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Audit partner quality and stock price crash risk: evidence from an emerging market with dual-signature audits

Javad Rajabalizadeh
Department of Accounting and Finance, Turku School of Economics, University of Turku, Finland, and

Mostafa Ghannad
Department of Accounting, Eqbal Lahoori Institute of Higher Education, Mashhad, Iran

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Abstract

Purpose – This study aims to examine the impact of audit partners' quality on stock price crash risk in Iran, with particular focus on how agency costs, state ownership and audit firm size moderate this relationship. Iran's unique dual-signature audit system and the absence of Big 4 firms provide an exceptional setting to explore the role of individual audit partners in an emerging market. The authors hypothesize that higher audit partner quality reduces crash risk, with lead partners having a stronger influence than review partners due to their primary role in decision-making.

Design/methodology/approach – Using 2,898 firm-year observations from Tehran Stock Exchange-listed companies (2011–2024), audit partner quality is proxied by audit failure rates for lead and review partners. Panel regressions with fixed effects and interaction terms assess the association between partner quality and crash risk, accounting for unobserved heterogeneity.

Findings – Results show that higher-quality partners significantly reduce crash risk, with lead partners exerting stronger influence than review partners. The effect is more pronounced in firms with higher agency costs, lower state ownership concentration and audits conducted by larger domestic firms. The findings remain consistent when alternative proxies of audit quality – discretionary accruals and audit report modifications – are used. In addition, endogeneity controlled by firm fixed effects and two-stage least squares supports the main findings.

Originality/value – To the best of the authors' knowledge, this study is the first to provide evidence from Iran regarding the role of individual audit partner quality in mitigating stock price crash risk. The dual-signature audit system and the absence of Big 4 firms make Iran a unique setting for studying partner-level audit quality. The study contributes to the global discussion on individual auditor accountability and financial market stability, particularly in emerging economies where institutional contexts differ significantly from those in developed markets.

Keywords Audit partner quality, Stock price crash risk, Lead partner, Review partner, Emerging market

Paper type Research paper

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1. Introduction

While the relationship between high-quality audit firms and favorable capital market outcomes is well-established (Francis, 2011; Francis and Yu, 2009), the role of individual audit partners in this relationship remains less explored, particularly in unique regulatory contexts such as Iran. Recently, global reforms have aimed to increase transparency around audit partners, emphasizing their role in enhancing audit quality and, by extension, capital market outcomes. For example, the USA. PCAOB now mandates the disclosure of engagement partners through Form AP (Public Company Accounting Oversight Board, 2015), while the EU's 2014 Audit Regulation requires the identification of key audit partners (Quick and Schmidt, 2018). Similar reforms have been implemented across Asia, including in China, Singapore and Taiwan, where signing partner disclosure has been made mandatory (Chen *et al.*, 2010; Chi *et al.*, 2011).

Despite these global efforts, evidence on the influence of individual auditors remains limited. Our study addresses this gap by focusing on Iran, a country with a unique regulatory and institutional context. Iran's fragmented audit market, characterized by the absence of Big 4 dominance and the requirement for dual signatures on audit reports, provides a rare opportunity to study the effect of individual audit partners. Unlike many Western markets where firm-level reputation often overshadows individual partner quality, the Iranian system requires both a lead partner and a review partner to sign audit reports (Rajabalizadeh and Schadewitz, 2025a). This dual-signature framework offers a distinctive setting for investigating how the qualities of individual auditors influence stock price crash risk.

Prior research in markets such as China and Sweden has shown that partner-level differences – such as auditor "styles" and historical track records – significantly shape audit quality and market outcomes (Gul *et al.*, 2013; Zerni, 2012). However, less is known about how these differences translate into capital market consequences, particularly in emerging economies. This study contributes to the literature by demonstrating that the impact of individual auditors on market outcomes is not limited to developed markets but is also a robust phenomenon in emerging economies like Iran, where audit outcomes are more heavily influenced by individual partner characteristics than by the reputation of large audit firms. Iran's unique institutional environment, shaped by privatization, state ownership and limited media oversight (Bagherpour *et al.*, 2014; Mirshekary and Saudagaran, 2005), further amplifies the importance of auditors' competence in ensuring financial transparency and mitigating stock price crash risk. Further details are discussed in Section 2.

This study identifies individual audit partners through audit reports and professional websites, constructing the main variable – audit partner quality – along with controls like gender, experience, workload and client importance. Audit partner quality, measured as the audit failure rate (Wang *et al.*, 2015; MohammadRezaei *et al.*, 2021) and stock price crash risk, proxied by negative skewness of firm-specific returns (Kim *et al.*, 2011a, 2011b; Hutton *et al.*, 2009; Robin and Zhang, 2015; Callen *et al.*, 2020), are analyzed. Regression results show a significant negative relationship, with a stronger effect for lead partners, supporting both main hypotheses. Specifically, our evidence shows that lead partner quality has a stronger influence on crash risk, reflecting their primary role in audit planning, execution and interaction with management. Review partners add oversight but cannot fully offset a low-quality lead partner, consistent with prior findings (Wang *et al.*, 2015). This role differentiation underscores that audit quality is not evenly produced within the team – the lead partner's expertise is pivotal. Such insight aligns with regulatory moves to disclose or monitor engagement partners (Defond and Lennox, 2017).

