audit report model, when the auditors believe that there is significant uncertainty in the ability of the company to continue as a going concern, they need to issue audit opinions on going concern uncertainty. However, this requirement may not increase the informative value of the audit report to financial risk. First, as GCO further deteriorates the financial status of enterprises, the purchase behavior of GCO is relatively serious worldwide (Chung et al., 2019). Second, although the application guide of auditing standards 1324 lists the circumstances that affect the going concern ability of enterprises, the going concern ability of enterprises is affected by the evaluation time, the scale of the audited unit, the nature of the operation, and other aspects, and it is difficult for auditors to predict the uncertainty of going concern. Third, when the going concern ability of enterprises affects the accounting basis of enterprises, auditors need to issue the GCO. Financial risk includes the impairment of solvency caused by improper financing structure and the difference between the expected results and the actual income caused by financial behaviors. That is to say, the high financial risk of enterprises does not mean that there is uncertainty of going concern. Therefore, in the traditional audit report model, the audit opinion cannot fully convey the information of corporate financial risk. In the expanded audit report model, the KAMs provide an additional information channel for auditors to convey the financial risk judgment of the auditors.

China's unique institutional background provides an opportunity to investigate the motivation behind differentiated KAM disclosures. First, China has a strong uncertainty-avoidance culture that considers differences dangerous (Hofstede et al., 2010). Therefore, Chinese auditors may be more inclined to use standardized wordings when disclosing KAMs. Nonetheless, Zeng et al. (2021) find that auditors in China do not always disclose the boilerplate of KAMs. An investigation of the incentive of differentiated KAM disclosures is necessary. Second, opinion shopping, especially GCO shopping, is widespread in China (Chan et al., 2006), which calls for other ways to attain information about firms' financial risk. Third, most of the investigations on the effectiveness of the expanded audit reporting model are focused on a more efficient capital market (e.g., Brasel et al., 2016; Kachelmeier et al., 2020). China provides a setting to examine the influence of KAM disclosures in the emerging market. Moreover, CSACPA No.1504 is similar to ISA No.701, issued by IAASB. Therefore, our findings also provide evidence for the standard setters on the effectiveness of ISA No.701.

This study aims to examine whether auditors' KAM disclosures are affected by firms' financial risk. Specifically, we investigate whether textual similarity is associated with the level of financial risk. We focus our examination on firms listed in China's A Stock Market. To carry out our analysis, we calculate the textual similarity of KAM disclosures for firms receiving expanded audit reports for fiscal years from 2017 to 2020 using Levenshtein Edit Distance (LVD). To investigate why financial risk reduces the textual similarity of KAMs, we partition our sample into groups with different legal environments and market shares of audit firms, influencing the assessment of audit risk. We also examine the effect of client pressure on the association between KAMs' textual similarity and clients' financial risk. Moreover, we recalculate the similarity of individual KAMs related to revenue recognition, inventory, cash and accounts receivable, long-term assets impairment, and investment. These five types of KAMs account for more than 80 percent of KAM disclosures in our sample. According to Camacho-Miñano et al. (2021), these five types of KAMs primarily impact a firm's profitability, liquidity, or solvency, which are ratios included in well-known and popular bankruptcy prediction models (Altman, 1968; Altman et al., 2017; Lukason and Laitinen, 2019). Therefore, by considering account-level KAMs individually, we explore which types of KAMs auditors will decrease in textual similarity if client firms' financial risk is high.

This study makes several contributions. First, our investigation adds to the literature on the textual similarity of KAMs. Studies demonstrate that the current guidelines provide a narrow latitude for auditors to give incremental information through KAMs (Minutti-Meza, 2021). To decrease the cost of disclosure (Yau, 2019), avoid communicating clients' sensitive information (Minutti-Meza, 2021), or reduce liability (Brasel et al., 2016; Kachelmeier et al., 2020), auditors are likely to disclose the boilerplate of KAMs. In response to the boilerplate disclosure concern, we explore the motivation behind auditors' use of different wordings to present KAM paragraphs. Our findings show that client firms' financial risk increases auditors' assessment of audit risk, which compels auditors to reduce the textual similarity of KAMs.

Second, our investigation contributes to the literature on auditors' behavior. Prior studies validate that when the assessment of audit risk is high, auditors will increase audit fees (Gong et al., 2018), modify audit opinions (Joe, 2003; Mutchler et al., 1997), or increase the number of KAMs disclosed (Pinto and Morais, 2019). Our findings suggest that when client firms' risk is high, reducing the standardized wordings in audit reports is an additional strategy the auditor will conduct in KAM disclosures.

Finally, this study is useful for standard-setters. Our findings provide the users of audit reports with a better understanding of the factors that affect auditors' boilerplate of KAM disclosures. Our findings also validate the effectiveness of KAMs in China. While the IAASB expresses concern that standardized KAMs would weaken the communicative value of audit reports, our findings indicate that auditors will strategically modify the textual similarity of KAMs based on the risk they perceive. Therefore, our findings provide empirical evidence that KAMs are not always boilerplate but also provide risk-related information.

2. Literature review

2.1. KAMs and financial risk

According to CSACPA1504, KAMs should be the area identified as a significant risk requiring modification of the audit strategy. Therefore, KAMs should provide information about clients' specific risks. KAMs convey the risk of material misstatement, or the risks may lower users' confidence in financial statements (Christensen et al., 2014; Kachelmeier et al., 2020). Prior studies find that clients' leverage and structural complexity will increase the number of reported KAMs (Sierra-García et al., 2019). However, current studies also prove that auditors' size will affect their KAM disclosures. Moroney et al. (2021) find that Big4 audit firms disclose more KAMs, and the number of KAMs is larger in audit reports with an unqualified opinion. A possible explanation for these findings is that auditors seek a method to rationalize their judgment while avoiding the negative consequences of modified audit opinions (Asbahr and Ruhnke, 2019).

2.2. The communicative value of KAMs

The supporters of audit reporting reform argue that KAMs change investors' behaviors (Christensen et al., 2014), guide the attention of investors when reading financial reports (Sirois et al., 2018), enhance investors' perceived quality of financial reports (Elliott et al., 2020; Hoang and Phang, 2021), increase the credibility of auditors (Moroney et al., 2021), and provide valuable risk-related information regarding the COVID-19 pandemic (Kend and Nguyen, 2022). However, empirical studies on the UK (Gutierrez et al., 2018) and French (Bedard et al., 2019) capital markets find that the behavior of investors does not significantly change after companies apply the KAM reporting model. Lennox and Pittman (2011) argue that KAMs can hardly provide incremental information, as the information contained in KAM disclosures in audit reports is also available from other resources. Brasel et al. (2016) opine that auditors will only disclose innocuous KAMs in auditing reports to avoid perceived liability, which hinders the communicative value of KAMs. However, Zeng et al. (2021) aver that the KAMs of listed companies in China are not overwhelmed by boilerplate. Seebek and Kaya (2023) examine the communicative value of KAMs and establish that KAM disclosures include standardized words and provide risk-related information. Therefore, determining the communicative value (or otherwise) of KAMs in China's unique institutional background remains noteworthy.

2.3. Factors of boilerplate in KAMs

Current literature has proved that auditors are likely to standardize the disclosures of KAMs (Brasel et al., 2016). Kend and Nguyen (2022) conduct a statistical analysis of the audit reports in Australia in 2017 and 2018, finding that 70% of auditors reported the same KAMs for two consecutive years. Yau (2019) finds that auditors would imitate the disclosure of industrial experts when disclosing KAMs to reduce the disclosure cost and improve the disclosure efficiency. Minutti-Meza (2021) argues that, to avoid disclosing confidential information of clients, auditors will standardize the wording of KAMs. In addition, prior studies prove that the boilerplate of disclosure has a disclaimer effect on auditors (Brasel et al., 2016; Kachelmeier et al., 2020).

However, Zeng et al. (2021) find that the boilerplate of KAMs is not overwhelmingly in China. Arikan (2022) finds that reporters are willing to tailor the risk-related information to decrease litigation risk. When the litigation costs are high, managers will decrease the boilerplate of risk information to avoid legal liability, but this effect is more significant in voluntary disclosure (Nelson and Pritchard, 2016).

Arikan (2022) uses experimental research to prove that the boilerplate of KAMs will reduce the market reaction to information only when risk information is not available to the public. On the contrary, Bozanic and Thevenot (2015) indicate that the reduced boilerplate of risk-related information will break investors' transcendental belief, increasing investors' perceived uncertainty and decreasing investors' willingness to invest in the company. Moreover, Lang and Stice-Lawrence (2015) argue that boilerplate of risk-related information will decrease subjectivity, improving the accuracy of information communication.

