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Voluntary resignation of independent directors and auditor responses: Empirical evidence from Chinese A-share listed firms

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ABSTRACT

We examine auditor responses to the voluntary resignation of independent directors. We show that auditors respond by increasing audit fees or rescinding engagement with their clients, but not by increasing their audit effort. Mechanism tests reveal that independent directors' voluntary resignation leads to increased regulatory sanctions and negative media coverage, these relationships are more pronounced after the New Securities Law. Auditor response strategies follow an order of priority: at an acceptable level of perceived risk, auditors increase audit fees; when perceived risk exceeds this level, auditors will discontinue the client relationship. Auditors associate greater risk with firms that have (vs. have not) experienced consecutive voluntary resignations by independent directors. Mandatory resignation has no such effect.

1. Introduction

The board of directors plays a crucial role in corporate governance. The proportion of independent directors on the board is an important metric of the effectiveness of board supervision, which is emphasized by regulatory authorities (Zhu et al., 2016). The independent director system was initially established to mitigate agency problems between shareholders and management (Fama and Jensen, 1983; Dai et al.,

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2014). Independent directors also supervise, advise and provide support in the form of resources for listed companies (Fama and Jensen, 1983; Liu et al., 2018; Zhou et al., 2021). What signals are sent by the voluntary resignation events of independent directors? Can auditors identify the risks involved? How do auditors respond? We explore this series of questions.

Typically, the resignation events of independent directors are categorized as mandatory or voluntary. Mandatory resignation occurs when independent directors are required to step down from their roles under regulatory pressure; voluntary resignation occurs when independent directors proactively relinquish their positions, judging that the benefits of those positions do not compensate for the risks incurred. According to signaling theory, the voluntary resignation of independent directors signals company risk to external parties (Gupta and Fields, 2009; Lin et al., 2012; Bar-Hava et al., 2021; Cao et al., 2023), such as poor company performance (Arthaud-Day et al., 2006), high levels of earnings management (Zhi and Tong, 2005) or elevated legal risks (Yang and Huang, 2015). This paper focuses on the responses of auditors, as stakeholders in listed companies, to the voluntary resignation of independent directors.

On 1 March 2020, the newly revised Securities Law of the People's Republic of China (2019 Revision) (hereinafter "the New Securities Law") officially came into effect. The new law required listed companies to expand the scope of their information disclosure, including the disclosure of dissenting votes on the board of directors, and increased the penalties for violations. As a result, independent directors now face a higher risk of receiving substantial penalties due to a listed company's violations (Guo, 2022; Li et al., 2022; Tang et al., 2023). Under the new law, therefore, independent directors bear a higher level of risk but receive fewer benefits. This imbalance has contributed to an increase in resignations by independent directors of listed companies (Zhang et al., 2023), which has attracted attention from all sectors of society and provides a good scenario for this study to explore the signaling effect of the resignation of independent directors.

To test the risk control strategies adopted by auditors in response to the voluntary resignation of independent directors, we focus on a sample of listed firms on the Chinese A-share market from 2018 to 2021. We find that listed firms experiencing voluntary resignations by independent directors, compared with those not experiencing such resignations, are charged higher audit fees and have a higher probability of audit firm change. However, we find no evidence that such voluntary resignations have a significant impact on audit effort. Mechanism tests show that the voluntary resignation of listed companies' independent directors signals to the outside world that the companies are at risk of regulatory penalties. As a result, there is also an increase in negative media coverage of the companies, which increases auditors' perception of risk and thus affects their response behavior. Further analysis indicates that since the implementation of the New Securities Law, the voluntary resignation of independent directors has conveyed a stronger risk signal and the risk perceived by auditors has increased, making the positive effect of voluntary resignation on abnormal audit fees more pronounced. Additionally, we find that in response to the risk brought about by the voluntary resignation of independent directors, auditors tend to charge higher audit fees when they believe the risk to be at an acceptable level; however, when they believe that the risk outweighs the benefits, they will seek to avoid risk by discontinuing the client relationship.

Our paper makes the following contributions. First, it enriches the literature on the economic consequences of the voluntary resignation of independent directors. Most previous studies explore this topic from the perspectives of investors and listed firms, with few discussing auditors. This paper takes auditor responses as a starting point, offering a new perspective on the economic consequences of the voluntary resignation of independent directors.

Second, our paper expands research on the factors influencing auditor response behavior. While the literature explores the impact of factors such as fraud risk, the executive team and policy implementation on auditor response behavior, few studies systematically explore such behavior from the perspective of the voluntary resignation of independent directors. In contrast with previous studies, most of which consider only a single auditor behavior, this paper uses the sequential analysis method proposed by Krishnan et al. (2013) to make the study of auditor responses more systematic and comprehensive.

Third, this study provides new evidence of how systemic risk factors such as laws and regulations affect auditors' risk perception, thus enhancing understanding of auditor response behavior and providing empirical support for the effectiveness of the implementation of the New Securities Law.

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The remainder of the paper proceeds as follows. Section 2 reviews the literature. Section 3 develops our hypothesis. Section 4 describes the data, variables and research design. Section 5 provides the empirical results and reports on a series of robustness tests. Section 6 presents the mechanism analysis. Section 7 describes further analyses. Section 8 presents the heterogeneity analysis. Section 9 concludes the paper.

2. Literature review

2.1. Voluntary resignation of independent directors

Studies show that listed companies whose independent directors voluntarily resign have significant deficiencies in internal control (Shang and Hu, 2016); an increased probability of financial misconduct and regulatory penalties (Dai et al., 2014; Goodell et al., 2023); reduced investment in research and development and reduced innovation efficiency (Le et al., 2020; Cao et al., 2023); and increased levels of cash holdings (Tian and Wang, 2019). The economic consequences of the voluntary resignation of independent directors are primarily explored from the perspectives of investors and listed companies.

From the perspective of investors, voluntary resignation is a way for independent directors to "vote with their feet" to avoid risk, signaling to the market that a company is experiencing risks and/or governance deficiencies. The voluntary resignation of independent directors can reduce the corporate value and operational performance of listed companies (Bazerman and Schoorman, 1983; Tang and Ma, 2012; Huang and Chan, 2018; Bar-Hava et al., 2021; Zhang et al., 2023). In China, these effects have been especially pronounced since the judgment of the first Special Representative Securities Action case following the implementation of the New Securities Law, namely the Kangmei Pharmaceutical case. After this judgment, the market reaction around the dates of voluntary resignations of independent directors showed a significant (3.9 %) decrease (Xie et al., 2023).

From the perspective of listed firms, independent directors mainly play supervisory and advisory roles. After the voluntary resignation of independent directors, the newly appointed independent directors have lower supervisory and advisory capabilities than their predecessors, due to the influence of a learning effect (Gupta and Fields, 2009). This reduces the governance capabilities and internal control quality of listed firms and affects their standardized operations (Guo, 2022).

Few studies explore the impact of the voluntary resignation of independent directors on auditor behavior. Shang and Hu (2016) find that auditors are more likely to issue qualified audit opinions for listed companies that have experienced voluntary resignations by independent directors. Xie et al. (2023) show that auditors pay attention to the market reaction to the voluntary resignation of independent directors and adopt corresponding strategies to adjust key aspects of the audit process.

2.2. Auditor responses

Auditor responses mainly depend on the magnitude of risks associated with client companies. Auditors conduct a risk assessment of a client company before entering into a contract and adjust their audit plan, audit effort and audit fees according to the level of risk identified (Johnstone, 2000). The literature on the factors influencing auditor responses focuses on two main factors: corporate executives and enterprise risk.

From the perspective of corporate executives, when the executive team is less stable and management is overconfident, auditors will charge higher audit fees to address potential risks. If such risks exceed the auditors' tolerance threshold, they will choose to avoid risk by discontinuing the client relationship, leading to auditor change (Cai et al., 2015; Liu et al., 2018; Wang et al., 2022). Changes in a company's executive team create uncertainty about the future operating conditions and financial policies of the company (Miller, 1993). In such circumstances, auditors are also likely to adopt risk mitigation measures such as increasing audit fees or terminating the audit (Simunic, 1980; Jiang et al., 2007; Wang et al., 2021; Zhu and Liu, 2022).

From the perspective of enterprise risk, the higher the risk associated with a company, the greater the risk of audit failure and the more extensive auditor responses become (Wang et al., 2022). Specifically, when clients have higher levels of earnings management, lower-quality internal control and higher litigation risks, auditors are more likely to take measures such as increasing audit fees and effort, issuing unqualified opinions with

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reservations and canceling the audit agreement based on their risk perception (Krishnan and Krishnan, 1997; Elder et al., 2009; Krishnan et al., 2013). Aspects of the external environment and policy implementation, such as media attention (Liu et al., 2014), tax policies (Hu et al., 2022) and environmental regulations (Ji et al., 2022), also affect auditors' risk perception, leading to auditor responses such as increasing audit fees.

2.3. Critical review

Most previous studies explore the economic consequences of the voluntary resignation of independent directors from the perspectives of investors and listed firms. Given China's current context, following the implementation of the New Securities Law, which has increased the perceived risk faced by auditors, there is a need for more research on this topic from the perspective of auditors' risk perception. In addition, research on the factors influencing auditors' risk response strategies typically considers individual actions taken by auditors, such as increasing audit fees or effort or discontinuing the client relationship. Little research organically links the voluntary resignation of independent directors with auditors' systematic strategies in response to risk.