The primary findings are reinforced by several additional analyses. First, consistent with DeAngelo (1981) and Wang *et al.* (2020), audit partner quality more strongly reduces crash

risk in firms with high agency costs. Second, the effect is stronger in low-concentration SOEs, suggesting that governance structures influence audit effectiveness. Third, following Callen *et al.* (2020), partners from larger audit firms show a stronger crash risk reduction, highlighting the role of firm-level support. Furthermore, the results remain robust when using alternative proxies of audit quality – discretionary accruals and audit report modifications – confirming the consistency of the main findings. Finally, the conclusions hold under alternative model specifications, fixed effects estimations and two-stage least squares (2SLS) instrumental variable tests addressing potential endogeneity concerns.

This study makes several contributions to the auditing and corporate governance literature. First, it extends stock price crash risk research by focusing on audit partner quality and distinguishing the roles of lead and review partners within Iran's dual-signature system (Rajabalizadeh and Schadewitz, 2025a). From a role theory perspective, this highlights how differentiated responsibilities between engagement and review partners translate into different market consequences. Second, it fills a gap by showing how partner-level attributes, often overlooked compared to factors like analyst coverage (Xu *et al.*, 2013), CSR (Kim *et al.*, 2014; Lee *et al.*, 2019b) and internal controls (Chen *et al.*, 2017; Kim *et al.*, 2019), influence audit outcomes. In doing so, it contributes to the emerging behavioral auditing literature, which emphasizes that individual auditors' skills, ethics and behavioral styles can shape financial reporting outcomes.

Third, it offers evidence from an emerging, fragmented audit market (Azizkhani *et al.*, 2022; MohammadRezaei *et al.*, 2016). Iran's absence of Big 4 firms and mandatory dual-partner audit structure provide a rare natural laboratory where auditor-specific effects can be isolated without the confounding influence of global firm reputations. This unique context allows us to disentangle partner quality from firm-level brand credibility, offering insights into the micro-level drivers of audit quality that are often masked in USA and European settings. Finally, by integrating ownership structure, it highlights how partner quality addresses agency problems in state-controlled or concentrated firms (Mirshekary and Saudagaran, 2005). Consistent with agency theory (Jensen and Meckling, 1976), our findings suggest that high-quality auditors mitigate information asymmetry by constraining opportunism, thereby lowering the likelihood of bad-news hoarding and stock price crashes. Taken together, the findings provide generalizable evidence that individual auditors matter for market stability: capable partners can substitute for the absence of global brands by upholding transparency, while low-quality auditors pose risks even in highly regulated environments.

The remainder of this article is structured as follows: Section 2 discusses Iran's audit and capital market structure. Section 3 presents the theories, literature review and hypothesis development. Section 4 covers the sample, measurements, data and model construction. Section 5 reports the main results. Section 6 presents additional tests and addresses endogeneity issues. Section 7 concludes the study. Finally, Section 8 presents limitations and future research directions.

2. Audit practices and the unique capital market structure of Iran

Iran's unique socio-economic and regulatory environment offers a highly relevant context to study the link between audit partner quality and stock price crash risk. With limited media coverage, concentrated ownership and concerns over disclosure reliability (Mirshekary and Saudagaran, 2005; Ensaf *et al.*, 2025; Rajabalizadeh and Schadewitz, 2025b), audited financial statements become especially crucial, elevating the role of individual auditors in shaping financial transparency and crash risk outcomes.

First, the formation of the Iranian Association of Certified Public Accountants in 2001 expanded the private audit sector (Bagherpour *et al.*, 2014; Azizkhani *et al.*, 2022). However, the audit market remains fragmented and Big 4 firms are legally barred from operating (MohammadRezaei *et al.*, 2016). This fragmented environment, marked by intense domestic competition, creates substantial variation in partner-level audit quality, offering a distinctive opportunity to study how individual auditor characteristics influence stock price crash risk in a setting where firm reputation plays a smaller role.

Second, Iran's institutional environment – characterized by weak enforcement, dominant state ownership and ongoing economic reforms – limits external monitoring mechanisms. As a result, investors, banks and minority shareholders rely heavily on auditor signals to assess firm performance (Azizkhani *et al.*, 2022). Prior evidence shows that Iranian investors respond to audit quality cues (Hajiha and Ebrahimi, 2016; Baghoomian *et al.*, 2017), further highlighting the importance of studying audit partner quality's impact on stock price crash risk in this context.

Third, Iran's auditing framework requires dual signatures from both a lead and a review partner on audit reports (Rajabalizadeh and Schadewitz, 2025a). The lead partner directs the audit engagement, while the review partner independently assesses and challenges critical audit judgments (Epps and Messier, 2007; Lee and Levine, 2020). This dual-signature requirement enhances accountability and creates a unique institutional setting to isolate individual partner effects beyond firm-level influences. In China, the regulatory environment also mandates two signing partners for audit reports (Lennox *et al.*, 2014; Dou *et al.*, 2024; Firth *et al.*, 2012), with a lead partner and a review partner, both of whom share legal liability (Chinese Auditing Standards on CPAs No. 1501, 2017). Following a series of financial scandals in the early 2000s, China implemented mandatory audit partner rotation to enhance independence (Gul *et al.*, 2013), reflecting similar concerns regarding long-term auditor-client relationships as in Iran.