Overall, although a large number of studies discuss the influencing factors and economic consequences of the boilerplate of risk information, and some studies begin to investigate the internal motivation of auditors to disclose the boilerplate of KAMs, no literature studies the factors of the differentiation of KAMs. Moreover, whether KAMs convey information about corporate financial risk is still a problem that needs to be solved.

The literature reveals that the assessment of audit risk will change auditors' disclosures of KAMs, and KAMs are not always boilerplate but are still risk-related. However, current studies focus on the motivation behind the boilerplate of KAMs, and a few research works investigate the incentive of differentiated KAM disclosures. Moreover, whether KAMs convey information about corporate financial risk is still a problem that needs further investigation. Consequently, by examining whether the boilerplate of KAMs varies with firms' financial risk in China's audit report reform, this study investigates the motivation of auditors to use more distinguished wordings in KAM disclosures.

3. Theory and hypothesis development

3.1. Financial risk and textual similarity of KAMs

The risk-based approach requires the performance of a business process analysis to assist auditors in identifying significant risks

and the financial statement implications of the risks. The assessment of clients' risk affects audit strategy (Bell et al., 2001). Additionally, as the GCO is costly for auditors who intend to maintain amicable relationships with clients, the proportion of audit reports with a GCO is small. Therefore, although a risk-based approach in planning and executing audit strategies has long been used, the traditionally standardized audit reports provide a narrow latitude for auditors to communicate their judgment on clients' risk. KAMs have the greatest effect on the overall audit strategy and require material audit judgment. Therefore, auditors' judgment regarding clients' risk should affect their KAM disclosures, which provides auditors with an avenue to heighten clients' risk while avoiding the negative results of GCO.

The specific risk-based disclosure will alleviate the perceived negligence of auditors, as it validates auditors' intention to conduct a quality risk-based audit to avoid harmful outcomes (Backof, 2015). Moreover, higher risk assessment compels auditors to conduct specific risk-based procedures to review firms more thoroughly to reduce audit risk (Bell et al., 2001; Nelson et al., 1988), which will be disclosed in KAMs (Pinto and Morais, 2019). Therefore, we predict that the financial risk will decrease the textual similarity of KAMs.

We state our first hypotheses as follows.

H1. : Textual similarity of KAMs is negatively associated with the level of firms' financial risk.

3.2. The effect of legal environment

Auditors are required to analyze the firm's legal environment during the risk assessment stage. The external legal environment may affect auditors' behaviors in two aspects. According to the "cost-efficient theory", auditors will exert more efforts when they perceive higher audit risk. In the strong legal environment, the legal risk and legal cost of the manager's accounting misconduct are high since it reduces the motivation of managers to engage in fraud (Skinner, 1994; Glaum et al., 2018), thereby reducing the risk of material misstatements. Therefore, even if the company has a high financial risk, the possibility of financial risks transforming into the risk of material misstatement is lower. Auditors will reduce the risk assessment of clients in the strong legal environment (Pinto and Morais, 2019; Kuo et al., 2023), which will decrease the audit efforts auditors are willing to exert. Therefore, based on the "cost-efficiency theory", the auditors will reduce the detailed audit procedures, thus increasing the boilerplate of KAMs when the legal environment is weaker.

Based on the "disclaimer effect theory", the stronger legal environment will also increase the legal liability faced by the auditors. When the auditors issue an unqualified audit opinion, and the clients have a high financial risk with material misstatement, the legal liability of the auditors who fail to give sufficient information in the audit report will increase. The increased legal liability will encourage the auditor to issue more precise and detailed KAMs (Chan and Liu, 2023). The weak legal environment decreases the auditors' perceived legal liability. Conversely, when the legal environment is strong, the possibility of the auditor being punished and held jointly and severally liable for the clients' financial risk will increase. Based on the Culpable Control Model, the willingness to avoid losses will reduce the responsibility of reporters (Alicke, 2000; Alicke et al., 2008), while a more precise risk-related disclosure can prove the auditors' willingness to exert high-quality risk-oriented audits to avoid losses (Backof, 2015), thus avoiding auditors' legal liability. The increased legal risks further enable auditors to claim that they have made sufficient risk disclosure through differentiated disclosure of KAMs. Therefore, based on the "disclaimer effect theory", auditors will increase the boilerplate of KAMs when the legal environment is stronger.

On this basis, we present the following hypothesis.

H2(a). : The impact of firms' financial risk on the textual similarity of KAMs is greater for firms subject to the weaker legal environment than those subjected to the stronger legal environment (Cost-efficiency theory).

H2(b). : The impact of firms' financial risk on the textual similarity of KAMs is greater for firms subject to the stronger legal environment than those subjected to the weaker legal environment (Disclaimer effect theory).

3.3. The effect of the market shares of audit firms

The impact of reputation damage on auditors' behaviors varies with their market shares. The audit firms possessing larger market shares have more quasi-rents to lose, so they care about reputation more than maintaining good customer relationships (DeAngelo, 1981). Therefore, under the "disclaimer effect theory", auditors with larger market shares will take clients' financial risk more seriously than those with smaller market shares and directly issue the GCO rather than tailor the KAMs. However, KAMs provide smaller audit firms, which are more likely to compete for clients, an additional strategy, providing more tailored KAMs with an unqualified audit opinion. Therefore, under the "disclaimer effect theory", audit firms with smaller market shares are more likely to disclose KAMs with less boilerplate when the clients' financial risk is high.

As indicated in the development of H1, under the "cost-efficiency theory", clients' financial risk is likely to initiate reputation damage or regulatory sanction, which compels auditors to expend more efforts and resources and decreases the boilerplate of KAMs. However, audit firms with smaller market shares intend to conform more strongly to clients' preferences (Brownstein, 2003; Kunda, 1990; Yuan et al., 2020), and they have limited audit resources. Based on CSACPA 1504, KAMs should be selected from matters communicated with those charged with governance. When the engagement is substantially completed, auditors must communicate how KAMs are disclosed to clients (Minutti-Meza, 2021). Therefore, if auditors' market shares are small, KAM disclosures may be significantly affected by client firms. Although the clients' financial risk is higher, constrained by limited audit resources and a higher need to compete for clients, auditors with smaller market shares will not exert more audit efforts, which will lead to the boilerplate of

KAM disclosures. As China has a strong uncertainty-avoidance culture that considers the difference dangerous (Hofstede et al., 2010), firms may be reluctant to be distinguished from others in KAM disclosures. Therefore, firms may limit the differentiated KAM disclosures during communication with auditors. On this basis, we state our hypothesis as follows.

H3(a). : The impact of clients' financial risk on the boilerplate of KAMs is stronger for auditors with larger market shares than those with smaller market shares (Cost-efficiency theory).

H3(b). : The impact of clients' financial risk on the boilerplate of KAMs is stronger for auditors with smaller market shares than those with larger market shares (Disclaimer effect theory).

4. Methodology

4.1. Sample selection

According to CSACPA No.1504, only entities listed on the A-stock and H-stock markets were required to disclose KAMs in their audit reports covering the financial year ending December 31, 2016. Other A-Stock entities were required to implement CSACPA No. 1504 from January 1, 2018. As the sample size of 2016 is smaller (only 91 audit reports disclosed KAMs in 2016) and the first year of the policy implemented is not representative, our main tests only include the sample from 2017 to 2020. From 2017–2020, 14,940 audit reports disclosed KAMs (excluding the samples that are specially treated). The unique nature of accounting for financial enterprises eliminates 439 firm-year observations for financial companies. We also exclude 320 firm-year observations with modified audit opinions and 2431 firm-year observations with missing data. The remaining sample contains 11,750 firm-year observations. **Table 1** shows the composition of our sample and the sample selection process. We obtain KAMs' textual data from the Chinese Research Data Services, and other financial statistics are obtained from the China Stock Market and Accounting Research Database.

4.2. The measure of textual similarity

A frequently used boilerplate measurement approach is the vector space model (VSM) (e.g., Johnston and Zhang, 2021; Zeng et al., 2021). However, a significant disadvantage of this method is that it only compares the similarity of keywords independently and fails to consider the sequential order and relation among the keywords in the passage. Koonce and Mercer (2005) indicate that variations in information content placement signal different levels of significance to investors. For example, “we find no abnormality” is more positive and certain than “no abnormality is found”. However, both presentations are the same under VSM, especially in Chinese, where “find” and “found” are the same.