3. Theoretical analysis and hypothesis

In recent years, with the gradual refinement of China's independent director system, the mechanism of governance of Chinese independent directors has become a hot topic of research. Many scholars explore the voluntary resignation events of independent directors. Kaplan and Reishus (1990) and Gilson (1990) argue that the voluntary resignation of an independent director due to poor company performance affects the director's reputation, making it more difficult for them to find employment in the future. Tan et al. (2006) and Dai et al. (2014) also note that legal risks and reputational losses are important factors influencing the decision of independent directors to voluntarily resign. Therefore, this decision can be assumed to be well considered. Accordingly, such resignation events reflect the risks facing listed companies to a certain extent.

The independent director system was originally established to alleviate the principal–agent problem faced by enterprises (Fama and Jensen, 1983). Compared with non-independent directors, independent directors have access to more internal information about listed companies and are better positioned to detect risks, due to their supervisory and consultative roles. In reality, however, because of their personal relationships, independent directors rarely opt to resign voluntarily. When they identify corporate governance flaws, they often choose to remain silent out of courtesy, which significantly undermines their supervisory role. In such circumstances, independent directors may face fines for failing to perform their duties diligently, which can severely impact their reputation (Xin et al., 2013). Based on this, we argue that independent directors only choose to resign when the risk of corporate penalties is particularly high, and such resignation events can signal to the market that the listed companies involved may be at risk.

Auditors are highly sensitive to the risks associated with listed companies, but as outsiders, they face challenges in identifying all of these risks due to information asymmetry. Consequently, the abrupt voluntary resignation of an independent director may serve as a warning to auditors to maintain a prudent audit approach. First, auditors may harbor suspicions about the reasons for the independent director's resignation. To guard against the inherent risk of material misstatement (Zhu and Liu, 2022), they will remain skeptical about the compliance of certain business and accounting treatments. Second, auditors may question whether the company's newly appointed independent directors can effectively fulfill their supervisory and advisory roles (Liang and Li, 2022). This will lead to an increase in both control risk and audit risk.

DeAngelo (1981) points out that in a competitive market environment, auditors often hope to earn quasi-rents by maintaining long-term relationships with clients. When a listed company has higher inherent and control risks, auditors will engage in additional audit procedures and increase their audit effort to reduce their own legal and reputational risk to an acceptable level (Chen et al., 2019). Upon identifying the risk signals conveyed by the voluntary resignation of independent directors, auditors will charge higher audit fees based on the increased audit effort or risk premium (Simunic, 1980). However, when auditors perceive the voluntary resignation of independent directors to convey a level of risk that exceeds an acceptable threshold, they will

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choose to terminate their engagement with the client company (Johnstone and Bedard, 2003). Based on this, we propose the following hypothesis:

H1. The voluntary resignation of independent directors prompts various auditor responses.

4. Data and research design

4.1. Data

We select A-share listed companies in China from 2018 to 2021 as our sample, excluding those in the financial industry and those with missing data. We ultimately obtain 14,887 firm-year observations. The new Code of Corporate Governance for Listed Companies was issued in 2018, imposing new regulations on the responsibilities of independent directors. We select 2018 as the starting year to mitigate potential endogeneity issues. The sample of voluntary resignations of independent directors is manually compiled from the Cninfo website, summarizing 1508 voluntary resignation events involving 1261 listed companies from 1 January 2018 to 31 December 2021. After the aforementioned data processing, the final sample of voluntary resignations for regression analysis comprises 1073 firm-year observations. Audit data, financial data and corporate governance data are sourced from the China Stock Market & Accounting Research database, and data on negative media coverage come from the Chinese Research Data Services database. To mitigate the impact of extreme values, we apply 1 % up and down winsorization for all continuous variables.

4.2. Variable definitions

4.2.1. Voluntary resignation of independent directors

Following Xie et al. (2023), a dummy variable (*INResign*) is introduced to measure the voluntary resignation of independent directors. *INResign* takes the value of 1 if a listed company experiences the voluntary resignation of an independent director, and 0 otherwise.

4.2.2. Audit effort

Audit effort is measured by audit delay (*LnAlag*), following Li and Chen (2023). *LnAlag* is defined as the natural logarithm of the number of days between the balance sheet date and the date of issuance of the audit report.

4.2.3. Abnormal audit fees

Referring to Cai and Zhang (2022), we measure abnormal audit fees (*ABFEE*) by calculating the residual term of Model (1):

$$LNFEE_{it} = \alpha + \beta_0 Size_{it} + \beta_1 Lev_{it} + \beta_2 ROA_{it} + \beta_3 Loss_{it} + \beta_4 Growth_{it} + \beta_5 LnAlag_{it} + \beta_6 Accr_{it} + \beta_7 Inv_{it} + \beta_8 Current_{it} + \beta_{10} Big4_{it} + \beta_{11} Extra_{it} + \beta_{12} Cata_{it} + \sum Industry + \sum year + \varepsilon_{it} \quad (1)$$

where *LNFEE* represents the natural logarithm of audit fees for the current year, controlling for factors such as the company's size (*Size*), debt ratio (*Lev*) and return on assets (*ROA*); whether the company is incurring a loss (*Loss*); the company's growth potential (*Growth*); audit effort (*LnAlag*); the ratio of accounts receivable to total assets (*Accr*); the ratio of inventory to total assets (*Inv*); the current ratio (*Current*); whether the auditor is one of the Big Four (*Big4*); the ratio of operating income to net profit (*Extra*); and the ratio of current assets to total assets (*Cata*).

4.2.4. Auditor change

Auditor change (*Change*) takes the value of 1 if the audit firm of the listed company changes in the current year, and 0 otherwise, excluding cases of firm renaming, merger or split.

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4.3. Research design

To explore auditors' responses to the voluntary resignation of independent directors, we construct the following model:

$$Response_{it} = \alpha + \beta_0 INResign_{it} + \beta_1 Controls + \sum Industry + \sum year + \varepsilon_{it} \quad (2)$$

Specifically, we use audit effort (*LnAlag*), abnormal audit fees (*ABFEE*) and auditor change (*Change*) to measure the dependent variable (*Response*). Model (2) includes control variables selected with reference to Liang and Li (2022) and Shang and Hu (2016), which encompass firm size (*Size*), debt ratio (*Lev*), return on assets (*ROA*), firm age (*Age*), growth potential (*Growth*), proportion of independent directors (*Indep*), board size (*Board*), whether the firm is experiencing a loss (*Loss*), affiliation with one of the Big Four audit firms (*Big4*) and the combination of CEO and chairman roles (*Dual*). For detailed variable definitions, see Table 1.

5. Empirical results

5.1. Descriptive statistics

Table 2 provides the reasons for the voluntary resignation of independent directors and the number of observations in our sample. The majority of the observations show independent directors resigning for personal reasons, accounting for 72.32 % of the voluntary resignation sample. Table 3 illustrates the distribution of listed companies that experienced voluntary resignations by independent directors from 2018 to 2021. The table shows that the number of companies experiencing the voluntary resignation of independent directors increased year by year during this period, with the proportion of such companies reaching its highest value, at 7.91 % of the total sample, in 2021.

Table 4 shows the results of descriptive statistical analysis of the variables. The mean of audit effort (*LnAlag*) is 4.639, with a minimum value of 2.833, a maximum value of 5.220 and a standard deviation of 0.178, indicating a significant variation in audit effort between companies. The mean of abnormal audit fees (*ABFEE*) is –0.001, with a minimum value of –0.962 and a maximum value of 1.016, spanning 1.978. The mean of audit firm change (*Change*) is 0.104, indicating that 10.4 % of the sampled companies changed their audit firms between 2018 and 2021. The mean of the independent director voluntary resignation variable (*INResign*) is 0.072, indicating that 7.2 % of the companies in the sample experienced voluntary resignations by independent directors during the sample period. In terms of the control variables, the minimum and maximum values of firm size (*Size*) are 19.753 and 26.372, respectively, indicating a large variation in the size of the

Table 1
Variable definitions.

Variable	Definition
LnAlag	Natural logarithm of the number of days between the balance sheet date and the audit report issuance date.
ABFee	Residuals from Model (1).
Change	Dummy variable that takes the value of 1 if there is a change in the audit firm hired in a given year, and 0 otherwise.
INResign	Dummy variable that takes the value of 1 for listed companies experiencing the voluntary resignation of independent directors, and 0 otherwise.
Size	Natural logarithm of year-end asset balance.
Lev	Year-end total liabilities divided by year-end total assets.
ROA	Net profit to total assets ratio.
Age	Natural logarithm of the difference between the current year and the year of listing.
Growth	Percentage change in operating revenue from the previous year.
Indep	Ratio of independent directors to total board members.
Board	Natural logarithm of the number of board members.
Loss	Dummy variable that takes the value of 1 if the current year's net profit is less than 0, and 0 otherwise.
Big4	Dummy variable that takes the value of 1 if the company is audited by one of the Big Four audit firms, and 0 otherwise.
Dual	Dummy variable that takes the value of 1 if the chairman and general manager are the same person, and 0 otherwise.

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Table 2
Reasons for resignation.

Reason for Resignation	Event Count	Proportion
Health-/Age-Related	38	3.54 %
Work-Related	233	21.71 %
Personal	776	72.32 %
Unspecified	16	1.49 %
Inability to Fulfill Duties	4	0.37 %
Mutual Agreement for Company-Related Reasons	4	0.37 %
Doubts About Company's Regular Related-Party Transactions	1	0.09 %
Change in Management Relationship in Personal Workplace	1	0.09 %
Total	1,073	100.00 %

Table 3
Independent director resignation sample statistics.