Taiwan's dual-signature requirement mirrors this structure, with the lead partner overseeing audit execution and the concurring partner reviewing judgments (Chi *et al.*, 2009; Lee *et al.*, 2017; He and Rivai, 2024). Taiwan's system ensures equal legal responsibility for both partners, regardless of their respective roles (Schneider and Messier, 2007). Further, studies from Taiwan suggest that co-working experience between lead and concurring partners can influence audit quality, showing the critical role of interpersonal dynamics in audit effectiveness (Huang *et al.*, 2022). These findings align with dual-signature systems found in France, Denmark and Sweden, where joint audit arrangements or mandatory dual partner signings have been used historically to promote independent oversight (Francis *et al.*, 2009; Ittonen and Trønnes, 2015). These international examples provide a comparative backdrop for understanding the dynamics of dual-signature audit systems and their role in enhancing audit quality and reducing crash risk.

Finally, recognizing that conventional audit quality proxies often fail to fully capture individual auditor performance (Francis, 2011), we use the audit failure rate (AFR) – the number of audit failures divided by the total number of audits signed – as a direct partner-level measure of quality (Goodwin and Wu, 2016; Lee *et al.*, 2019a). Following Wang *et al.* (2015) and MohammadRezaei *et al.* (2021), we use (1–AFR) to reflect auditor effectiveness. Combined with Iran's dual-signature system, this outcome-based measure provides a robust foundation to examine the relationship between audit partner quality and stock price crash risk.

3. Theories, literature review and hypotheses development

The relationship between audit partner quality and stock price crash risk can be understood through several complementary theoretical perspectives. Agency theory (Jensen and

Meckling, 1976) and the information asymmetry framework (Healy and Palepu, 2001) posit that managers may strategically withhold bad news to protect private benefits, thereby increasing the likelihood of sudden stock price crashes when accumulated negative information is eventually released (Hutton *et al.*, 2009). High-quality auditors mitigate this risk by constraining earnings management, promoting timely loss recognition and enhancing the credibility and transparency of financial reporting (DeAngelo, 1981; Khurana and Raman, 2004). In this view, stronger audit partner quality reduces information asymmetry and limits managerial bad-news hoarding, thereby lowering the probability of extreme downside stock price movements.

Behavioral auditing research further emphasizes that audit quality is shaped not only by firm-level policies and structures but also by individual auditors' psychological, cognitive and experiential attributes that influence professional judgment and decision-making (Nelson and Tan, 2005; Hurtt *et al.*, 2013; Griffith *et al.*, 2016; Francis, 2011). Partner-level differences in cognitive style, experience and professional skepticism affect how auditors interpret client signals, assess risk and exercise judgment under uncertainty (Svanberg and Öhman, 2013). These individual characteristics, combined with situational pressures such as workload and client importance, generate meaningful variation in audit outcomes across partners (DeFond and Zhang, 2014). Extending this perspective, prior studies show that auditor traits such as conscientiousness, openness and professional skepticism are associated with higher audit quality and reduced misreporting (Gul *et al.*, 2013; Samagaio and Felício, 2022), while interpersonal dynamics and team interactions further shape audit effectiveness (Friska and Agustia, 2025). Taken together, this literature suggests that audit partner quality – reflecting both technical competence and behavioral discipline – should play a critical role in mitigating stock price crash risk.

In Iran's fragmented audit market, the role of individual audit partners is expected to be particularly pronounced. The absence of Big 4 audit firms, combined with limited external monitoring and media scrutiny, increases reliance on auditors as key information intermediaries (Azizkhani *et al.*, 2022; MohammadRezaei *et al.*, 2016). Moreover, Iran's mandatory dual-signature audit system enhances individual accountability at the partner level, reducing the scope for reputation-based complacency and reinforcing incentives to maintain high audit quality. Prior research demonstrates that individual audit partners meaningfully influence audit outcomes and capital market consequences beyond firm-level reputation effects (Francis, 2011; Zerni, 2012; Aobdia *et al.*, 2015). Accordingly, in this institutional setting, higher audit partner quality should constrain managerial opportunism, improve the timeliness of bad-news disclosure and reduce the likelihood of stock price crashes [1]. Based on the above arguments, we propose the following hypotheses:

H1. Higher audit partner quality is negatively associated with stock price crash risk.

H2. The relationship between audit partner quality and stock price crash risk is stronger for the lead partner than for the review partner.

The distinction between lead and review partners is central to Iranian audit engagements. Lead partners have primary responsibility for audit planning, risk assessment and key judgment calls, as well as direct interaction with client management (McCracken *et al.*, 2008; Rajabalizadeh and Schadewitz, 2025a). In contrast, review partners play a secondary oversight role, focusing on evaluating audit judgments, compliance and evidence sufficiency (Epps and Messier, 2007). Because the lead partner's decisions more directly shape audit execution and reporting outcomes, the quality of the lead partner is expected to exert a stronger crash-risk–reducing effect than that of the review partner, leading to *H2*.