We measure the boilerplate ($Sim_{i,t}$) using the LVD. LVD is the number of minimum operations needed to change one string to another by deleting, inserting, or substituting a character. Therefore, compared to VSM, the LVD also considers the sequential order of keywords. The boilerplate of KAMs is precisely calculated as follows.

- (1) We use “Jieba”, the Python Chinese words segmentation utilities, to separate all the documents of KAMs. The accounting professional dictionary is imported to “Jieba” to enable it to discern 426 accounting and auditing professional words, such as goodwill impairment, revenue, account receivable, KAMs, financial reports, accounting estimation, and audit reports.
- (2) We delete punctuation and the stop-words, such as “besides”, “above all”, “you”, “we”, “me”, “she”, “he”, and “I”, from the segmentation result. The stop-words are from the Chinese Stop-word List and the Baidu Stop-word List.
- (3) We use “Levenshtein”, a Python topic modeling tool, to calculate LVD. We use the “Distance” method in the modeling tool, which calculates the least operations to transform the text of company A to that of company B by deleting, inserting, or substituting.
- (4) We use Eq. (1) to calculate the textual similarity of KAMs. In Eq. (1), the max (lenth1, lenth2) is the length of the longer string. Dist is the edit distance between the two strings. We first calculate $LVD_{i,j}$ between the KAMs of firm i and that of each firm j in the same industry in year t . $Sim_{i,t}$ is the average of $LVD_{i,j}$ of firm i . The value of $Sim_{i,t}$ ranges from 0 to 1, and a higher value indicates a higher textual similarity of KAMs.

$$LVD_{i,j} = 1 - \frac{Dist}{\max(lenth1, lenth2)} \quad (1)$$

Table 1
Sample selection.

Firm-year observations with KAMs (Excluding the samples that are specially treated) from 2017 to 2020	14,940
Less observations for financial enterprises	(439)
Less observations with modified audit opinions	(320)
Less observations with missing data	(2431)
Final sample	11,750

4.3. The measure of financial risk

Referring to Altman (1968), we calculate the Z-score using Eq. (2) to measure financial risk.

$$Z\text{-score} = 1.21 \times \frac{WC}{Asset} + 1.4 \times \frac{RE}{Asset} + 3.3 \times \frac{EBIT}{Asset} + 0.6 \times \frac{Equity}{Liability} + \frac{REV}{Asset} \quad (2)$$

Where *WC* is the working capital, which measures the net liquid asset of a firm. *RE* is the proxy for the financial leverage of a firm, measured as the retained earnings. *EBIT* is the earnings before interest and taxes. *Equity* divided by *Liability* measures the portion of firms' assets that could decline before the liability exceeds the assets. *REV* is the firm's operating revenue. A higher Z-score indicates a lower level of financial risk. *FD* is the proxy for financial risk, measured using Altman's Z-score.

4.4. Multivariate model

To test H1, whether and how the boilerplate of KAMs varies with client firms' financial risk, we establish Eq. (3), where *Sim* is the dependent variable, and *FD* is the independent variable.

$$\begin{aligned} Sim_{i,t} = & \beta_0 + \beta_1 FD_{i,t} + \beta_2 DA_{i,t} + \beta_3 Switch_{i,t} + \beta_4 Mrr_{i,t} + \beta_5 ROA_{i,t} + \beta_6 Size_{i,t} \\ & + \beta_7 Lev_{i,t} + \beta_8 Big10_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

We also control for company financial characteristics and auditing firm factors associated with the boilerplate of KAMs. Following Yau (2019), we control for various firms' characteristics that may influence the boilerplate of KAMs, such as firm size (*Sizeota*), leverage (*Lev*), and profitability (*ROA*). Zeng et al. (2021) find that accounting quality increases with the boilerplate of KAMs, and auditors are more likely to issue an unqualified opinion given a higher boilerplate. Therefore, we also control for accounting quality (*DA*, the absolute value of discretionary accruals measured using the modified Jones model). Large-scale auditing firms have more standard auditing processes than low-scale auditing firms. Thus, audit reports issued by larger auditing firms, such as Big10 audit firms, have a higher boilerplate of KAMs (Johnston and Zhang, 2021). Therefore, we control for whether the auditor is an auditor of Big10 audit firms (*Big10*). Yau (2019) holds that the boilerplate of KAMs results from the internal template of auditing firms, and KAMs are the increased boilerplate for a stable client-auditor relationship. Therefore, we control for auditors' change by including an indicator variable that equals 1 if the auditors have changed from the prior year and 0 otherwise (*Switch*). As Pinto and Morais (2019) argue that client pressure will influence auditors' KAM disclosures, *Mrr*, the proxy for executives' shareholding, is also controlled. Appendix B contains the variable definitions.

To test H2, we partition our sample into groups based on the legal environment of client firms' registered provinces. We use China's legal environment index (Fan et al., 2010) to measure client firms' legal environment. Fan et al. (2010) initiate the legal environment index of China based on the evaluation of four factors in every region in China. The four factors include the development of the intermediary organization, consumer protection, intellectual property protection, and manufacturer protection. The higher legal environment index indicates a more developed legal environment and a higher probability of litigation risk. Then, we partition our

Table 2

Descriptive statistic.

Panel A: Descriptive statistics of the continuous variables						
Variables	Observations	Mean	Min	Max	Median	Standard deviation
<i>Sim</i>	11,750	0.256	0.118	0.324	0.262	0.036
<i>FD</i>	11,750	4.043	0.178	31.74	2.651	4.300
<i>DA</i>	11,750	0.048	0.000	0.376	0.033	0.049
<i>Switch</i>	11,750	0.586	0.000	1.000	1.000	0.492
<i>Mrr</i>	11,750	0.042	0.000	0.643	0.000	0.097
<i>ROA</i>	11,750	0.041	-9.116	4.488	0.042	0.129
<i>Size</i>	11,750	22.754	18.47	28.636	22.563	1.449
<i>Lev</i>	11,750	0.578	0.015	3.033	0.498	0.465
<i>Big10</i>	11,750	0.574	0.000	1.000	1.000	0.495

Panel B: Descriptive statistics for different types of KAMs						
Textual similarity						
Category	Account related to KAMs	Observations	Min	Max	Mean	
Profitability	Revenue recognition	3538	0.168	0.373	0.309	
Liquidity	Inventory	1352	0.031	0.382	0.326	
	Cash and accounts receivable	2159	0.100	0.401	0.332	
Solvency	Investment and related impairment	1414	0.239	0.381	0.329	
	Long-term assets impairment	1007	0.129	0.330	0.278	

This table presents the descriptive statistics for dependent and independent variables. The dependent variable *Sim* is the proxy for the textual similarity, measured using the average of LVD between the KAMs of a firm and any other firm in the same industry. Panel A presents the number of observations, means, and standard deviations of our sample's continuous variables. Panel B shows the descriptive statistics of textual similarity for different types of KAMs.

sample into sub-samples with stronger (weaker) legal environments if the legal environment index is above (below) its median and re-estimate Eq. (3) separately for each group. A stronger association between *Sim* and *FD* for the observations with the stronger legal environment indicates that when client firms' financial risk is higher, auditors will reduce textual similarity to mitigate litigation risk (Disclaimer effect theory). On the contrary, less supervised and regulated client firms coupled with higher financial risk are more likely to increase the audit risk assessment, which compels auditors to reduce the textual similarity of KAMs (Cost-efficient hypothesis).

To test H3, we partition our sample into groups with Big10 audit firms and non-Big10 audit firms. Then, we re-estimate Eq. (3) separately for each group. If the financial risk is more strongly related to the textual similarity of KAMs issued by Big10 audit firms, the cost-efficiency hypothesis is validated. On the contrary, if the financial risk is more strongly related to the textual similarity of KAMs issued by non-Big10 audit firms, the disclaimer effect hypothesis is validated.

5. Data analysis

5.1. Descriptive statistic

Panel A of Table 2 describes all the continuous characteristic variables in our study. The mean of *Sim* is 0.256, which suggests that, on average, the textual similarity of KAMs is as high as 25.6%. The maximum of *Sim* is 0.324, meaning that there is a firm, of which the KAMs' wordings are 32.4% similar to those of other firms. Consistent with the findings of Zeng et al. (2021), the boilerplate of KAM disclosures is not overwhelmed in China. According to Altman (1968), the financial situation is unstable, and firms are subject to bankruptcy if *FD* is below 2.675. According to Panel A of Table 2, the median of *FD* is 2.651, indicating that at least 50% of the firms in our sample are with low financial risk.