Year	Total Sample	Voluntary Resignation	
		Sample Size	Proportion
2018	3,297	245	7.51 %
2019	3,495	234	6.77 %
2020	3,799	251	6.85 %
2021	4,296	343	7.91 %
Total	14,887	1,073	7.28 %

Table 4
Summary statistics.

Variable	N	Mean	Median	SD	Min	25th pct	75th pct	Max.
LnAlag	14,887	4.639	4.710	0.178	2.833	4.511	4.762	5.220
ABFEE	14,887	–0.001	–0.004	0.382	–0.962	–0.254	0.244	1.016
Change	14,887	0.104	0.000	0.306	0.000	0.000	0.000	1.000
INResign	14,887	0.072	0.000	0.259	0.000	0.000	0.000	1.000
Size	14,887	22.279	22.081	1.308	19.753	21.343	23.009	26.372
Lev	14,887	0.422	0.411	0.207	0.059	0.258	0.565	0.962
ROA	14,887	0.035	0.040	0.087	–0.384	0.013	0.076	0.239
Age	14,887	2.073	2.303	0.969	0.000	1.386	2.944	3.367
Growth	14,887	0.157	0.105	0.393	–0.643	–0.027	0.266	2.401
Indep	14,887	0.379	0.364	0.054	0.333	0.333	0.429	0.571
Board	14,887	2.100	2.197	0.196	1.609	1.946	2.197	2.639
Loss	14,887	0.141	0.000	0.348	0.000	0.000	0.000	1.000
Big4	14,887	0.060	0.000	0.237	0.000	0.000	0.000	1.000
Dual	14,887	0.321	0.000	0.467	0.000	0.000	1.000	1.000

listed companies in the sample. The mean of the debt ratio (*Lev*) is 0.422, indicating a moderate overall debt ratio for the sampled companies. The results of the descriptive statistical analysis are similar to those reported in previous studies, with no significantly abnormal values detected.

5.2. Correlation analysis

Table 5 presents the Pearson correlation coefficients for the variables. The voluntary resignation of independent directors (*INResign*) is positively and significantly correlated with audit effort, abnormal audit fees and auditor change, providing preliminary support for H1. In terms of the control variables, the maximum absolute value of the correlation coefficients is 0.571, indicating that there is no severe problem of multicollinearity among the variables.

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Table 5
Correlation analysis.

	LnAlag	*ABFEE*	*AFchange*	*INResign*	*Size*	*Lev*	*ROA*	*Age*	*Growth*	*Indep*	*Board*	*Loss*	*Big4*
ABFEE	0.040***	1.000											
AFchange	0.063***	0.017**	1.000										
INResign	0.026***	0.024***	0.043***	1.000									
Size	–	–	–0.016*	–	1.000								
	0.046***	0.022***		0.038***									
Lev	0.016**	0.030***	0.011	0.038***	0.019**	1.000							
ROA	–	–0.018**	–	–	0.031***	–	1.000						
	0.107***		0.051***	0.076***		0.488***							
Age	–	–0.008	0.042***	0.041***	0.407***	0.063***	–	1.000					
	0.022***						0.139***						
Growth	–0.004	0.009	0.018**	–0.005	0.003	0.000	0.030***	–0.013	1.000				
Indep	0.026***	0.026***	0.014*	–0.002	–0.013	0.001	–0.016**	–0.002	–0.011	1.000			
Board	–	–	–0.014*	0.000	0.273***	0.013	0.012	0.150***	0.019**	–	1.000		
	0.044***	0.024***								0.571***			
Loss	0.183***	0.019**	0.073***	0.082***	–	0.064***	–	0.155***	–0.004	0.033***	–	1.000	
					0.079***		0.408***				0.050***		
Big4	–	–	–0.003	–0.018**	0.314***	0.007	0.024***	0.025***	0.046***	0.021**	0.083***	–	1.000
	0.101***	0.033***										0.040***	
Dual	0.050***	0.047***	–0.019**	–0.011	–	–	0.025***	–	0.001	0.107***	–	–0.007	–
					0.197***	0.025***		0.263***			0.177***		0.053***

Note: *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively.

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5.3. Main results

Table 6 displays the regression results for Model (2). Column (1) shows the results of regressing the voluntary resignation of independent directors on audit effort. The coefficient of the voluntary resignation of independent directors (*INResign*) is 0.005, but it does not pass the significance test. Therefore, there is no evidence that auditors increase audit effort for listed companies experiencing voluntary resignations by independent directors (see Table 7).

In Column (2), the coefficient of the voluntary resignation of independent directors (*INResign*) is 0.029, which is significant at the 5 % level. This indicates that auditors perceive risk signals to be conveyed by listed companies experiencing the voluntary resignation of independent directors. Therefore, auditors charge significantly higher audit fees for listed companies experiencing voluntary resignations by independent directors than for their counterparts not experiencing such resignations.

Table 6
Voluntary resignation of independent directors and auditor responses.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
INResign	0.005	0.029**	0.373***
	(0.920)	(2.180)	(3.910)
Size	0.006***	–0.002	–0.095***
	(2.608)	(–0.280)	(–3.323)
Lev	0.013	0.055	0.484***
	(1.096)	(1.565)	(2.821)
ROA	–0.303***	–0.179**	–1.324***
	(–10.895)	(–2.390)	(–2.880)
Age	–0.015***	–0.002	0.096***
	(–6.378)	(–0.305)	(2.653)
Growth	–0.023***	0.006	0.280***
	(–4.779)	(0.579)	(3.911)
Indep	0.019	0.128	0.413
	(0.459)	(1.001)	(0.639)
Board	–0.011	0.000	–0.133
	(–0.895)	(0.002)	(–0.688)
Loss	0.035***	–0.021	0.267**
	(6.248)	(–1.357)	(2.486)
Big4	–0.073***	–0.044	0.096
	(–7.886)	(–1.622)	(0.753)
Dual	0.013***	0.035***	–0.099
	(3.187)	(3.324)	(–1.534)
Cons	4.564***	–0.030	–1.663*
	(86.722)	(–0.185)	(–1.673)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	14,887	14,887	14,887
F/chi2	80.402	3.141	5,768.482
Adj-R^2/Pseudo R^2	0.097	0.005	0.049

Note: Figures in parentheses are robust standard errors, obtained by clustering at the firm level. *, ** and *** denote significance at the 10%, 5% and 1% levels, respectively, as below.

Table 7
Common support test.

Group	Outside Common Support Area	Inside Common Support Area	Total
Control Group	101	13,713	13,814
Experimental Group	7	1,066	1,073
Total	108	14,779	14,887

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In Column (3), the coefficient for listed companies experiencing the voluntary resignation of independent directors (*INResign*) is 0.373, which is significant at the 1 % level. Economically, this suggests that listed companies with (vs. without) voluntary resignations by independent directors are 45.16 % more likely to experience a change in audit firms. This indicates that the audit contract relationship between auditors and listed companies with (vs. without) such resignations is less stable and the likelihood of a change of audit firm is greater. In summary, H1 is supported.

5.4. Robustness tests

5.4.1. Propensity score matching

To eliminate the impact of company-specific characteristics on the research conclusions, we use propensity score matching (PSM) to test the main findings of the paper. First, we select firm size (*Size*), debt ratio (*Lev*), return on assets (*ROA*), firm age (*Age*), growth potential (*Growth*), whether the firm is loss-making (*Loss*), affiliation with one of the Big Four audit firms (*Big4*) and the combination of CEO and chairman roles (*Dual*) as covariates for PSM matching. Table 8 and Fig. 1 display the results of a PSM balance test, indicating that there are no significant differences between the two groups for any of the control variables after PSM. Therefore, the balance test is passed.

Using the propensity score-matched sample, we retest Model (2). Column (1) of Table 9 shows that the regression coefficient of the voluntary resignation of independent directors (*INResign*) is positive (0.007) but does not pass the significance test. Column (2) shows that the regression coefficient of *INResign* is positive (0.031) and significant at the 5 % level. Column (3) shows that the regression coefficient of *INResign* is positive (0.320) and significant at the 1 % level. These results are consistent with the previous research findings.

5.4.2. Two-stage least squares estimation with instrumental variable

We select the natural logarithm of the number of deaths from natural disasters in each province per year (*Death*) as an exogenous instrumental variable and conduct two-stage least squares (2SLS) regression to address potential endogeneity issues arising from omitted variables and bidirectional causality. A large number of deaths from natural disasters in a province indicates that the province frequently experiences natural disasters, which implies a greater physical risk for independent directors traveling to listed companies in that province to fulfill their duties. Consequently, independent directors are less willing to serve at listed companies in such provinces, meeting the requirement of relevance for the instrumental variable. However, the number of deaths from natural disasters in each province does not have a direct relationship with auditors' responses to a

Table 8
PSM balance test.