4. Measurement, data and research design

4.1 Sample

The sample for this study consists of firms listed on the Tehran Stock Exchange (TSE). Data was extracted from the Codal database, which provides comprehensive financial and accounting information in Iran. The data set includes 481 audit partners from 141 audit firms who served 207 client firms over the period from 2011 to 2024. The data collection and sample refinement process are summarized in Table 1.

4.2 Measuring stock price crash risk

Following prior literature (Kim *et al.*, 2011a, 2011b; Robin and Zhang, 2015; Hutton *et al.*, 2009; Callen *et al.*, 2020; Wang *et al.*, 2020; Fan and Xu, 2022; Shelih and Wang, 2024; Chen *et al.*, 2024), we measure stock price crash risk (*SPCR*) using four widely used proxies to capture different dimensions of crash risk.

NCSKEW: Negative skewness of firm-specific weekly returns over the fiscal year is calculated. Weekly returns are derived using a regression model that explains how stock price changes relate to market returns. The skewness of these residuals (unexplained by the market) is then computed to assess crash risk.

DUVOL: This measure captures the volatility asymmetry between negative and positive return weeks. It is defined as the log ratio of standard deviations of down-week to up-week returns, reflecting how negative shocks are often more volatile than positive returns.

CRASH: This binary variable is set to 1 if a firm experiences a weekly return falling more than 3.09 standard deviations below the mean, signaling an extreme crash event. If no such event occurs, it is set to 0.

COUNT: This count measures the number of extreme negative returns (over 3.09 standard deviations below the mean) in a fiscal year, adjusted by the count of extreme positive returns, indicating the frequency of crash events.

4.3 Measuring audit partner quality characteristics

Audit failure is defined as the occurrence of a financial statement restatement following an unqualified audit opinion (Palmrose, 1988). Such restatements indicate that material misstatements were not detected during the audit process and therefore reflect lower audit quality. Following MohammadRezaei *et al.* (2021), we measure audit partner quality using the audit failure rate (AFR), defined as the ratio of restatements to the total number of audits signed by an individual partner.

Table 1. Sample selection procedure

Description	Total observations
All firms listed on the Tehran Stock Exchange from 2011 to 2024 [14 (years) × 319 (firms) = 4,466]	4,466
Less:	
(1) Financial or utility industry firms [14 (years) × 80 (firms) = 1,120]	(1,120)
(2) Firms without other necessary data for calculating dependent and control variables	(448)
Final sample	2,898

Note(s): The sample consists of Tehran Stock Exchange (TSE) listed non-financial firms from 2011 to 2024 in Iran. A total of 2,898 observations were collected, covering 207 distinct firms across multiple years

The use of AFR is theoretically justified because it captures multiple dimensions of audit quality. Specifically, a lower AFR reflects both superior technical competence – the ability to detect material misstatements – and professional independence – the willingness to require corrections when misstatements are identified. This perspective aligns with the role of auditors as gatekeepers who mitigate information asymmetry by enhancing the credibility and transparency of financial reporting (Wang *et al.*, 2015). Accordingly, AFR directly reflects partner-level effectiveness in preventing the accumulation of undisclosed bad news that can lead to stock price crashes.

Prior research provides strong empirical support for this measure. Wang *et al.* (2015) show that an audit partner's historical failure rate predicts future misstatements, with the effect being stronger for engagement (lead) partners than for review partners. Consistent with this evidence, MohammadRezaei *et al.* (2021) document that, in the Iranian setting, higher AFRs are associated with more frequent restatements and fewer clean audit opinions. Moreover, Francis and Michas (2013) argue that restatements constitute one of the most direct indicators of low audit quality, as they capture realized reporting failures rather than discretionary accounting choices. Taken together, this evidence supports the use of (1 − AFR) as a theoretically grounded and empirically validated proxy for audit partner quality.

4.4 Model and variables definition

The main analysis is performed using the following regression:

$$\begin{aligned} SPCR_t = {} & \beta_0 + \beta_1 LP\_QUALITY_{t-1} + \beta_2 RP\_QUALITY_{t-1} + \beta_3 LP\_GENDER_{t-1} \\ & + \beta_4 RP\_GENDER_{t-1} + \beta_5 LP\_INDEXPERIENCE_{t-1} \\ & + \beta_6 RP\_INDEXPERIENCE_{t-1} + \beta_7 LP\_WORKLOAD_{t-1} \\ & + \beta_8 RP\_WORKLOAD_{t-1} + \beta_9 LP\_CI_{t-1} + \beta_{10} RP\_CI_{t-1} \\ & + \beta_{11} AUDTYPE_{t-1} + \beta_{12} LNAUDDELAY_{t-1} + \beta_{13} AUDTEN_{t-1} \\ & + \beta_{14} OPNINT_{t-1} + \beta_{15} ACEXST_{t-1} + \beta_{16} BDSIZE_{t-1} + \beta_{17} LAGNCSKEW_{t-1} \\ & + \beta_{18} BETA_{t-1} + \beta_{19} DEBTRATIO_{t-1} + \beta_{20} SIZE_{t-1} + \beta_{21} ROA_{t-1} + \beta_{22} AGE_{t-1} \\ & + \chi_{23} LEVERAGE_{t-1} + \beta_{24} MB_{t-1} + \beta_{25} ZMJSCORE_{t-1} + YEAR\,FE \\ & + INDUSTRY\,FE + \varepsilon_i \end{aligned} \tag{1}$$