Panel B of Table 2 displays the descriptive statistics for the textual similarity of different types of KAMs. From 2017–2020, auditors of 3538 firm-year observations disclosed KAMs related to revenue recognition, 1352 about the inventory, 2159 related to cash and accounts receivable, 1414 related to investment, and 1007 related to long-term assets impairment. The KAMs related to cash and accounts receivable have the highest mean textual similarity, with a maximum of approximately 0.401. The five types of KAMs are the matters that are disclosed most as KAMs by auditors, which accounts for 80.6 percent altogether. Referring to Camacho-Miñano et al. (2021), we categorize these five individual KAMs into matters that potentially affect firms' profitability, liquidity, and solvency. They are useful ratios to predict firms' financial risk.

Table 3 presents the Pearson correlation coefficients of the variables. The matrix shows that the highest coefficient is between *Size* and *Lev* below 0.5. We calculate variance inflation factors for each regression. The results are all lower than 10, indicating no effect of multicollinearity.

5.2. Empirical results

Table 4 shows the results of estimating Eq. (3). Column (1) presents the results for the full sample. The coefficient of *FD* is positive and significant, indicating that, all else equal, auditors of firms with higher financial risk disclose less boilerplate of KAMs. This result supports H1. The negative and significant coefficient of *DA* indicates that auditors of client firms with lower accounting quality are more likely to report less boilerplate of KAMs. The executives' shareholding and return on total assets are positively related to the textual similarity of KAMs. The coefficient of *Size* is negative and significant. The results for these control variables are consistent with existing studies (Pinto and Morais, 2019; Yau, 2019; Zeng et al., 2021).

Columns (2) and (3) of Table 4 show the results for the sub-sample with the different legal environments. The coefficient of *FD* is again significantly positive for the sub-sample with the weaker legal environment. However, it is insignificant for the sub-sample with the stronger legal environment, which suggests that the association between financial risk and textual similarity of KAMs is only significant for the less regulated firms. This result provides support for H2(a).

We next investigate whether the effect of client firms' financial risk on the textual similarity of KAMs varies depending on the market shares of audit firms. These results are reported in Columns (4) and (5) of Table 4. Column (4) reports the results for the sub-sample with Big10 audit firms. The coefficient of *FD* is 0.001, significantly at the 1 percent level. Column (5) reports the results for the sub-sample with non-Big10 audit firms. The coefficient of *FD* is statistically insignificant. These results suggest that the negative

Table 3
Correlation coefficient matrix.

Variables	<i>Sim</i>	<i>FD</i>	<i>DA</i>	<i>Switch</i>	<i>Mrr</i>	<i>ROA</i>	<i>Size</i>	<i>Lev</i>	<i>Big10</i>
<i>Sim</i>	1.000								
<i>FD</i>	0.063***	1.000							
<i>DA</i>	-0.029***	-0.100***	1.000						
<i>Switch</i>	0.017**	0.018**	-0.002	1.000					
<i>Mrr</i>	0.069***	0.271***	0.006	0.026***	1.000				
<i>ROA</i>	0.035***	0.363***	-0.278***	0.041***	0.126***	1.000			
<i>Size</i>	-0.045***	-0.307***	-0.073***	0.013	-0.359***	0.029***	1.000		
<i>Lev</i>	-0.046***	-0.761***	0.066***	-0.009	-0.280***	-0.229***	0.496***	1.000	
<i>Big10</i>	0.017**	0.038***	-0.050***	0.008	0.016*	0.065***	0.069***	-0.025***	1.000

*, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

Table 4

Financial risk and textual similarity of KAMs.

Variables	(1) Full sample	(2) Weaker legal environment	(3) Stronger legal environment	(4) Big10	(5) Non-Big10
FD	0.001** (2.31)	0.001*** (2.76)	0.000 (0.87)	0.001*** (3.03)	0.000 (1.13)
DA	-0.024*** (-3.44)	-0.021** (-2.15)	-0.022** (-2.30)	-0.040*** (-5.06)	-0.020*** (-2.70)
Switch	0.001* (1.94)	0.001 (1.64)	0.000 (0.38)	0.003*** (4.04)	0.001 (0.85)
Mrr	0.004** (2.02)	0.004 (1.31)	0.002 (0.67)	0.005** (2.25)	0.002 (1.21)
ROA	0.016*** (3.69)	0.009 (1.46)	0.025*** (4.20)	0.002 (0.28)	0.026*** (4.61)
Size	-0.001** (-2.07)	-0.001 (-1.28)	-0.001** (-2.35)	0.001*** (2.92)	-0.002*** (-7.93)
Lev	0.002 (0.77)	0.003 (0.89)	0.003 (0.73)	0.001 (0.23)	0.004 (1.50)
Big10	0.000 (0.37)	-0.001* (-1.71)	0.001* (1.68)	-	-
<i>Industry FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	11,750	6028	5722	6932	4818
<i>R_{square}</i>	0.102	0.107	0.092	0.111	0.120

This table presents the empirical results for our primary test. Column (1) reports the results of H1, which tests whether clients' financial risk influences the boilerplate KAMs. Columns (2) and (3) show whether the legal environment influences the association between financial risk and boilerplate KAMs. Columns (4) and (5) show the results for Eq. (3) for the sub-sample with different levels of accounting quality. *FD* is the proxy for financial risk, according to Altman (1968). Other control variables are defined in Appendix B. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses. *, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

association between textual similarity of KAMs and client firms' financial risk is mainly attributed to audit firms with larger market shares, supporting H3(a).

6. Robust test

6.1. Alternative measures of KAM's textual similarity

Yau (2019) finds that auditors follow industry audit experts' wordings in KAM disclosures to improve audit quality. Therefore, KAMs disclosed by the same audit firm are highly boilerplate. On this basis, we recalculate the boilerplate by measuring the average of LVD between the KAMs of one client firm and another audited by the same audit firm and re-estimate Eq. (3). The untabulated results show that the coefficient of *FD* is only significant and positive for full sample, sub-sample with the weaker legal environment, and sub-sample with clients audited by Big10 audit firms. Therefore, our findings do not vary with the alternative measures of KAM's textual similarity.

6.2. Alternative measures of financial risk

To assess the robustness of our results, we use *FDdum* as an alternative measure of financial risk. Altman's Z-Score categorizes firms with a Z-Score above 2.617 as free of financial risk (i.e., absent financial risk) and serious financial risk with a Z-Score below 1.81. Therefore, *FDdum* equals 1 if the firm's Z-Score is above 2.617, equals -1 if the Z-Score is below 1.81, and 0 otherwise. The untabulated results show a significantly positive relation between *FDdum* and *Sim*. The coefficients of *FDdum* are positive for the sub-samples with the weaker legal environment and clients audited by Big10 audit firms. These findings above keep our previous conclusions unchanged.

Additionally, we utilize the Expected Default Frequency (*EDF*) calculated using the KMV model to replace *FD* and re-estimate Eq. (3). Compared with Altman's Z-score, *EDF*, using the market indicator to calculate financial risk, is more predictive and less affected by the accounting quality.

(1) We use Eq. (4) to calculate the financial risk distance (*DD*).

$$DD = \frac{\ln\left(\frac{V}{F}\right) + \left(\mu - 1\right)/2\sigma_V^2}{\sigma_V\sqrt{T}} \quad (4)$$

In Eq. (4), *V* is the firms' market value. μ is the annual return rate of individual stocks in the previous year. σ_V is the volatility of

firms' market value. V equals the sum of E and F , where E is the annual current market value of individual stocks and F is the sum of current liabilities and half of non-current liabilities. T is set to 1.

(2) We confirm the mapping between DD and EDF . Assuming that the market value of a company's assets follows a normal distribution, then the default distance reflects the standard deviation of the company's distance from default, and EDF is calculated using Eq. (5).

$$EDF = N(-DD) \quad (5)$$

A higher EDF indicates a higher financial risk. The untabulated results show that using EDF to test our main hypotheses does not alter our previous conclusions.

6.3. Alternative measures of audit firms' size

We directly measure the market shares of audit firms using the assets of clients of the respective auditing firms divided by the total assets of the listed companies. Then, we partition our sample into groups with larger and smaller market shares based on their industrial median. The untabulated results are consistent with our main hypotheses.

6.4. Drop the sample of 2020

On December 28, 2019, the China National People's Congress deliberated and approved the new revised Securities Law. The revised Securities Law came into effect in March 2020. A critical revision to the Securities Law is to manifest further the joint liability of intermediary organizations, including auditors, to improve their function as the "watchdog" for the securities market. Moreover, according to the revised Securities Law, the penalties for auditors' negligence have been significantly increased. After 2020, the legal environment of the capital market will be improved, and auditors will be more sensitive to audit risks. The 2020 sample may not be representative. Therefore, we drop the sample of 2020 and re-estimate Eq. (3). The untabulated results are consistent with our previous findings.