Variable	Sample	Mean		Standard Error (%)	Reduction in Standard Error (%)	T-test	
		Treatment Group	Control Group			T	P>|T|
Size	U	22.107	22.292	–14.7	86.7	–4.460	0.000
	M	22.121	22.097	2.0		0.470	0.640
Lev	U	0.458	0.419	18.1	86.0	5.960	0.000
	M	0.455	0.449	2.5		0.570	0.566
ROA	U	0.003	0.038	–33.8	98.4	–12.690	0.000
	M	0.005	0.005	–0.5		–0.110	0.912
Age	U	2.213	2.062	16.6	85.7	4.950	0.000
	M	2.207	2.186	2.4		0.570	0.568
Growth	U	0.125	0.159	–8.4	81.7	–2.790	0.005
	M	0.125	0.131	–1.5		–0.350	0.728
Loss	U	0.243	0.133	28.6	99.7	10.080	0.000
	M	0.238	0.239	–0.1		–0.020	0.984
Big4	U	0.045	0.061	–7.3	81.7	–2.180	0.029
	M	0.045	0.042	1.3		0.340	0.734
Dual	U	0.304	0.323	–4.1	88.6	–1.280	0.200
	M	0.305	0.307	–0.5		–0.110	0.914

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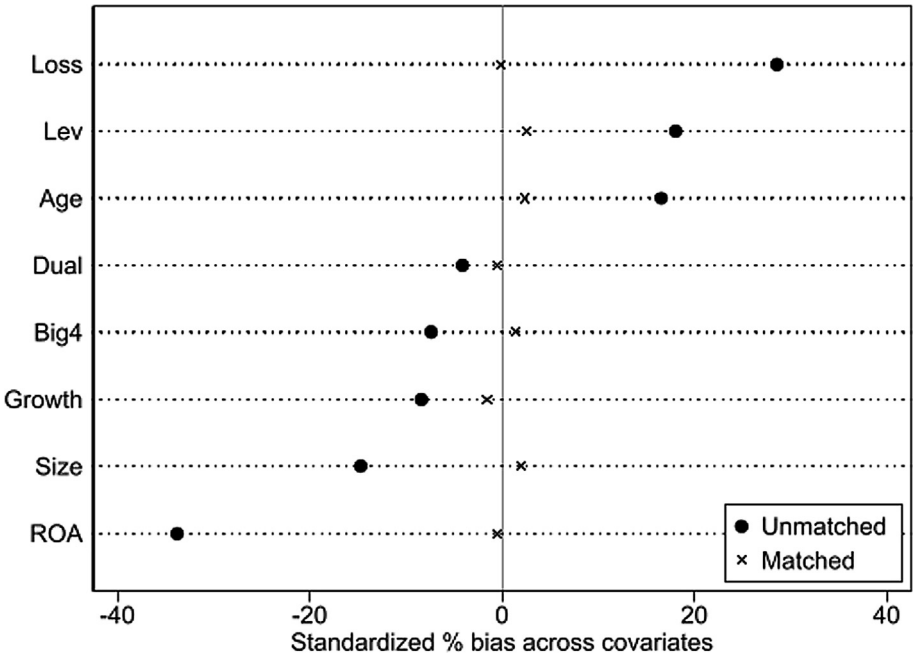

Fig. 1. PSM balance test.

particular company, thus meeting the requirement of exogeneity for the instrumental variable. Table 10 shows the test results. In Column (2), the coefficient of the voluntary resignation of independent directors (*INResign*) is positive and significant at the 1 % level, consistent with the conclusions described earlier. The Wu–Hausman test, whose results are reported in Column (3), confirms that the variable is exogenous and there is no need to use the instrumental variable method to address endogeneity.

5.4.3. Heckman two-stage method

As factors such as firm size, profitability and debt-paying ability may affect both the decision of independent directors to voluntarily resign and the responses of auditors to that decision, we re-estimate the results using the Heckman two-stage method to address this potential endogeneity issue. In the first stage, the voluntary resignation of independent directors (*INResign*) is taken as the dependent variable, and the control variables from Model (2) and the instrumental variable (*Death*) mentioned above are used as independent variables. A probit model is used to conduct a regression to calculate the inverse Mills ratio (*IMR*). In the second stage, the value of *IMR* estimated from the first stage is included in the regression analysis in Model (2).

Table 11 presents the results of the Heckman two-stage method. The coefficient of *IMR* in Column (2) is significant at the 1 % level, indicating the presence of endogeneity. After eliminating endogeneity using the Heckman two-stage method, the coefficient of the voluntary resignation of independent directors (*INResign*) remains positive (0.028) and is significant at the 10 % level, further verifying the conclusion that listed companies experiencing the voluntary resignation of independent directors are charged higher audit fees. The estimated coefficient of *IMR* in Column (3) is statistically nonsignificant, indicating that the model does not suffer from severe endogeneity, and the estimated coefficient of the voluntary resignation of independent directors (*INResign*) is positive (0.378) and significant at the 1 % level, again reaffirming the paper's conclusion.

5.4.4. Sensitivity analysis of independent variable

The independent director resignation events in our sample are categorized as voluntary or nonvoluntary based on the reasons for resignation. To assess the sensitivity of the classification of voluntary resignation, we reclassify the reasons for the voluntary resignation of independent directors to include only health- and

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Table 9
Robustness test: Propensity score-matched.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
INResign	0.007	0.031**	0.320***
	(1.237)	(2.231)	(3.172)
Size	0.004	–0.021**	–0.122***
	(1.344)	(–2.495)	(–2.800)
Lev	0.019	0.078*	0.378
	(1.222)	(1.755)	(1.504)
ROA	–0.287***	–0.104	–1.604***
	(–7.355)	(–1.121)	(–2.621)
Age	–0.018***	0.006	0.113*
	(–5.302)	(0.678)	(1.890)
Growth	–0.024***	–0.004	0.333***
	(–3.038)	(–0.238)	(3.231)
Indep	–0.010	0.034	0.462
	(–0.186)	(0.217)	(0.430)
Board	–0.010	–0.005	0.172
	(–0.584)	(–0.113)	(0.553)
Loss	0.035***	–0.025	0.077
	(4.072)	(–1.202)	(0.493)
Big4	–0.066***	–0.100***	0.176
	(–4.958)	(–2.649)	(0.763)
Dual	0.007	0.025*	–0.002
	(1.242)	(1.794)	(–0.020)
Cons	4.611***	0.411**	–1.466
	(62.493)	(2.098)	(–0.918)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	5,252	5,252	5,235
F/chi^2	40.138	2.938	2,069.271
Adj-R^2*/Pseudo R*^{2}	0.114	0.013	0.051

Note: The reduced sample size in Column (3) is due to the logit regression with controlled industry fixed effects.

age-related reasons, work-related reasons, personal reasons and doubts about the company's regular related-party transactions. A new indicator of the voluntary resignation of independent directors (*INResign_r*) is constructed and Model (2) is re-estimated. The results are shown in Table 12. In Column (1), the coefficient of voluntary resignation is positive but not significant. In Column (2), the coefficient of voluntary resignation of independent directors is 0.029 and significant at the 5 % level. In Column (3), the regression coefficient for voluntary resignation of independent directors is 0.379 and significant at the 1 % level, consistent with the previous conclusions. That is, listed companies experiencing the voluntary resignation of independent directors face higher audit fees and a higher likelihood of change in audit firms. However, Table 12 provides no evidence of a significant increase in audit effort for such companies.

5.4.5. Alternative measure of dependent variable

Following Quan and Lu (2016), we use audit workload (*ARL*) as an alternative measure of audit effort (*LnAlag*), defined as 1 if the audit report date for the current year is later than that for the previous year for the same period, and 0 otherwise. Referring to Cai and Zhang (2022), we use the natural logarithm of audit fees (*LNFEE*) as an alternative variable for abnormal audit fees (*ABFEE*). Model (2) is re-estimated using these alternative variables, and the regression results are presented in Table 13. The regression coefficient of the voluntary resignation of independent directors (*INResign*) in Column (1) of Table 13 does not pass the significance test. In Column (2), the regression coefficient of the voluntary resignation of independent

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Table 10
IV-2SLS results.

	(1)	(2)	(3)
Variable	*INResign*	*ABFEE*	*Change*
Death	–0.046***		
	(–2.929)		
INResign		1.801***	0.297*
		(5.435)	(1.699)
Size	–0.104***	0.017**	–0.006
	(–5.518)	(2.384)	(–1.615)
Lev	0.412***	–0.032	0.021
	(3.785)	(–0.851)	(1.063)
ROA	–0.879***	0.110	–0.140**
	(–3.057)	(0.984)	(–2.381)
Age	0.084***	–0.022***	0.003
	(3.786)	(–2.973)	(0.817)
Growth	–0.037	0.005	0.027***
	(–0.760)	(0.335)	(3.487)
Indep	–0.049	0.032	0.032
	(–0.113)	(0.258)	(0.491)
Board	0.153	–0.059*	–0.023
	(1.292)	(–1.651)	(–1.202)
Loss	0.077	–0.044**	0.023**
	(1.172)	(–1.993)	(1.985)
Big4	–0.010	–0.042	0.013
	(–0.108)	(–1.641)	(0.928)
Dual	–0.026	0.035***	–0.010
	(–0.669)	(2.995)	(–1.543)
Cons	0.078	–0.304*	0.153
	(0.137)	(–1.659)	(1.580)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	13,194	12,690	12,690
F/chi^2	209.924	82.226	468.017
Wu–Hausman F (1,12655)		70.158***	2.23323
Shea's partial R^2		0.004	0.004
Minimum eigenvalue statistic		48.584	48.584
2SLS size of nominal 5 % Wald test (10 %)		16.38	16.38

Note: The reduction in sample size is due to the presence of missing values for the *Death* variable.

directors (*INResign*) is positive and passes the significance test at the 5 % level, which is in line with the findings of previous research.

5.4.6. Auditor responses in the subsequent period

In the context of audit practice, listed companies may sign engagement letters with audit firms before the balance sheet date to determine audit fees (Yu et al., 2020). Therefore, the voluntary resignation of an independent director between the signing of the engagement letter and the balance sheet date will not affect audit fees or the likelihood of a change in audit firms for the current period. However, it may have an impact on audit fees and the likelihood of audit firm change in the subsequent period. Consequently, we replace the audit effort (*LnAlag*), abnormal audit fees (*ABFEE*) and change in audit firm (*Change*) variables in Model (2) with the corresponding variables for the $t + 1$ period, namely future audit effort (*FLnAlag*), future abnormal audit fees (*FABFEE*) and future change in audit firm (*FChange*), and re-estimate the model. This approach also helps to mitigate endogeneity issues within the model. The regression results are presented in Table 14.