This model examines the relationship between audit partner quality (measured by *LP_QUALITY* and *RP_QUALITY*) and stock price crash risk. The variables include partner-specific controls such as gender (*LP_GENDER*, *RP_GENDER*), experience (*LP_EXPERIENCE*, *RP_EXPERIENCE*), workload (*LP_WORKLOAD*, *RP_WORKLOAD*) and client importance (*LP_CI*, *RP_CI*). In addition, audit firm characteristics (e.g. auditor type, audit delay and tenure) (Rajabalizadeh and Schadewitz, 2025a), corporate governance factors (e.g. audit committee existence, board size) (Wang *et al.*, 2020; Rajabalizadeh, 2025) and firm-specific attributes (e.g. size, leverage and profitability) (Chen *et al.*, 2017; Rezaee and Rajabalizadeh, 2025) are included to control for other potential influences on crash risk. All variables included in the empirical models, along with their detailed definitions and measurement procedures, are reported in the Appendix.

To test *H1*, we examine the coefficients on *LP_QUALITY* and *RP_QUALITY*. Consistent with the theoretical framework and hypothesis development, we expect these coefficients to be negative, indicating that higher audit partner quality reduces stock price crash risk by constraining bad-news hoarding and enhancing financial reporting transparency.

To test *H2*, we compare the magnitudes of the coefficients for *LP_QUALITY* and *RP_QUALITY*. Because lead partners bear primary responsibility for audit planning, risk assessment and key judgment decisions, their quality is expected to exert a stronger crash-risk–reducing effect than that of review partners.

5. Main results

5.1 Descriptive statistics

Table 2 presents the descriptive statistics for 2,898 observations from 2011 to 2024. The average *NCSKEW* is −0.020 (1.030), aligning with prior studies (Hutton *et al.*, 2009; Callen *et al.*, 2020). *DUVOL* averages 0.004 and *COUNT* averages 0.822. The average audit quality scores for lead partners (*LP_QUALITY*) and review partners (*RP_QUALITY*) are 0.734 and 0.698, respectively, consistent with MohammadRezaei *et al.* (2021). Lead partners have higher industry experience and client importance. Other indicators such as audit delay (*LNAUDDELAY* = 4.299) and audit tenure (*AUDTEN* = 4.125 years) show moderate values. Governance and financial indicators such as board size (*BDSIZE* ≈ 5), *ROA* (0.153), *LEVERAGE* (0.589) and *ZMJSCORE* (−2.238) align with patterns observed in previous research (Rajabalizadeh and Schadewitz, 2025a). Panel B shows 28.36% of firms experienced crash events and 20.36% were audited by state auditors.

Table 3 shows the correlation matrix, providing an overview of relationships among the variables. The four crash risk measures (*NCSKEW*, *DUVOL*, *COUNT*, *CRASH*) are positively correlated, with notable correlations like *NCSKEW* and *DUVOL* (0.106) and *NCSKEW* and *COUNT* (0.677). Audit partner quality (*LP_QUALITY* and *RP_QUALITY*) is negatively correlated with *SPCR* measures, confirming that higher partner quality is linked to lower crash risk. The correlation for lead partners is stronger, supporting *H2*, which indicates that lead partners have a greater influence on mitigating crash risk. However, these correlations do not account for firm-level characteristics like size or leverage, so we perform regression analyses to isolate the effects. Multicollinearity is not a concern as variance inflation factors (VIF) are all below 5 (Gujarati, 1995).

5.2 Main results: partner quality and stock price crash risk

Table 4 presents regression results analyzing the effect of lead and review partner characteristics on future stock price crash risk across four measures (*NCSKEW*, *DUVOL*, *COUNT*, *CRASH*). The analysis reveals significant negative coefficients for *LP_QUALITY* across all measures (β_1 = −0.164 for *NCSKEW*, −0.082 for *DUVOL*, −0.825 for *COUNT*, −0.289 for *CRASH*) and for *RP_QUALITY* (β_2 = −0.122 for *NCSKEW*, −0.072 for *DUVOL*, −0.416 for *COUNT*, −0.234 for *CRASH*). These findings support *H1*, showing that higher partner quality reduces the likelihood of stock price crashes. The stronger effect for *LP_QUALITY* across all measures supports *H2*, indicating that lead partners have a more significant impact due to their decision-making role in the audit process. These effects should be interpreted in light of Iran's institutional setting, where external monitoring is relatively limited (e.g. concentrated ownership and weaker media scrutiny) and investors rely more heavily on audited financial statements as a credibility signal (Mirshekary and Saudagaran, 2005; Azizkhani *et al.*, 2022; Rajabalizadeh and Schadewitz, 2025b). Moreover, Iran's mandatory dual-signature requirement creates distinct accountability incentives for both the