6.5. Control the audit firm fixed effect

Audit firm characteristics can be associated with the wording of KAMs. Therefore, we include the audit firm fixed effect in Eq. (3) to control for the variation in the boilerplate of KAMs across audit firms. The untabulated results show that our main findings remain qualitatively unchanged after controlling the audit firm fixed effect.

Table 5
PSM test.

Variables	(1) Full sample	(2) Weaker legal environment	(3) Stronger legal environment	(4) Big10	(5) Non-Big10
FD	0.003*** (3.14)	0.005*** (3.32)	0.001 (1.02)	0.005*** (5.67)	0.003*** (3.74)
DA	-0.015 (-0.89)	-0.031 (-1.22)	0.023 (1.15)	-0.055*** (-4.31)	-0.011 (-0.86)
Switch	-0.000 (-0.17)	0.001 (0.59)	-0.002 (-0.87)	0.002 (1.48)	0.000 (0.19)
Mrr	0.008 (1.53)	0.010 (1.12)	0.003 (0.50)	0.012*** (3.02)	0.008** (2.17)
ROA	0.019 (1.31)	-0.009 (-0.36)	0.033** (2.01)	-0.008 (-0.59)	0.025** (1.97)
Size	0.000 (0.19)	0.001 (0.53)	-0.000 (-0.15)	0.001 (0.92)	-0.003*** (-5.08)
Lev	0.004 (0.55)	-0.006 (-0.55)	0.009 (1.07)	0.012** (2.29)	0.011** (2.27)
Big10	0.001 (0.78)	0.002 (0.71)	-0.000 (-0.19)	-	-
Chi-test	-	-	-	<i>Chi</i> ² =4.54 <i>P</i> =0.03	
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2066	1003	1063	1156	910
R_square	0.085	0.048	0.028	0.053	0.042

This table presents the empirical results of PSM. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses.

*, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

6.6. Endogenous issue

An alternative explanation for our primary results is that audit firms inclined to disclose the boilerplate of KAMs will preclude the firms with increased financial risk. Therefore, the issue of selection bias may affect the accuracy of our results. We use the propensity score matching (PSM) model to solve the selection bias issue. We divided our sample into sub-samples with a higher level (Z-Score is lower than 1.81) and a lower level (Z-Score is higher than 1.81) of financial risk. We use all control variables in Eq. (3) to determine the propensity score. Our matching process is performed without replacement and within a caliper of one percent. The procedure ensures that one firm-year observation under higher financial risk is paired with one observation under lower financial risk. With this sub-sample, the coefficient of *FD* (in Table 5) is positive and significant at the 0.01 level. We continue to find support for H1 using the PSM model. Hence, our primary results are not sensitive to the selection bias issue.

There is another explanation for our primary results: auditors are willing to convey information about client firms' financial risk to help investors' decision-making because the investors, subjected to substantial losses, will sue the auditors, thereby increasing the litigation cost of audit firms (Chan and Liu, 2023). We use two methods to mitigate the reverse causality problem.

Firstly, we perform the 2SLS regression analysis using the age of the firms (*Firmage*) as the instrumental variable for firms' financial risk. The longer the company has been in existence, the lower the possibility of financial risk, but it is not directly associated with the boilerplate of KAMs.

Column (1) of Table 6 presents the results of the first stage regression, where the dependent variable is *FD*. *Firmage* is significantly and positively related to *FD*. Moreover, the F-statistics of first-stage regression exceed 10, meaning that *Firmage* is not a weak instrumental variable. Column (2) of Table 6 shows the results of the second-stage regression, where the dependent variable is *Sim*. The coefficient of *FD* is still significantly positive, which does not alter our previous conclusions.

Secondly, we lag the independent variables by one year with respect to the dependent variable to mitigate the reverse causality problem. The results in Column (3) of Table 6 reveal that our conclusions continue to hold.

7. Additional analysis

7.1. The effect of audit efforts

As discussed in H1, decreased boilerplate of KAMs may result from auditors' increased audit efforts to review firms with financial risk more thoroughly (Nelson et al., 1988). Another explanation for our results is that auditors regard differentiated KAMs as

Table 6
2SLS regression and one-phase lagged test.

Variables	(1) <i>FD</i>	(2) <i>Sim</i>	(3) <i>Sim</i>
<i>Firmage</i>	0.003** (2.14)		
<i>FD</i>		0.128** (2.08)	
<i>Sim_{t-1}</i>			0.541*** (48.43)
<i>FD_{t-1}</i>			0.001** (2.16)
<i>DA</i>	0.019 (0.12)	-0.018 (-0.86)	-0.003 (-0.61)
<i>Switch</i>	-0.002 (-0.16)	0.002 (0.93)	0.001* (1.65)
<i>Mrr</i>	0.552*** (10.19)	-0.071* (-1.89)	0.002 (0.91)
<i>ROA</i>	2.055*** (32.64)	-0.257** (-2.01)	0.015*** (3.03)
<i>Size</i>	0.092*** (12.02)	-0.011** (-2.05)	0.000 (0.50)
<i>Lev</i>	-5.569*** (-113.08)	0.711** (2.06)	0.002 (0.75)
<i>Big10</i>	0.018 (1.14)	-0.002 (-0.75)	0.000 (0.17)
<i>Industry FE</i>	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes
<i>Observations</i>	11,750	11,750	8695
<i>R_{square}</i>	0.676	0.146	0.356

This table shows the results of the 2SLS regression analysis and one-phase lagged test. The dependent variables in Columns (1) and (2) are *FD* and *Sim* in year *t*, respectively. The independent variable in Column (3) is *FD* in year *t-1*. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses.

*, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

disclaimers. Instead of conducting more audit efforts, auditors of firms with high financial risk only reduce boilerplate in KAM disclosures to legitimate their judgment on clients' accounting behavior. This section tests whether the differentiated KAMs capture more audit efforts or just a disclaimer.

Following Lobo and Zhao (2013), we construct Eq. (6) and estimate abnormal audit fees as a proxy for audit efforts. The dependent variable (*LNFee*) is the natural logarithm of total audit fees. We control client firms' size (*Size*), as auditors charge more for larger clients. We also control the factors related to auditors' risk premium, namely the proportion of inventory and accounts receivable (*ARINV*), current ratio (*CR*), and firms' profitability (*ROA* and *LOSS*). As firms' complexity affects audit fees, we also control client firms' complexity proxies, such as the audit delay (*Delay*) and the arithmetic square root of employees' number (*Employ*). *Big10* and *Switch* are introduced to Eq. (6) to control the premium for auditors' expertise and experience (See Appendix B for the definition of control variables). The residual of Eq. (6) is our proxy for audit efforts (*Effort*). In Column (1) of Table 7, the dependent variable is *Effort*. The coefficient of *FD* is significantly negative, indicating that auditors will make more efforts to review firms with high financial risk, which is consistent with Nelson et al. (1988). Then, we introduce the interaction item *Effort* × *FD* into Eq. (3), of which the results are shown in Column (2) of Table 7. The coefficient of *Effort* × *FD* is significantly positive, indicating that client firms' financial risk compels auditors to conduct more audit efforts, which reduces the textual similarity of KAMs.

$$\begin{aligned} \text{LNFee}_{i,t} = & \beta_0 + \beta_1 \text{Size}_{i,t} + \beta_2 \text{ARINV}_{i,t} + \beta_3 \text{CR}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{Lev}_{i,t} + \beta_6 \text{LOSS}_{i,t} \\ & + \beta_7 \text{Employ}_{i,t} + \beta_8 \text{Big10}_{i,t} + \beta_9 \text{Switch}_{i,t} + \beta_{10} \text{Delay}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (6)$$

7.2. The effect of client pressure

Auditors intend to maintain client relationships (Czerny et al., 2014). Prior literature proved that auditors with higher client pressure can conform more strongly to clients' preferences (Brownstein, 2003; Kunda, 1990). Based on CSACPA 1504, KAMs should be selected from matters communicated with those charged with governance. One of the crucial aspects the auditors must communicate in the initial stages includes the significant risks involved. Moreover, auditors must communicate with the audit committee multiple times yearly. When the engagement is substantially completed, auditors must communicate significant findings about high-level risks and how they are disclosed as KAMs (Minutti-Meza, 2021). Therefore, if client pressure is higher, auditors' KAM disclosures may be significantly affected by client firms. As financial risk decreases share price and increases capital cost, firms are reluctant to disseminate information signaling the financial risk. Firms may limit the differentiated KAM disclosures during communication with auditors. Therefore, higher client pressure may inhibit the personalized KAM disclosures when financial risk is higher.