The results in Column (1) of Table 14 show that the regression coefficient of the voluntary resignation of independent directors (*INResign*) is positive but statistically nonsignificant (0.008), indicating that there is no evidence that the voluntary resignation of independent directors leads to significantly increased audit effort in

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Table 11
Heckman two-stage method.

	(1)	(2)	(3)
Variable	*INResign*	*ABFEE*	*Change*
IMR		–0.321***	–0.406
		(–3.308)	(–0.606)
INResign		0.028*	0.378***
		(1.954)	(3.615)
Death	–0.046***		
	(–2.899)		
Size	–0.104***	0.021*	–0.064
	(–5.948)	(1.934)	(–0.971)
Lev	0.412***	–0.047	0.242
	(4.170)	(–0.956)	(0.824)
ROA	–0.879***	0.033	–1.122
	(–3.275)	(0.316)	(–1.623)
Age	0.084***	–0.027***	0.046
	(3.889)	(–2.712)	(0.727)
Growth	–0.037	0.010	0.256***
	(–0.827)	(0.846)	(3.041)
Indep	–0.049	0.052	0.365
	(–0.125)	(0.387)	(0.510)
Board	0.153	–0.065	–0.247
	(1.353)	(–1.568)	(–1.073)
Loss	0.077	–0.043**	0.232*
	(1.199)	(–2.448)	(1.903)
Big4	–0.010	–0.036	0.135
	(–0.114)	(–1.127)	(0.906)
Dual	–0.026	0.039***	–0.104
	(–0.696)	(3.430)	(–1.472)
Cons	0.078	0.330*	–0.885
	(0.148)	(1.871)	(–0.743)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	13,194	12,690	12,690
F/chi²	229.333	3.741	463.490
Adj-R²/Pseudo R²	0.033	0.009	0.051

the subsequent period (*FLnAlag*). Column (2) shows that the regression coefficient of the voluntary resignation of independent directors (*INResign*) is positive (0.026) and significant at the 5 % level, indicating that the voluntary resignation of independent directors also significantly increases abnormal audit fees in the subsequent period (*FABFEE*). Column (3) shows that the regression coefficient of the voluntary resignation of independent directors (*INResign*) is 0.204 and significant at the 5 % level. This indicates that listed companies with (vs. without) voluntary resignations by independent directors are also more likely to experience a change in audit firms in the subsequent period, further substantiating the conclusions of this study.

6. Mechanism analysis

Based on the theoretical analysis in the previous section, the voluntary resignation of independent directors may affect auditors' strategies by signaling the risk of potential regulatory penalties to external stakeholders and increasing negative media coverage. Next, we examine the authenticity of these two potential mechanisms. Following Di Giuli and Laux (2022), we use a two-stage method to conduct mechanism testing. The first stage estimates the impact of the voluntary resignation of independent directors (*INResign*) on the mechanism variable (*M*); the second stage analyzes the impact of the predicted mechanism variable (*M*) obtained from the first stage on auditors' responses (abnormal audit fees, *ABFEE*, and change in audit firm, *Change*). Specifically, the two-stage test is implemented by estimating the following system of equations:

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Table 12
Sensitivity analysis of independent variable.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
INResign_r	0.006	0.029**	0.379***
	(1.080)	(2.177)	(3.950)
Size	0.006***	–0.002	–0.095***
	(2.613)	(–0.280)	(–3.321)
Lev	0.013	0.055	0.482***
	(1.090)	(1.563)	(2.808)
ROA	–0.303***	–0.179**	–1.324***
	(–10.889)	(–2.390)	(–2.873)
Age	–0.015***	–0.002	0.096***
	(–6.381)	(–0.303)	(2.658)
Growth	–0.023***	0.006	0.280***
	(–4.780)	(0.578)	(3.909)
Indep	0.019	0.129	0.413
	(0.459)	(1.001)	(0.638)
Board	–0.011	0.000	–0.133
	(–0.896)	(0.003)	(–0.687)
Loss	0.035***	–0.021	0.268**
	(6.250)	(–1.352)	(2.494)
Big4	–0.073***	–0.044	0.095
	(–7.888)	(–1.624)	(0.747)
Dual	0.013***	0.035***	–0.098
	(3.188)	(3.326)	(–1.529)
Cons	4.564***	–0.030	–1.665*
	(86.723)	(–0.185)	(–1.675)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	14,887	14,887	14,887
F/chi^2	80.418	3.135	5,765.772
Adj-R^2*/Pseudo R*^{2}	0.097	0.005	0.049

$$M_{it} = \alpha + \beta_0 INResign_{it} + \beta_1 Controls + \sum Industry + \sum year + \varepsilon_{it} \quad (3)$$

$$Response_{it} = \alpha + \beta_0 M_{it} + \beta_1 Controls + \sum Industry + \sum year + \varepsilon_{it} \quad (4)$$

Here, M represents the mechanism variable, with all other variables consistent with the baseline model.

6.1. Regulatory sanction risk mechanism

Regulatory sanction risk (*Violation*) is defined following Liao and Su (2021), taking the value of 1 if the listed company receives a penalty announcement in that year, and 0 otherwise. In the first stage of the regression, as shown in Columns (1) and (4) of Table 15, the coefficients of the voluntary resignation of independent directors are 0.094 and 0.046, respectively, both of which are significant at the 1 % level. This indicates that the voluntary resignation of a listed company's independent directors signals to the outside world that the company has a higher risk of regulatory penalties than its counterparts not experiencing such resignation events. As a result, the probability of being penalized in the following year increases for companies with voluntary resignations by independent directors. The second-stage regression results are presented in Columns (2), (3), (5) and (6) of Table 15. The estimated coefficients of M are all positive and significant, suggesting that the signal of higher regulatory penalty risk conveyed by the voluntary resignation of independent directors increases the litigation risk perceived by auditors. This affects auditors' risk perception and in turn leads to increased audit fees and a heightened likelihood of a change in audit firms.

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Table 13
Alternative dependent variable.

	(1)	(2)
Variable	*ARL*	*LNFEE*
INResign	–0.024	0.031**
	(–1.620)	(2.290)
Size	0.004	0.339***
	(1.310)	(49.318)
Lev	–0.005	0.217***
	(–0.241)	(5.876)
ROA	–0.230***	–0.625***
	(–3.488)	(–8.055)
Age	0.049***	–0.005
	(12.555)	(–0.765)
Growth	0.035***	0.010
	(3.256)	(0.940)
Indep	0.040	0.143
	(0.525)	(1.064)
Board	–0.023	0.001
	(–1.030)	(0.032)
Loss	0.037**	0.066***
	(2.355)	(4.150)
Big4	–0.044***	0.570***
	(–2.979)	(19.549)
Dual	0.019***	0.036***
	(2.586)	(3.370)
Cons	0.269***	6.241***
	(3.065)	(36.143)
Year	Yes	Yes
Industry	Yes	Yes
N	14,887	14,887
F	31.882	567.441
Adj-R^2	0.106	0.629

6.2. Negative media coverage mechanism

Following Wu and Ye (2020), we measure negative media coverage (*NMedia*) as the natural logarithm of the number of negative news articles about each company per year. A higher value of *NMedia* indicates that there is a larger volume of negative media coverage of the listed company. The regression results are shown in Table 16. In the first stage, as shown in Columns (3) and (4) of Table 16, the regression coefficients of the voluntary resignation of independent directors are 0.065 and 0.037, respectively, significant at the 1 % and 10 % levels. This indicates that companies experiencing voluntary resignations by independent directors receive more negative media coverage than do companies not experiencing such resignations. The second-stage regression results presented in Columns (2), (3), (5) and (6) of Table 16 show that the estimated coefficients of *NMedia* are all positive and significant. This suggests that the increase in negative media reporting triggered by the voluntary resignation of independent directors affects auditors' risk perception. Auditors respond by charging higher audit fees to account for the increased risk and may terminate their audit engagement with client companies as a risk avoidance strategy.

7. Further analysis

7.1. The effect of the new securities law

Based on the theory of audit risk elements, the implementation of the New Securities Law increased the legal responsibilities of listed companies, making the external regulatory environment more stringent and

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Table 14
Auditor responses in the subsequent period.