Table 2. Descriptive statistics

Variables	Mean	STD	25th	Median	75th
Panel A. Continuous variables					
NCSKEW	−0.020	1.030	−0.812	0.008	0.839
DUVOL	0.004	0.880	0.049	0.105	0.115
COUNT	0.822	2.261	−1.000	1.000	2.000
LP_QUALITY	0.734	0.365	0.500	1.000	1.000
RP_QUALITY	0.698	0.328	0.500	0.833	1.000
LP_INDEXPERIENCE	0.621	2.047	0.036	0.150	0.843
RP_INDEXPERIENCE	0.596	1.981	0.029	0.102	0.382
LP_WORKLOAD	56.900	92.163	4.000	15.000	63.000
RP_WORKLOAD	29.961	40.390	4.000	12.000	43.000
LP_CI	0.638	0.386	0.234	0.814	1.000
RP_CI	0.526	0.404	0.101	0.475	1.000
LNAUDDELAY	4.299	0.393	4.007	4.407	4.625
AUDTEN	4.125	4.002	1.000	3.000	4.000
OPNINT	1.440	1.882	0.000	1.000	3.000
BDSIZE	5.049	0.318	5.000	5.000	5.000
LAGNCSKEW	−0.037	0.933	−0.652	−0.040	0.646
BETA	0.634	0.878	0.069	0.558	1.119
DEBTRATIO	1.871	2.276	0.703	1.295	2.343
SIZE	14.259	1.616	13.215	14.039	15.040
ROA	0.153	0.146	0.060	0.132	0.233
AGE_t	3.568	0.396	3.296	3.664	3.892
LEVERAGE	0.589	0.246	0.435	0.585	0.725
MB	4.169	6.469	1.456	2.367	4.084
ZMJSCORE	−2.238	1.783	−3.315	−2.177	−1.258

Variable	0 (Count)	0 (%)	1 (Count)	1 (%)
Panel B. Dummy variables				
CRASH	2,076	71.64	822	28.36
LP_GENDER	2,648	91.37	250	8.63
RP_GENDER	2,718	93.79	180	6.21
AUDTYPE	2,308	79.64	590	20.36
ACEXST	1,045	36.06	1,853	63.94

Note(s): All continuous variables are winsorized at the 1st and 99th percentiles to reduce the impact of outliers
Source(s): Authors' own work

lead and review partners, allowing us to isolate partner-level effects beyond audit-firm reputation.

As noted by previous studies (Francis, 2011; Zerni, 2012), both lead and review partner quality significantly reduce crash risk, but lead partners have a stronger effect due to their primary role in audit planning and decision-making (Knechel *et al.*, 2013). The results also reflect Iran's unique audit environment, where the absence of Big 4 firms and reliance on dual-signature audits highlight the importance of individual partner quality (Mirshekary and Saudagaran, 2005). Gender and experience effects show that female partners and experienced auditors contribute to reducing crash risk (Wang *et al.*, 2020).

Consistent with prior studies, higher partner workload appears to proxy for experience and reputation, which is associated with lower stock price crash risk in resource-constrained audit markets (Habib *et al.*, 2019). A possible explanation is that partners with heavier workloads tend to have higher competence, stronger reputations and access to more audit