Table 7
The effect of audit efforts.

Variables	(1) <i>Effort</i>	(2) <i>Sim</i>
<i>FD</i>	-0.008* (-1.73)	0.001*** (2.79)
<i>Effort</i>		-0.002 (-1.47)
<i>Effort</i> × <i>FD</i>		0.001** (2.11)
<i>DA</i>	0.110 (1.27)	-0.025*** (-3.52)
<i>Switch</i>	0.002 (0.34)	0.001** (1.98)
<i>Mrr</i>	-0.015 (-0.64)	0.005** (2.39)
<i>ROA</i>	-0.149*** (-2.74)	0.016*** (3.51)
<i>Size</i>	0.015*** (4.05)	-0.001** (-2.19)
<i>Lev</i>	-0.093*** (-2.80)	0.003 (1.06)
<i>Big10</i>	-0.004 (-0.62)	0.000 (0.15)
<i>Industry FE</i>	Yes	Yes
<i>Year FE</i>	Yes	Yes
<i>Observations</i>	11,610	11,610
<i>R_square</i>	0.035	0.103

This table presents the empirical results for testing the effect of audit efforts. The dependent variables in Columns (1) and (2) are the proxies for audit efforts and KAM's textual similarity, respectively. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses. *, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

To test how client pressure affects KAM disclosures, we introduce the interaction item $Pressure \times FD$ into Eq. (3). $Pressure$ is a proxy for the client's pressure. Reynolds and Francis (2001) proved that auditors are more likely to compromise with large clients to retain valuable customers. Therefore, we measured $Pressure$ as the total assets of the client divided by the total clients' assets of the respective audit firm. The results are shown in Table 8. In Column (1), the coefficient of $Pressure \times FD$ is significantly negative, indicating that higher client pressure mitigates the influence of firms' financial risk on differentiated KAM disclosures. Then, we partition our subsample with the weaker legal environment into two groups based on the size of audit firms, of which the results are shown in Columns (2) and (3), respectively. Only in Columns (1) and (2), the coefficients of $Pressure \times FD$ are significantly negative, suggesting that client pressure will inhibit the effect of firms' financial risk on differentiated KAM disclosures only when the legal environment is inferior and the audit firms have lower market shares. A potential explanation is that the weaker legal environment reduces the litigation threat for firms to cover financial risk. Furthermore, when the market shares of audit firms are lower, firms are more likely to prevent auditors from disclosing detailed information.

7.3. Types of KAMs

In this part, we focus on the effect of client firms' financial risk on specific types of KAMs. In our sample, the KAMs related to expense recognition, revenue recognition, inventory, cash and accounts receivable, and long-term assets impairment are the most disclosed matters by auditors, accounting for 80.6 percent altogether. According to Camacho-Miñano et al. (2021), these five categories could be categorized into matters that potentially affect firms' profitability, liquidity, and solvency. Therefore, we categorize the KAMs based on whether their main impact is on firms' profitability, liquidity, or solvency.

We then recalculate the textual similarity of KAMs at the account level to examine which types of KAMs auditors will opt to reduce the boilerplate when clients are exposed to a high level of financial risk, of which the results are shown in Table 9. The coefficients of FD are all positively significant for the KAMs related to profitability but are insignificant for the matters related to firms' liquidity and solvency. Prior studies have found that the measures of profitability outweigh other measures in predicting firms' financial risk (Altman et al., 2017; Lukason and Laitinen, 2019), which is consistent with our findings.

8. Conclusion

This study investigates whether textual similarity is associated with financial risk. We focus our examination on firms listed in China's A Stock Market. We find that auditors of firms with a higher level of financial risk use more differentiated wordings in KAM disclosures. The negative association between client financial risk and textual similarity of KAMs is mainly attributed to the firms in the

Table 8
The effect of client pressure.

Variables	(1) Full sample	(2)	(3)
		Weaker legal environment	Big10
<i>FD</i>	0.001** (2.31)	0.002** (2.39)	0.002** (2.54)
<i>Pressure</i>	-0.003 (-0.14)	0.098*** (6.06)	0.116*** (3.55)
<i>Pressure</i> × <i>FD</i>	-0.023** (-1.99)	-0.010*** (-4.47)	0.001 (0.06)
<i>DA</i>	-0.024*** (-3.29)	-0.018* (-1.79)	-0.023* (-1.87)
<i>Switch</i>	0.001* (1.68)	-0.000 (-0.38)	0.002* (1.84)
<i>Mrr</i>	0.004* (1.87)	0.003 (1.21)	0.010*** (3.26)
<i>ROA</i>	0.016*** (3.46)	0.021** (2.57)	-0.018** (-1.99)
<i>Size</i>	-0.000 (-1.04)	-0.002*** (-3.78)	0.001 (1.49)
<i>Lev</i>	0.002 (0.56)	0.008* (1.82)	0.000 (0.05)
<i>Big10</i>	-0.000 (-0.58)	-	-
<i>Industry FE</i>	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes
<i>Observations</i>	11,750	4021	2007
<i>R_{square}</i>	0.122	0.166	0.170

This table presents the empirical results for testing the effect of client pressure. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses.

*, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

Table 9
Types of KAMs.

Variables	(1) Revenue recognition	(2) Long-term assets impairment	(3) Investment and related impairment	(4) Inventory	(5) Cash and accounts receivable
FD	0.001*** (2.80)	-0.002 (-1.62)	0.000 (0.50)	0.001 (1.32)	-0.001 (-1.44)
DA	-0.037*** (-4.31)	-0.009 (-0.35)	-0.049** (-3.49)	-0.002 (-0.12)	-0.014 (-1.02)
Switch	-0.001 (-0.94)	0.000 (0.03)	0.000 (0.17)	0.003** (2.11)	0.000 (0.22)
Mrr	-0.001 (-0.57)	0.006 (0.62)	0.003 (0.66)	0.002 (0.51)	0.003 (0.90)
ROA	-0.014** (-2.24)	0.026* (1.93)	0.008 (0.95)	-0.006 (-0.56)	0.033*** (3.70)
Size	-0.002*** (-4.59)	-0.002* (-1.88)	-0.002** (-2.36)	0.000 (0.43)	-0.004*** (-6.36)
Lev	-0.000 (-0.01)	-0.015* (-1.70)	0.003 (0.50)	-0.009 (-1.34)	-0.009* (-1.73)
Big10	0.003*** (3.85)	0.004 (1.64)	0.003** (2.02)	0.003** (1.98)	0.000 (0.14)
<i>Industry FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Year FE</i>	Yes	Yes	Yes	Yes	Yes
<i>Observations</i>	3538	1352	2159	1414	1007
<i>R_square</i>	0.183	0.153	0.120	0.184	0.098

This table presents the empirical results for Eq. (3), which substitutes the independent variable with the textual similarity of different types of KAMs. The industry fixed effect and year fixed effect are included. The variables of our interests are presented in bold. T-statistics calculated using standard errors clustered by firm and year are reported in parentheses.

*, **, and *** denote 10 percent, 5 percent, and 1 percent significance levels, respectively.

weaker legal environment or audited by Big10 audit firms. We also find that the negative association between firms' financial risk and textual similarity of KAMs is greater for auditors exposed to lower client pressure, which indicates that firms with financial risk are reluctant to be different on KAM disclosures. Subject to higher client pressure, auditors of firms with higher financial risk are less motivated to reduce textual similarity of KAMs, especially when the auditors are motivated to keep an amiable relationship with customers and a weaker legal environment provides an opportunity for fraud.

Moreover, if clients' financial risk is high, auditors are more likely to reduce the textual similarity of KAMs related to profitability. Our findings imply that clients' financial risk increases auditors' risk assessment. A higher assessment of audit risk compels auditors to conduct more specific procedures, which will be reflected in KAMs and decrease the textual similarity of KAMs.

Prior studies based on the developed market held that auditors are likely to use standardized wordings in KAM disclosures to avoid the dissemination of clients' sensitive information or reduce litigation costs (Brasel et al., 2016; Kachelmeier et al., 2020; Minutti-Meza, 2021; Yau, 2019). Studies also find that KAM disclosures are not an overwhelming boilerplate but contain risk-related information (Seebek and Kaya, 2023; Zeng et al., 2021). It is unclear from these studies what affects auditors to change the boilerplate of KAMs. We contribute to the literature by investigating the motivation of auditors to reduce the textual similarity of KAMs in the setting of China's capital market.