	(1)	(2)	(3)
Variable	*FLnAlag*	*FABFEE*	*FChange*
INResign	0.008	0.026**	0.204**
	(1.619)	(1.967)	(2.092)
Size	0.003	0.004	–0.051*
	(1.262)	(0.682)	(–1.701)
Lev	0.031**	0.020	0.338*
	(2.527)	(0.574)	(1.945)
ROA	–0.165***	–0.556***	–1.571***
	(–5.768)	(–7.532)	(–3.354)
Age	–0.014***	–0.020***	0.121***
	(–5.845)	(–3.115)	(3.247)
Growth	–0.013***	0.023**	0.137*
	(–3.353)	(2.287)	(1.728)
Indep	–0.022	0.119	0.911
	(–0.535)	(0.913)	(1.493)
Board	–0.021*	–0.001	0.026
	(–1.687)	(–0.017)	(0.144)
Loss	0.015**	0.066***	0.319***
	(2.535)	(4.329)	(2.946)
Big4	–0.078***	–0.035	–0.276*
	(–8.581)	(–1.309)	(–1.958)
Dual	0.015***	0.036***	–0.122*
	(3.937)	(3.387)	(–1.906)
Cons	4.664***	–0.109	–3.355***
	(89.205)	(–0.659)	(–3.552)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	14,672	14,672	14,672
F/chi2	28.669	23.271	13,270.873
Adj-R^2/Pseudo R^2	0.060	0.031	0.049

Note: The reduction in sample size is due to the presence of missing values for the following variables in the $t + 1$ period: audit effort (*FLnAlag*), abnormal audit fees (*FABFEE*) and auditor change (*FChange*).

raising inherent risk. The resignation of independent directors to avoid risks reduces the independence of the board, lowers the quality of corporate internal control and increases the likelihood that the listed company will be penalized for violations (Beasley, 1996). It may also attract more media attention to the company and thus lead to an increase in the publication of negative news related to the company, drawing the attention of regulatory authorities and in turn increasing the possibility of audit failure (Wu and Ye, 2020). Based on the above analysis, since the implementation of the New Securities Law, the risk perception of auditors has increased significantly and auditors have become more sensitive to the voluntary resignation of independent directors.

To explore the changes in the impact of the voluntary resignation of independent directors on the responses of auditors before and after the implementation of the New Securities Law, we construct the following model:

$$Response_{it} = \alpha + \beta_0 INResign_{it} + \beta_1 INResign_{it} \times Policy_{it} + \beta_2 Controls_{it} + \sum Industry + \sum year + \varepsilon_{it} \quad (5)$$

In Model (5), the variable indicating the implementation of the New Securities Law (*Policy*) is a dummy variable measured as 1 for years after 2020 (because the promulgation date of the New Securities Law was 1 March 2020), and 0 otherwise. As Model (5) includes time fixed effects, the *Policy* variable is not added separately to the model. The regression results are shown in Table 17.

Column (1) of Table 17 presents the results of regressing the interaction term between the voluntary resignation of independent directors (*INResign*) and the implementation of the New Securities Law (*Policy*)

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Table 15
Regulatory sanction risk mechanism.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	*Violation*	*ABFEE*	*Change*	*FViolation*	*FABFEE*	*FChange*
INResign	0.094***			0.046***		
	(7.213)			(3.739)		
$\widehat{Violation}$		0.304**	3.971***			
		(2.180)	(3.910)			
$\widehat{FViolation}$					0.531*	4.495**
					(1.864)	(2.140)
Size	–0.024***	0.006	0.001	–0.015***	0.011	0.016
	(–6.880)	(0.752)	(0.030)	(–4.129)	(1.478)	(0.369)
Lev	0.174***	0.002	–0.209	0.148***	–0.056	–0.329
	(7.311)	(0.053)	(–0.838)	(6.242)	(–1.019)	(–0.912)
ROA	–0.499***	–0.027	0.658	–0.482***	–0.298*	0.529
	(–7.889)	(–0.263)	(0.948)	(–7.106)	(–1.923)	(0.470)
Age	0.042***	–0.015*	–0.069	0.020***	–0.029***	0.040
	(12.387)	(–1.669)	(–1.228)	(5.720)	(–3.404)	(0.692)
Growth	–0.006	0.008	0.304***	–0.003	0.023**	0.126
	(–0.679)	(0.756)	(4.212)	(–0.352)	(2.289)	(1.609)
Indep	–0.050	0.144	0.610	–0.027	0.131	1.007*
	(–0.696)	(1.114)	(0.937)	(–0.356)	(1.006)	(1.659)
Board	–0.064***	0.019	0.120	–0.072***	0.036	0.310
	(–3.112)	(0.490)	(0.587)	(–3.326)	(0.812)	(1.346)
Loss	0.067***	–0.041**	0.001	0.156***	–0.018	–0.396
	(4.753)	(–2.299)	(0.007)	(10.241)	(–0.389)	(–1.138)
Big4	–0.021*	–0.037	0.180	–0.032***	–0.009	–0.117
	(–1.895)	(–1.372)	(1.387)	(–2.780)	(–0.311)	(–0.745)
Dual	0.012*	0.031***	–0.147**	0.009	0.032***	–0.174***
	(1.808)	(2.941)	(–2.260)	(1.260)	(2.899)	(–2.630)
Cons	0.673***	–0.235	–4.337***	0.522***	–0.366	–5.655***
	(8.088)	(–1.229)	(–3.491)	(6.134)	(–1.643)	(–3.992)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	14,887	14,887	14,887	14,848	14,654	14,713
F/chi2	81.573	3.141	5,768.482	73.585	23.106	13,367.595
Adj-R^2/Pseudo R^2	0.095	0.005	0.049	0.104	0.031	0.050

Note: The change in sample size is due to the presence of missing values for the future period's regulatory penalty variable (*FViolation*).

(hereinafter "the interaction term") on audit effort. The results indicate that the regression coefficient of the interaction term (*INResign* × *Policy*) on audit effort (*LnAlag*) is negative, but it does not pass the significance test. Thus, there is no evidence that the positive relationship between the voluntary resignation of independent directors of listed companies and audit effort is significantly stronger after the implementation of the New Securities Law. Next, the regression results in Column (2) of Table 17 show that the regression coefficient of the interaction term (*INResign* × *Policy*) is 0.045 and significant at the 10 % level. This indicates that the implementation of the New Securities Law had a deterrent effect on auditors, increasing their sensitivity to risk and heightening their attention to the risk signals conveyed by the voluntary resignation of independent directors of client companies. This in turn increased auditors' risk perception and led them to charge higher audit fees to compensate for increased risk. Column (3) of Table 17 shows that the regression coefficient of the interaction term (*INResign* × *Policy*) is 0.104, but it is not statistically significant. Therefore, there is no evidence to indicate that the positive relationship between the voluntary resignation of independent directors in listed companies and the change in audit firms has become significantly stronger since the implementation of the New Securities Law. This lack of significance might be attributable to the intensified competition in the audit industry caused by the New Securities Law, which could have made audit firms more reluctant to terminate their engagements with client companies.

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Table 16
Negative media coverage mechanism.

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	*NMedia*	*ABFEE*	*Change*	*FNMedia*	*FABFEE*	*FChange*
INResign	0.065***			0.037*		
	(2.784)			(1.674)		
$\widehat{NMedia}$		0.440**	5.745***			
		(2.180)	(3.910)			
$\widehat{FNMedia}$					0.660*	5.581**
					(1.864)	(2.140)
Size	0.267***	–0.119**	–1.630***	0.261***	–0.168*	–1.504**
	(22.492)	(–2.196)	(–4.157)	(22.621)	(–1.819)	(–2.216)
Lev	0.120**	0.002	–0.208	0.050	–0.011	0.056
	(2.050)	(0.055)	(–0.835)	(0.902)	(–0.277)	(0.253)
ROA	0.177	–0.256***	–2.341***	0.262**	–0.727***	–3.100***
	(1.336)	(–3.094)	(–4.486)	(2.058)	(–6.088)	(–3.814)
Age	–0.161***	0.069**	1.024***	–0.140***	0.074	0.911**
	(–13.204)	(2.101)	(4.282)	(–11.852)	(1.481)	(2.491)
Growth	0.003	0.005	0.265***	0.003	0.020*	0.096
	(0.152)	(0.460)	(3.698)	(0.179)	(1.937)	(1.221)
Indep	1.233***	–0.414	–6.674***	1.096***	–0.606	–5.233*
	(5.408)	(–1.509)	(–3.524)	(4.981)	(–1.496)	(–1.774)
Board	0.183***	–0.081	–1.186***	0.207***	–0.139*	–1.166**
	(2.694)	(–1.548)	(–3.567)	(3.179)	(–1.682)	(–2.026)
Loss	0.325***	–0.164**	–1.601***	0.338***	–0.159	–1.583*
	(11.069)	(–2.430)	(–3.258)	(11.975)	(–1.313)	(–1.775)
Big4	0.412***	–0.225***	–2.270***	0.380***	–0.276**	–2.381**
	(6.759)	(–2.587)	(–3.689)	(6.437)	(–2.028)	(–2.380)
Dual	0.083***	–0.002	–0.575***	0.093***	–0.025	–0.654***
	(4.319)	(–0.077)	(–4.219)	(5.030)	(–0.725)	(–2.591)
Cons	–3.694***	1.595**	19.561***	–3.591***	2.281*	16.736*
	(–12.062)	(2.104)	(3.586)	(–12.214)	(1.782)	(1.771)
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	14,703	14,887	14,887	14,701	14,654	14,713
F/chi2	88.639	3.141	5,768.483	86.875	23.106	13,367.590
Adj-R^2/Pseudo R^2	0.244	0.005	0.049	0.249	0.031	0.050

Note: The change in sample size is due to missing values for the negative media coverage mechanism variables (*NMedia* and *FNMedia*).

7.2. Priority order of auditor responses

Referring to Krishnan et al. (2013), we test the order of response choices made by auditors in response to the voluntary resignation of independent directors by constructing an ordered logit model.

$$Order_{it} = \alpha + \beta_0 INResign_{it} + \beta_1 Controls + \sum Industry + \sum year + \varepsilon_{it} \quad (6)$$

In Model (6), the dependent variable *Order* represents the priority order of auditor responses. It is measured such that if the listed company experiences a change in its audit firm, it takes the value of 2; if there is no change in the audit firm but the auditor charges higher abnormal audit fees (above the annual median of abnormal audit fees), it takes the value of 1; if there is neither a change in the firm nor an increase in abnormal audit fees, it takes the value of 0.