Table 3. Correlation

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1. *NCSKEW*	1														
2. *DUVOL*	*0.106*	1													
3. *COUNT*	*0.677*	*0.045*	1												
4. *CRASH*	*0.692*	*0.053*	*0.467*	1											
5. *LP_QUALITY*	*−0.023*	*−0.045*	*−0.048*	*−0.023*	1										
6. *RP_QUALITY*	*−0.015*	*−0.038*	*−0.015*	*−0.014*	*0.415*	1									
7. *LP_GENDER*	−0.009	0.015	0.034	0.019	*0.064*	*0.073*	1								
8. *RP_GENDER*	−0.012	0.003	*0.040*	0.033	*0.040*	*0.048*	0.03	1							
9. *LP_INDEXPERIENCE*	−0.014	0.017	0.001	0.004	0.013	0.007	−0.016	−0.001	1						
10. *RP_INDEXPERIENCE*	*−0.053*	0.024	0.015	0.01	*−0.048*	−0.035	*−0.038*	0.029	*0.398*	1					
11. *LP_WORKLOAD*	*−0.051*	0.035	0.032	*0.055*	−0.003	0.001	*−0.043*	*0.284*	*0.135*	*0.244*	1				
12. *RP_WORKLOAD*	−0.026	0.035	0.033	0.031	*−0.079*	*−0.089*	−0.002	*0.326*	*0.047*	*0.369*	*0.461*	1			
13. *LP_CI*	0.026	0.013	−0.014	−0.035	*−0.044*	*−0.054*	0.004	*−0.039*	*−0.328*	*−0.151*	*−0.375*	*−0.097*	1		
14. *RP_CI*	0.019	0.006	−0.005	*−0.039*	*0.038*	0.010	0.023	*−0.149*	*−0.189*	*−0.384*	*−0.424*	*−0.450*	*0.444*	1	
15. *AUDTYPE*	−0.004	0.033	0.020	0.021	*−0.037*	*−0.047*	0.004	*0.283*	0.016	*0.229*	*0.454*	*0.488*	*0.064*	*−0.259*	1
16. *LNAUDDELAY*	−0.003	*0.045*	0.007	0.007	*0.192*	*0.206*	0.028	*0.052*	*0.058*	0.03	*0.060*	*0.065*	−0.032	−0.022	*0.073*
17. *AUDTEN*	−0.022	*0.040*	0.004	0.035	0.007	0.007	−0.003	*0.180*	0.014	*0.188*	*0.521*	*0.486*	0.032	*−0.212*	*0.454*
18. *OPNINT*	*0.054*	0.019	−0.004	−0.018	*0.330*	*0.294*	*0.089*	*0.040*	0.016	*−0.047*	0.031	−0.007	−0.031	−0.026	*0.060*
19. *ACEXST*	*−0.054*	−0.002	0.004	0.001	*0.045*	*0.044*	*−0.042*	−0.023	0.035	0.027	−0.029	*−0.066*	0.035	*0.052*	−0.014
20. *BDSIZE*	−0.011	0.003	0.036	−0.005	*0.052*	*0.066*	−0.027	−0.014	−0.022	*−0.044*	*−0.071*	*−0.078*	*0.043*	*0.096*	*−0.084*
21. *LAGNCSKEW*	*0.114*	−0.017	*0.091*	*0.079*	*−0.050*	*−0.058*	−0.033	−0.019	−0.025	−0.016	−0.017	0.007	0.024	0.028	0.017
22. *BETA*	*−0.173*	*0.059*	*0.115*	*0.070*	0.032	0.010	−0.015	0.013	−0.012	−0.011	*0.053*	*0.043*	*0.046*	0.031	*0.046*
23. *DEBTRATIO*	*0.066*	0.013	−0.026	−0.012	−0.036	*−0.037*	*−0.038*	*0.067*	−0.029	*−0.043*	*0.098*	*0.110*	*0.049*	−0.01	*0.118*
24. *SIZE*	*0.063*	*0.041*	*−0.042*	*−0.066*	*0.091*	*0.065*	*0.061*	*0.083*	−0.03	−0.036	*0.163*	*0.190*	*0.247*	*0.168*	*0.283*
25. *ROA*	*−0.148*	0.017	0.033	*0.037*	*−0.069*	*−0.074*	*0.053*	0.026	−0.035	−0.003	0.001	0.001	*0.084*	*0.122*	−0.017
26. *AGE*	−0.027	0.036	0.029	*−0.043*	*0.112*	*0.120*	0.030	−0.011	−0.005	0.014	*0.043*	−0.029	0.001	−0.007	0.025
27. *LEVERAGE*	*0.056*	0.022	−0.016	0.009	0.005	0.001	*−0.067*	−0.024	*−0.055*	*−0.068*	*0.086*	*0.081*	0.020	−0.003	*0.101*
28. *MB*	*−0.149*	0.025	−0.010	*0.055*	*0.139*	*0.160*	−0.032	0.007	*0.054*	0.032	−0.021	*−0.058*	*−0.074*	−0.036	*−0.061*
29. *ZMJSCORE*	*0.093*	0.016	−0.027	−0.002	0.010	0.005	*−0.067*	*−0.037*	*−0.044*	*−0.062*	*0.077*	*0.073*	0.001	−0.029	*0.092*

Note(s): Correlations that are significant at p-value < 0.05 are displayed in italic
Source(s): Authors' own work

(*continued*)

Table 3. Continued

Variables	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
1. *NCSKEW*														
2. *DUVOL*														
3. *COUNT*														
4. *CRASH*														
5. *LP_QUALITY*														
6. *RP_QUALITY*														
7. *LP_GENDER*														
8. *RP_GENDER*														
9. *LP_INDEXPERIENCE*														
10. *RP_INDEXPERIENCE*														
11. *LP_WORKLOAD*														
12. *RP_WORKLOAD*														
13. *LP_CI*														
14. *RP_CI*														
15. *AUDTYPE*														
16. *LNAUDDELAY*	1													
17. *AUDTEN*	*0.098*	1												
18. *OPNINT*	*0.339*	*0.073*	1											
19. *ACEXST*	*−0.056*	−0.028	*−0.095*	1										
20. *BDSIZE*	*0.043*	*−0.050*	0.012	0.02	1									
21. *LAGNCSKEW*	−0.013	0.004	*0.081*	*−0.039*	−0.015	1								
22. *BETA*	−0.014	0.011	*0.041*	*0.138*	*−0.046*	−0.017	1							
23. *DEBTRATIO*	*0.096*	*0.130*	*0.123*	*−0.052*	*−0.045*	*0.081*	−0.018	1						
24. *SIZE*	*0.096*	*0.259*	*0.098*	*0.317*	−0.018	0.014	*0.201*	*0.071*	1					
25. *ROA*	*−0.259*	*−0.062*	*−0.338*	*0.056*	−0.001	*−0.140*	0.031	*−0.192*	*0.127*	1				
26. *AGE*	*0.169*	*0.068*	*0.097*	*0.094*	−0.023	−0.031	−0.023	0.032	*0.043*	−0.017	1			
27. *LEVERAGE*	*0.118*	*0.165*	*0.252*	*−0.082*	*−0.074*	*0.098*	−0.021	*0.375*	0.003	*−0.456*	*0.041*	1		
28. *MB*	*0.048*	−0.028	−0.026	*0.196*	0.011	*−0.127*	0.018	*0.248*	0.001	*0.075*	*0.104*	−0.008	1	
29. *ZMJSCORE*	*0.157*	*0.158*	*0.291*	*−0.085*	*−0.054*	*0.126*	−0.031	*0.386*	−0.023	*−0.618*	*0.043*	*0.467*	*−0.037*	1