Our findings prove that auditors' assessment of audit risk will affect auditors' behaviors in KAM disclosures. This finding also has implications for standard-setters, as it validates the effectiveness of KAMs in China. Our findings indicate that KAMs are not always boilerplate but also provide risk-related information. Our paper also adds to the literature on the textual similarity of KAMs and auditors' behavior.

This paper is subject to several limitations. First, due to the lack of audit hour data, we fail to link the differentiated KAM disclosures directly to the audit efforts. Second, our study focuses only on the motivation of auditors to differentiate KAMs. Further investigations on whether the differentiated KAMs are informative to investors will be significant in understanding the effectiveness of the expanded audit reporting model.

Ethical approval

This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent

Informed consent was obtained from all individual participants included in the study.

Funding

This paper was supported by the National Natural Science Foundation of China (No. 72032007, 71972159).

CRediT authorship contribution statement

Lin Zhang: Validation, Investigation, Formal analysis. **Qianqun Ma:** Writing – original draft, Validation, Software, Methodology, Investigation, Data curation. **Chong Wu:** Methodology, Resources, Software. **Qi Wang:** Writing – original draft, Resources, Funding acquisition.

Conflict of Interest

We declare that we have no conflict of interest.

Data Availability

The data that has been used is confidential.

Appendix A. Sample of KAMs with different levels of boilerplate

Stock code : 600273	
Description	Resolution
As of December 31, 2020, the book value of goodwill in the consolidated statement of the Company was RMB 485,714,229.11 yuan. The managers conduct impairment tests on goodwill at the end of each year and adjust the book value of goodwill according to the results of impairment tests. As the evaluation process of the management's goodwill impairment tests is complex and requires a high degree of judgment, the impairment evaluation involves determining evaluation parameters such as discount rate and assumptions about the operational and financial conditions in the subsequent periods, including sales growth rate and gross profit margin. Because the book value of goodwill is large and has a significant impact on the financial statements, we list goodwill impairment as a KAM.	<p>The main audit procedures we performed are as follows.</p> <ol style="list-style-type: none"> (1) Check the managers' resolutions, equity acquisition agreements, asset appraisal reports, and relevant performance commitments related to the generation of goodwill and identify the impact of acquisition conditions, business completion dates, performance commitments, and forecasts on the formation and value of goodwill. (2) Understand and evaluate the goodwill impairment test policies and methods adopted by the managers and evaluate the valuation model adopted by managers. (3) Based on our understanding of the industry, analyze and review the reasonability of the major estimates and judgments used by managers in the impairment test to estimate the present value of future cash flows. (4) Analyze and review the discount rate used by managers in the impairment test. (5) Compare the difference between the carrying value of the asset group to which goodwill belongs and its recoverable amount to confirm whether there is goodwill impairment.
Stock code : 600654	
Description	Resolution
As of December 31, 2020, the original book value of goodwill of the company was RMB 182,050,800 yuan, the goodwill impairment reserve was RMB 910,808,600 yuan, and the net goodwill was RMB 90,9701,200 yuan, accounting for 19.65% of the total assets. The goodwill of the company mainly comes from the acquisition of Weian Co., LTD., Australia Security Group, and Zhejiang Huahua Wanrun Information Technology Co., LTD. The manager conducts the impairment test of goodwill at the end of each year and adjusts the book value of goodwill according to the results of the impairment test. The results of the goodwill impairment test largely depend on the estimation and assumptions adopted by the management, especially the revenue, gross margin, operating expense, discount rate, and other major judgments during the forecast period of the relevant asset group. Such estimations have significant uncertainties and are affected by the managers' judgment of the future market and economic environment. The adoption of different estimations and assumptions will have a great impact on the recoverable value of the assessed goodwill. As goodwill has a significant impact on financial statements and goodwill impairment depends on the managers' significant accounting estimations and judgments, we identify it as a KAM.	<ol style="list-style-type: none"> (1) To understand and evaluate the rationality of the managers' internal control design related to the goodwill impairment test and test the effectiveness of the operation of the relevant internal control. (2) To review the managers' identification of asset groups and the apportionment method of goodwill. (3) To discuss with the managers the rationality of the methods used in the goodwill impairment test, the assumptions of key assessment, the selection of parameters, the revenue, gross margin, operating expenses, and cash flow discount rate during the forecast period. (4) To discuss with the external evaluation experts hired by the managers the rationality of the methods used in the goodwill impairment test, the assumptions of key assessment, the selection of parameters, the revenue, gross margin, operating expenses, and cash flow discount rate during the forecast period. (5) To compare the key assumptions and parameters used by the managers in the goodwill impairment test in previous years, the revenue, gross margin, operating expenses, and cash flow during the forecast period with the key assumptions and parameters used this year and the operating performance of this year, so as to evaluate the reliability and accuracy of the managers' forecast process, and ask the management for the reasons for the significant differences. (6) Evaluate the reasonableness of the key assumptions and parameters used in the goodwill impairment test in combination with industry standards, macroeconomic and industry development trends. (7) Evaluate the independence, objectivity, experience, and qualification of the external evaluation agency hired by the management of the company. (8) Hire a third-party evaluation agency to evaluate and review the goodwill

(continued on next page)

(continued)

Stock code : 600654	
Description	Resolution
	impairment test results of the management of the company and the external evaluation agency hired by the management. (9) Test whether the calculation of the net present value of future cash flows is accurate. (10) Evaluate whether the managers' disclosure of goodwill and its impairment estimations and financial statements as of December 31, 2020, is appropriate. Based on the audit work performed, we believe that the judgment made by the managers in the goodwill impairment test is reasonable.

Appendix B. Variable definitions

Variables	Description
<i>Sim</i>	The textual similarity of KAMs, measured by the average of Levenshtein Edit Distance (LVD) between the KAMs of the firm and that of other listed firms in the same industry.
<i>FD</i>	The level of financial risk measured referring to Altman's Z-Score.
<i>FDdum</i>	Equals 1 if the firm Z-Score is above 2.6, equals -1 if the Z-Score is below 1.81, and 0 otherwise.
<i>DA</i>	The absolute value of discretionary accruals using the modified Jones model.
<i>Opin</i>	An indicator variable that equals 1 for a modified audit opinion, and 0 otherwise.
<i>Switch</i>	Change in audit firm from the prior year (Equals 1 if audit firm has changed, and 0 otherwise).
<i>Mrr</i>	The proportion of executives' shareholding.
<i>Loss</i>	The indicator variable that equals 1 if the client firm's net income is negative, and 0 otherwise.
<i>ROA</i>	Return on total assets.
<i>Size</i>	The natural logarithm of total assets.
<i>Lev</i>	Total liabilities divided by total assets.
<i>Big10</i>	The indicator variable that equals 1 if the client is audited by a Big10 auditing firm, and 0 otherwise.
<i>Firmage</i>	The number of years since the firm is established.
<i>RE</i>	The retained earnings.
<i>WC</i>	The liquid asset of the firm.
<i>EBIT</i>	The earnings before interest and tax.
<i>REV</i>	Operating revenue.
<i>Pressure</i>	Client pressure, measured as the total assets of the client divided by the total clients' assets of the respective audit firm.
<i>Effort</i>	Proxy for audit efforts, measured as the abnormal audit fees using Equation (6).
<i>Employ</i>	The arithmetic square root of employee number.
<i>ARINV</i>	Inventory and accounts receivable scaled by total assets.
<i>Delay</i>	Audit delay.
<i>CR</i>	Current ratio.
<i>LNFee</i>	The natural logarithm of total audit fees.