Table 18 illustrates the sequence of auditors' responses to the voluntary resignation of independent directors. The regression results in Column (1) indicate that the voluntary resignation of independent directors (*INResign*) is significantly and positively correlated with *Order*, suggesting that auditors follow an order of priority in responding to the risk signals conveyed by the voluntary resignation of independent directors. When responding to the risks indicated by the voluntary resignation of independent directors, auditors will first consider increasing audit fees to take on the risk; however, when the perceived risk exceeds a level

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Table 17
The effect of the New Securities Law.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
INResign	0.005	0.004	0.323**
	(0.654)	(0.183)	(2.430)
INResign × *Policy*	–0.000	0.045*	0.104
	(–0.046)	(1.813)	(0.555)
Size	0.006***	–0.002	–0.095***
	(2.605)	(–0.265)	(–3.310)
Lev	0.013	0.055	0.482***
	(1.095)	(1.550)	(2.811)
ROA	–0.303***	–0.178**	–1.323***
	(–10.895)	(–2.391)	(–2.878)
Age	–0.015***	–0.002	0.096***
	(–6.376)	(–0.320)	(2.644)
Growth	–0.023***	0.006	0.280***
	(–4.779)	(0.583)	(3.912)
Indep	0.019	0.127	0.409
	(0.459)	(0.990)	(0.633)
Board	–0.011	0.000	–0.134
	(–0.895)	(0.000)	(–0.689)
Loss	0.035***	–0.020	0.268**
	(6.247)	(–1.337)	(2.497)
Big4	–0.073***	–0.044	0.095
	(–7.888)	(–1.634)	(0.747)
Dual	0.013***	0.035***	–0.099
	(3.186)	(3.325)	(–1.534)
Cons	4.564***	–0.031	–1.672*
	(86.691)	(–0.192)	(–1.683)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	14,887	14,887	14,887
F/chi^2	73.765	3.155	5,761.159
Adj-R^2*/Pseudo R*^{2}	0.097	0.005	0.049

acceptable to the auditor, the contractual relationship between the auditor and the listed company becomes more unstable and the likelihood of a change in audit firms increases.

7.3. Multiple consecutive years of voluntary resignations by independent directors and auditor responses

We construct Model (7) to further explore changes in auditor responses when companies experience consecutive years of voluntary resignations by independent directors.

$$Response_{it} = \alpha + \beta_0 Over1_{it} + \beta_1 Over2_{it} + \beta_2 Controls_{it} + \sum Industry + \sum year + \varepsilon_{it} \quad (7)$$

Over1 represents a dummy variable that takes the value of 1 if the company experiences the voluntary resignation of independent directors in one consecutive year, and 0 otherwise. *Over2* represents a dummy variable that takes the value of 1 if the company experiences such events in two or more consecutive years, and 0 otherwise. The regression results are presented in Table 19.

As shown in Column (1) of Table 19, the regression results reveal positive coefficients of both *Over1* and *Over2* (0.010 and 0.048), which are significant at the 5 % and 1 % levels, respectively. The coefficient of *Over2* is greater than that of *Over1*, suggesting that auditors invest more effort in auditing companies with (vs. without) multiple consecutive years of voluntary resignations. The regression results in Column (2) of Table 19 show that while *Over1*'s coefficient (0.020) is not statistically significant, *Over2*'s coefficient (0.105) is positive and significant at the 5 % level, indicating that auditors charge higher audit fees for companies with (vs. with-

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Table 18
Priority order of auditor responses.

	(1)
Variable	*Order*
INResign	0.173***
	(2.691)
Size	–0.017
	(–0.707)
Lev	0.130
	(0.923)
ROA	–0.900***
	(–2.669)
Age	–0.004
	(–0.167)
Growth	–0.018
	(–0.414)
Indep	0.594
	(1.143)
Board	–0.088
	(–0.579)
Loss	–0.000
	(–0.005)
Big4	0.013
	(0.115)
Dual	0.057
	(1.193)
Year	Yes
Industry	Yes
N	14,887
Chi^2	972.500
Pseudo R^2	0.006

out) multiple consecutive years of voluntary resignations. Column (3) of Table 19 shows positive and significant coefficients for both *Over1* and *Over2* at the 1 % level (0.332 and 0.447, respectively), with *Over2*′s coefficient being greater than that of *Over1*. This indicates that companies with (vs. without) multiple consecutive years of voluntary resignations by independent directors are more likely to experience a change in their audit firms. In summary, companies with multiple consecutive years of voluntary resignations by independent directors, compared with their counterparts without such resignations, convey stronger risk signals to auditors, which significantly impact auditors' response behavior.

7.4. Mandatory resignation of independent directors and auditor responses

To further determine whether the impact of the voluntary resignation of independent directors on auditor responses is due to the risk signals conveyed to external stakeholders, rather than merely because auditors see the impact of resignation events on market perception and respond accordingly, we re-estimate Model (2) by introducing a variable measuring the mandatory resignation of independent directors (*PasResign*). *PasResign* takes the value of 1 for listed companies experiencing the mandatory resignation of independent directors (that is, excluding the sample of voluntary resignations), and 0 otherwise. The regression results are presented in Table 20. We observe that the coefficients of mandatory resignation (*PasResign*) on *LnAlag*, *ABFEE* and *Change* are nonsignificant, showing that the mandatory resignation of independent directors does not significantly affect auditor responses. In other words, only voluntary resignation, not mandatory resignation, conveys risk signals to auditors and influences their behavior.

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Table 19
Consecutive resignations and auditor responses.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
Over1	0.010**	0.020	0.332***
	(1.994)	(1.415)	(5.208)
Over2	0.048***	0.105**	0.447***
	(5.151)	(2.481)	(2.988)
Size	0.006***	–0.001	–0.086***
	(2.915)	(–0.083)	(–2.982)
Lev	0.011	0.051	0.457***
	(0.881)	(1.443)	(2.675)
ROA	–0.296***	–0.167**	–1.264***
	(–10.608)	(–2.245)	(–2.738)
Age	–0.016***	–0.003	0.085**
	(–6.607)	(–0.481)	(2.343)
Growth	–0.024***	0.005	0.274***
	(–4.843)	(0.514)	(3.832)
Indep	0.015	0.119	0.312
	(0.360)	(0.930)	(0.481)
Board	–0.013	–0.003	–0.169
	(–1.015)	(–0.074)	(–0.870)
Loss	0.034***	–0.023	0.260**
	(6.080)	(–1.496)	(2.422)
Big4	–0.073***	–0.043	0.102
	(–7.868)	(–1.608)	(0.795)
Dual	0.013***	0.035***	–0.096
	(3.224)	(3.344)	(–1.501)
Cons	4.552***	–0.050	–1.714*
	(86.495)	(–0.305)	(–1.733)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	14,887	14,887	14,887
F/chi^2	76.315	3.129	5,755.401
Adj-R^2*/Pseudo R*^{2}	0.099	0.007	0.051

8. Heterogeneity analysis

8.1. Voluntary resignation of independent directors, auditors' industry expertise and auditor responses

Auditors with industry expertise, compared with their counterparts without such expertise, have stronger professional skills and are better able to uncover financial irregularities and illegal activities within client companies. Therefore, audits of financial statements conducted by auditors with industry expertise can lead to higher-quality accounting information (Fan et al., 2013), reduce information asymmetry and mitigate the negative signaling effect of the voluntary resignation of independent directors, thereby lowering the risk perceived by auditors. This may in turn reduce the positive impact of the voluntary resignation of independent directors on abnormal audit fees and the likelihood of a change in audit firms. Conversely, when auditors lack industry expertise, their relatively weak professional skills may make them more sensitive to the negative signals conveyed by independent directors' resignation, leading to a higher risk premium and a greater likelihood that auditors will abandon their clients. This increases the likelihood of higher audit fees and a change in audit firms. Accordingly, we posit that the positive effect of the voluntary resignation of independent directors on abnormal audit fees and the likelihood of audit firm change is more pronounced when auditors possess industry expertise than when they do not possess such expertise.

Following Fan et al. (2013), we use the industry portfolio share method to measure auditors' industry expertise. The sample is divided into groups with and without industry expertise based on the annual median

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Table 20
Mandatory resignation and auditor responses.

	(1)	(2)	(3)
Variable	*LnAlag*	*ABFEE*	*Change*
PasResign	0.006	–0.025	0.235
	(0.579)	(–1.159)	(1.385)
Size	0.006***	0.003	–0.091***
	(2.600)	(0.437)	(–2.941)
Lev	0.011	0.044	0.410**
	(0.886)	(1.213)	(2.251)
ROA	–0.314***	–0.171**	–1.416***
	(–10.174)	(–2.184)	(–2.881)
Age	–0.016***	–0.003	0.086**
	(–6.439)	(–0.549)	(2.247)
Growth	–0.025***	0.011	0.251***
	(–4.741)	(1.062)	(3.227)
Indep	0.020	0.149	0.255
	(0.475)	(1.127)	(0.374)
Board	–0.010	0.007	–0.110
	(–0.765)	(0.173)	(–0.536)
Loss	0.034***	–0.017	0.283**
	(5.800)	(–1.085)	(2.509)
Big4	–0.074***	–0.043	0.036
	(–8.055)	(–1.576)	(0.268)
Dual	0.013***	0.036***	–0.124*
	(3.242)	(3.337)	(–1.820)
Cons	4.557***	–0.151	–1.605
	(82.442)	(–0.909)	(–1.536)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
N	13,814	13,814	13,814
F/chi^2	69.491	2.550	5,311.446
Adj-R^2*/Pseudo R*^{2}	0.093	0.004	0.049

within the industry. The regression results in Table 21 show that for the group with industry expertise, the coefficients of the voluntary resignation of independent directors (*INResign*) are nonsignificant. However, for the group without industry expertise, the coefficients of the voluntary resignation of independent directors (*INResign*) are significant and positive. This indicates that the positive influence of the voluntary resignation of independent directors on abnormal audit fees and the likelihood of changes in audit firms is more pronounced in the group without industry expertise, corroborating the aforementioned analysis.