References

- Alicke, M.D., 2000. Culpable control and the psychology of blame. *Psychol. Bull.* 126 (4), 556–574.
- Alicke, M.D., Buckingham, J., Zell, E., Davis, T., 2008. Culpable control and counterfactual reasoning in the psychology of blame. *Pers. Soc. Psychol. B.* 34 (10), 1371.
- Altman, E.I., 1968. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *J. Financ.* 23 (4), 589–609.
- Altman, E.I., Iwanicz-Drozdowska, M., Laitinen, E.K., Suvas, A., 2017. Financial distress prediction in an international context: a review and empirical analysis of Altman's Z-score model. *J. Int. Fin. Manag. Acc.* 28 (2), 131–171.
- Arikan, O., 2022. The effect of boilerplate language on nonprofessional investors' judgments. *Account. Bus. Res.* 52 (4), 417–442.
- Asbahr, K., Ruhnke, K., 2019. Real effects of reporting key audit matters on auditors' judgment and choice of action. *Int. J. Audit.* 23 (2), 165–180.
- Backof, A.G., 2015. The impact of audit evidence documentation on jurors' negligence verdicts and damage awards. *Account. Rev.* 90 (6), 2177–2204.
- Bedard, J., Gonthier-Besacier, N., Schatt, A., 2019. Consequences of expanded audit reports: evidence from the justifications of assessments in France. *Audit. -J. Pract. Th.* 38 (3), 23–45.
- Bell, T.B., Landsman, W.R., Shackelford, D.A., 2001. Auditors' perceived business risk and audit fees: analysis and evidence. *J. Account. Res.* 39 (1), 35–43.
- Bozanic, Z., Thevenot, M., 2015. Qualitative disclosure and changes in sell-side financial analysts' information environment. *Contemp. Account. Res.* 32 (4), 1616–2595.
- Brasel, K., Doxey, M.M., Grenier, J.H., Reffett, A., 2016. Risk disclosure preceding negative outcomes: the effects of reporting critical Audit matters on judgments of auditor liability. *Account. Rev.* 91 (5), 1345–1362.
- Brownstein, A.L., 2003. Biased predecision processing. *Psychol. Bull.* 129 (4), 545–568.
- Camacho-Miñano, M., Muñoz-Izquierdo, N., Pincus, M., Wellmeyer, P., 2021. Are key audit matter disclosures useful in assessing financial distress? *SSRN Electron. J.* Available at: <https://ssrn.com/abstract=3744282> (accessed 10 August 2022).
- Chan, D.K., Liu, N., 2023. The effects of critical audit matter disclosure on audit effort, investor scrutiny, and investment efficiency. *Account. Rev.* 98 (2), 97–111.
- Chan, K.H., Lin, K.Z., Mo, P.L., 2006. A political-economic analysis of auditor reporting and auditor switches. *Rev. Account. Stud.* 11 (1), 21–48.
- Christensen, B.E., Glover, S.M., Wolfe, C.J., 2014. Do critical audit matter paragraphs in the audit report change nonprofessional investors' decision to invest? *Audit. -J. Pract. Th.* 33 (4), 71–94.
- Chung, H., Sonu, C.H., Zang, Y., Choi, J.H., 2019. Opinion shopping to avoid a going concern audit opinion and subsequent audit quality. *Audit. -J. Pract. Th.* 38 (2), 101–123.

- Czerney, K., Schmidt, J.J., Thompson, A.M., 2014. Does auditor explanatory language in unqualified audit reports indicate increased financial misstatement risk? *Account. Rev.* 89 (6), 2115–2149.
- DeAngelo, L.E., 1981. Auditor independence, ‘low balling’, and disclosure regulation. *J. Account. Econ.* 3 (2), 113–127.
- Elliott, W.B., Fanning, K., Peecher, M.E., 2020. Do investors value higher financial reporting quality, and can expanded audit reports unlock this value? *Account. Rev.* 95 (2), 141–165.
- Fan, G., Wang, X., Zhu, H., 2010. NERI index of marketization of China’s provinces. National Economic Research Institute, Beijing.
- Glaum, M., Landsman, W.R., Wyrwa, S., 2018. Goodwill impairment: the effects of public enforcement and monitoring by institutional investors. *Account. Rev.* 93 (6), 149–180.
- Gong, S.X., Gul, F.A., Shan, L., 2018. Do auditors respond to media coverage? evidence from China. *Account. Horiz.* 32 (3), 169–194.
- Gutiérrez, E., Minutti-Meza, M., Tatum, K.W., Vulcheva, M., 2018. Consequences of adopting an expanded auditor’s report in the United Kingdom. *Rev. Account. Stud.* 23 (4), 1543–1587.
- Hoang, H., Phang, S.Y., 2021. How does combined assurance affect the reliability of integrated reports and investors’ judgments? *Eur. Account. Rev.* 30 (1), 175–195.
- Hofstede, G., Hofstede, G.J., Minkov, M., 2010. Cultures and organizations: Software of the mind. McGraw-Hill, New York, NY.
- Joe, J.R., 2003. Why press coverage of a client influences the audit opinion. *J. Account. Res.* 41 (1), 109–133.
- Johnston, J.A., Zhang, J.H., 2021. Auditor style and financial reporting similarity. *J. Inf. Syst.* 35 (1), 79–99.
- Kachelmeier, S.J., Rimkus, D., Schmidt, J.J., Valentine, K., 2020. The forewarning effect of critical audit matter disclosures involving measurement uncertainty. *Contemp. Account. Res.* 37 (4), 2186–2212.
- Kend, M., Nguyen, L.A., 2022. Key Audit Risks and Audit Procedures During the Initial Year of the COVID-19 Pandemic: An Analysis of Audit Reports 2019–2020. *Manag. Audit. J.* Advanced publication.
- Koone, L., Mercer, M., 2005. Using psychology theories in archival financial accounting research. *J. Account. Lit.* 1, 175–214.
- Kunda, Z., 1990. The case for motivated reasoning. *Psychol. Bull.* 108 (3), 480–498.
- Kuo, N.T., Li, S., Jin, Z., 2023. Social trust and the demand for audit quality. *Res. Int. Bus. Financ.* 65, 101931.
- Lang, M., Stice-Lawrence, L., 2015. Textual analysis and international financial reporting: large sample evidence. *J. Account. Econ.* 60 (2–3), 110–135.
- Lennox, C.S., Pittman, J.A., 2011. Voluntary audits versus mandatory audits. *Account. Rev.* 86 (5), 1655–1678.
- Lobo, G.J., Zhao, Y., 2013. Relation between audit effort and financial report misstatements: evidence from quarterly and annual restatements. *Account. Rev.* 88 (4), 1385–1412.
- Lukason, O., Laitinen, E.K., 2019. Firm failure processes and components of failure risk: an analysis of European bankrupt firms. *J. Bus. Res.* 98, 380–390.
- Ma, Q., Zhou, J., Wang, Q., 2023. Disclaimer effect of key audit matters in China: negative press coverage and boilerplate. *Manag. Audit. J.* 38 (4), 354–388.
- Minutti-Meza, M., 2021. The art of conversation: the expanded audit report. *Account. Bus. Res.* 51 (5), 548–581.
- Moroney, R., Phang, S.Y., Xiao, X., 2021. When do investors value key audit matters? *Eur. Account. Rev.* 30 (1), 63–82.
- Mutchler, J.F., Hopwood, W., McKeown, J.M., 1997. The influence of contrary information and mitigating factors on audit opinion decisions on bankrupt companies. *J. Account. Res.* 35 (2), 295–310.
- Nelson, J., Ronen, J., White, L., 1988. Legal liabilities and the market for auditing services. *J. Account. Audit. Fina.* 3 (3), 255–285.
- Nelson, K.K., Pritchard, A.C., 2016. Carrot or stick? the shift from voluntary to mandatory disclosure of risk factors. *J. Empir. Leg. Stud.* 13 (2), 266–297.
- Pinto, I., Morais, A.I., 2019. What matters in disclosures of key audit matters: evidence from Europe. *J. Int. Fin. Manag. Acc.* 30 (2), 145–162.
- Seebeck, A., Kaya, D., 2023. The power of words: an empirical analysis of the communicative value of extended auditor reports. *Eur. Account. Rev.* 32 (5), 1185–1215.
- Sierra-García, L., Gambetta, N., García-Benau, M.A., Orta-Pérez, M., 2019. Understanding the determinants of the magnitude of entity-level risk and account-level risk key audit matters: the case of the United Kingdom. *Brit. Account. Rev.* 51 (3), 227–240.
- Sirois, L., Bédard, J., Bera, P., 2018. The informational value of key audit matters in the auditor’s report: evidence from an eye-tracking study. *Account. Horiz.* 32 (2), 141–162.
- Skinner, D.J., 1994. Why firms voluntarily disclose bad news. *J. Account. Res.* 32 (1), 38–60.
- Yau, L.N.B., 2019. Learning from expert: A textual similarity and topic study of expanded auditor’s report in the United Kingdom (Master’s thesis). The Chinese University of Hong Kong, Hong Kong.
- Yuan, S., Lan, H., Seufert, J.H., 2020. FRC intervention, financial reporting quality and due diligence. *Res. Int. Bus. Financ.* 52, 101128.
- Zeng, Y., Zhang, J.H., Zhang, J., Zhang, M., 2021. Key audit matters reports in China: Their descriptions and implications of audit quality. *Account. Horiz.* 35 (2), 162–192.