8.2. Voluntary resignation of independent directors, the legal environment and auditor responses

Perceived risk is a major reason for independent directors to voluntarily resign (Tang and Luo, 2007). When listed companies are in a weaker legal environment, i.e., an environment with lower legal standards, they face less regulatory pressure and a lower likelihood of regulatory penalties. Therefore, the independent directors of these companies may perceive less corporate risk, reducing the likelihood of their voluntary resignation. If, under such circumstances, an independent director does resign voluntarily, stakeholders (especially auditors) receive a stronger signal that the listed company faces a high risk of regulatory penalties. This can lead to a higher risk premium for auditors, thereby increasing audit fees and the probability of a change in audit firms. From this perspective, the positive effects of voluntary resignation on abnormal audit fees and accounting firm changes may be more pronounced when legal standards are lower. In addition, regulatory risk can increase audit fees and lead to changes in audit firms (Liu and Zhou, 2007; Cai and Zhang, 2022). When listed companies are in a stronger legal environment, i.e., an environment with higher legal standards, the voluntary resignation of independent directors is more likely to attract the attention of

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Table 21
Auditors' industry expertise.

Variable	(1) *With Expertise ABFEE*	(2) *Without Expertise ABFEE*	(5) *With Expertise Change*	(6) *Without Expertise Change*
INResign	0.009	0.049***	0.189	0.440***
	(0.477)	(2.822)	(1.111)	(3.840)
Size	0.015*	–0.020**	–0.026	–0.113***
	(1.670)	(–2.329)	(–0.545)	(–3.059)
Lev	0.031	0.071	0.131	0.571***
	(0.620)	(1.590)	(0.449)	(2.700)
ROA	–0.134	–0.214**	–1.489*	–1.093*
	(–1.142)	(–2.301)	(–1.865)	(–1.931)
Age	–0.008	0.009	0.184***	0.007
	(–0.913)	(1.108)	(2.873)	(0.162)
Growth	–0.010	0.014	0.473***	0.172*
	(–0.634)	(1.107)	(4.179)	(1.917)
Indep	–0.014	0.245	0.412	0.594
	(–0.073)	(1.547)	(0.384)	(0.716)
Board	–0.016	0.010	0.076	–0.203
	(–0.275)	(0.206)	(0.232)	(–0.853)
Loss	–0.017	–0.022	0.188	0.308**
	(–0.751)	(–1.104)	(1.018)	(2.302)
Big4	–0.038	–0.009	–0.309	0.062
	(–0.603)	(–0.310)	(–0.946)	(0.446)
Dual	0.027*	0.039***	–0.289***	0.015
	(1.832)	(2.810)	(–2.697)	(0.185)
Cons	–0.271	0.241	–3.173**	–0.191
	(–1.143)	(1.194)	(–2.317)	(–0.166)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	6,944	7,943	6,899	7,943
F/chi2	0.968	4.043	336.692	3,148.367
Adj-R^2/Pseudo R^2	0.006	0.015	0.076	0.043
P-value		0.040**		0.062*

Note: P-values indicate the significance of the difference in the estimated coefficients of the voluntary resignation of independent directors (*INResign*) between groups, obtained through 1,000 bootstrap replications, as below.

the government and regulatory bodies, increasing the regulatory pressure faced by auditors. This in turn can lead to higher audit fees and a greater probability of changes in audit firms.

Based on this, we examine how the legal environment affects auditors' responses to the voluntary resignation of independent directors through grouped regression analysis. Following Tian and Wang (2019), we use the Development of Market Intermediary Organizations and Legal Environment indices from the marketization index system compiled by Fan et al. (2011) to divide the sample into groups with stronger and weaker legal and institutional environments, based on the median value of the Legal Environment index for each region annually. Columns (1) and (2) of Table 22 show that for the group with a weaker legal environment, the coefficient of the voluntary resignation of independent directors (*INResign*) is positive and significant, while for the group with a stronger legal environment, the coefficient of *INResign* is statistically nonsignificant. This indicates that the positive impact of the voluntary resignation of independent directors on abnormal audit fees is more pronounced in the group with a weaker legal environment, suggesting that auditors are more sensitive to the voluntary resignation of independent directors when the listed companies involved are in a weaker legal environment. However, the regression results in Columns (3) to (4) of Table 22 show empirically that the P-value used to test the difference between the coefficients of the voluntary resignation of independent directors (*INResign*) between groups is nonsignificant. This indicates that there is no significant difference in the positive correlation between the voluntary resignation of independent directors (*INResign*) and auditor change (*Change*) between the groups with different legal environments.

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Table 22
Impact of legal environment.

Variable	(1) Stronger Legal Environment *ABFEE*	(2) Weaker Legal Environment *ABFEE*	(3) Stronger Legal Environment *Change*	(4) Weaker Legal Environment *Change*
INResign	0.015	0.079**	0.379***	0.378*
	(1.084)	(2.454)	(3.578)	(1.730)
Size	0.006	–0.046***	–0.121***	0.017
	(0.824)	(–3.202)	(–3.778)	(0.267)
Lev	0.096**	–0.025	0.444**	0.434
	(2.529)	(–0.320)	(2.323)	(1.065)
ROA	–0.124	–0.397**	–1.226**	–1.965*
	(–1.514)	(–2.307)	(–2.398)	(–1.806)
Age	0.004	–0.008	0.125***	–0.027
	(0.570)	(–0.532)	(3.120)	(–0.295)
Growth	–0.007	0.059***	0.299***	0.200
	(–0.633)	(2.912)	(3.697)	(1.203)
Indep	0.083	0.705**	0.342	0.369
	(0.598)	(2.397)	(0.483)	(0.232)
Board	0.002	0.137*	–0.117	–0.267
	(0.055)	(1.793)	(–0.548)	(–0.563)
Loss	–0.017	–0.040	0.365***	–0.079
	(–1.026)	(–1.180)	(3.055)	(–0.314)
Big4	–0.074***	0.044	0.149	–0.098
	(–2.657)	(0.531)	(1.098)	(–0.255)
Dual	0.029***	0.037	–0.069	–0.340*
	(2.667)	(1.220)	(–0.996)	(–1.756)
Cons	–0.194	0.389	–1.114	–2.566
	(–1.085)	(1.088)	(–1.047)	(–1.426)
Year	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes
N	12,476	2,391	12,476	2362
F/chi²	3.247	4.616	4,883.218	99.112
Adj-R²/Pseudo R²	0.009	0.062	0.051	0.060
P-value		0.052*		0.405

9. Conclusion

This paper presents an in-depth exploration of auditors' responses to the voluntary resignation of independent directors. The findings reveal that the voluntary resignation of independent directors of a listed company transmits risk signals to auditors that elevate their perception of the risk associated with that company. In response, auditors seek to mitigate this risk by charging higher audit fees or terminating their engagement with the client company. Interestingly, we find no evidence that auditors also increase their audit effort following the voluntary resignation of independent directors, indicating that the higher audit fees charged are due primarily to an increased risk premium, rather than to cost compensation. Mechanism analysis indicates that companies with voluntary resignations by independent directors face an increased risk of regulatory penalties in both the current and subsequent periods, and such companies also receive more negative media coverage.

Further analysis reveals that since the implementation of the New Securities Law, the positive relationship between the voluntary resignation of independent directors and abnormal audit fees has become more pronounced. This suggests that the new law has a deterrent effect on auditors, increasing their perception of risk and leading them to raise audit fees. Moreover, we discover that auditors follow an order of priority in responding to the risk signals conveyed by the voluntary resignation of independent directors: when they perceive the level of corporate risk to be acceptable, they prefer to increase audit fees, but when the risk exceeds their tolerance level, they are likely to terminate the engagement, leading to an auditor change.

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Additionally, our results show that auditors exhibit a heightened perception of risk for companies with (vs. without) multiple consecutive years of voluntary resignations by independent directors. We find no evidence that the mandatory resignation of independent directors significantly affects auditors' responses. Our heterogeneity analyses reveal that when auditors have a lower level of expertise and the legal and institutional environment is less robust, the voluntary resignation of independent directors has more pronounced positive effects on abnormal audit fees and the likelihood of auditor change.

The conclusions of this paper offer insights for regulators, auditors and listed companies. First, regulators should be aware that although China's New Securities Law has a certain deterrent effect on auditors, this does not translate into increased audit effort or improved audit quality. Therefore, the government should introduce further policies to urge auditors to perform effective risk assessment of listed companies and enhance their audit quality.

Second, auditors should pay close attention to listed companies whose independent directors have voluntarily resigned and make a full assessment of the risks and potential benefits associated with auditing them. Auditors should increase their audit effort to reduce audit risk and capture audit market share by providing high-quality audit services.

Third, listed companies should be aware that voluntary resignation by independent directors increases a company's administrative costs. Management can reduce the risk perceived by independent directors and minimize the likelihood of their resignation by purchasing director and officer liability insurance, which will allow independent directors to better fulfill their supervisory, consultative and resource support roles.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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