Table 4. Main results: partner quality and stock price crash risk

Variables	(1) *NCSKEW*	(2) *DUVOL*	(3) *COUNT*	(4) *CRASH*
LP_QUALITY	*−0.164*** (0.055)	*−0.082*** (0.028)	*−0.825*** (0.266)	*−0.289*** (0.131)
RP_QUALITY	*−0.122*** (0.058)	*−0.072*** (0.032)	*−0.416*** (0.136)	*−0.234*** (0.109)
LP_GENDER	−0.107 (0.079)	−0.035 (0.075)	−0.422** (0.187)	−0.410** (0.199)
RP_GENDER	−0.040 (0.069)	−0.048 (0.065)	−0.198 (0.163)	−0.097 (0.176)
LP_INDEXPERIENCE	−0.001 (0.011)	−0.006 (0.011)	−0.004 (0.027)	−0.023 (0.030)
RP_INDEXPERIENCE	−0.010 (0.006)	−0.001 (0.006)	−0.006 (0.015)	−0.005 (0.016)
LP_WORKLOAD	−0.003*** (0.001)	0.001 (0.001)	−0.001 (0.002)	−0.006*** (0.002)
RP_WORKLOAD	−0.001 (0.001)	0.001 (0.001)	−0.001 (0.001)	−0.002* (0.001)
LP_CI	−0.108 (0.069)	−0.039 (0.066)	−0.011 (0.165)	−0.265 (0.183)
RP_CI	−0.030 (0.063)	−0.048 (0.060)	−0.006 (0.149)	−0.277* (0.166)
AUDTYPE	−0.203 (0.094)	−0.003 (0.090)	−0.116 (0.224)	−0.327 (0.250)
LNAUDDELAY	−0.089* (0.054)	−0.005 (0.051)	0.095 (0.127)	0.345** (0.141)
AUDTEN	−0.024*** (0.007)	0.005 (0.007)	0.004 (0.016)	0.054*** (0.018)
OPNINT	0.024** (0.011)	−0.006 (0.011)	−0.060** (0.027)	−0.030 (0.031)
ACEXST	−0.071 (0.056)	−0.011 (0.053)	0.256* (0.133)	0.191 (0.143)
BDSIZE	−0.047 (0.058)	−0.002 (0.055)	0.189 (0.137)	0.043 (0.152)
LAGNCSKEW	−0.166*** (0.020)	−0.032* (0.019)	0.253*** (0.048)	0.225*** (0.053)
BETA	−0.141*** (0.022)	0.052** (0.020)	0.304*** (0.051)	0.118** (0.055)
DEBTRATIO	0.047*** (0.009)	0.003 (0.009)	−0.052** (0.022)	−0.066*** (0.025)
SIZE	0.071*** (0.015)	0.001 (0.015)	−0.065* (0.036)	−0.138*** (0.040)
ROA	−0.739*** (0.244)	0.299 (0.232)	0.176 (0.578)	1.040 (0.648)
AGE	0.004 (0.052)	0.057 (0.050)	0.203 (0.124)	−0.422*** (0.135)
LEVERAGE	−1.301*** (0.412)	−0.105 (0.391)	1.957** (0.978)	−0.115 (1.082)
MB	−0.032*** (0.004)	−0.001 (0.003)	0.022** (0.009)	0.045*** (0.010)
ZMJSCORE	0.176*** (0.065)	0.036 (0.062)	−0.257* (0.154)	0.095 (0.173)
C	1.572*** (0.590)	−0.186 (0.560)	−2.881** (1.399)	−1.693 (1.599)
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	2898	2898	2898	2898
R^2	0.218	0.035	0.087	
Adj_R^2	0.203	0.016	0.067	
Pseudo R^2				0.082
F	13.920***	1.793***	4.726***	
LR Chi2				268.460***

Note(s): This table reports OLS regression results examining the effect of lead (*LP_QUALITY*) and review (*RP_QUALITY*) partner quality on four measures of stock price crash risk (*NCSKEW, DUVOL*, *COUNT* and *CRASH*). Key coefficients are highlighted and bolded for clarity. All models include control variables, as well as year and industry fixed effects. Robust standard errors are reported in parentheses. Statistically significant coefficients are shown in italics for ease of reference. *, ** and *** denote statistical significance at the 10, 5 and 1% levels, respectively
Source(s): Authors' own work

resources, which allows them to maintain high audit quality despite the added pressure (Wan Hussin *et al.*, 2018). In Iran's dual-signature audit environment, these partners often handle more prominent clients, which subjects them to greater scrutiny, incentivizing them to uphold audit quality (Rajabalizadeh and Schadewitz, 2025a), thus reducing crash risk.

Control variables also play a crucial role: female partners generally reduce crash risk (Robin and Zhang, 2015); partner experience has a mixed effect, with some significant negative results (Xu *et al.*, 2013); workload effects suggest that higher client loads lead to better outcomes (Habib *et al.*, 2019). Audit firm characteristics like auditor type, audit delay and tenure exhibit varied but stabilizing effects (Callen *et al.*, 2020). Firm attributes, such as *DEBTRATIO*, *SIZE*, *ROA*, *LEVERAGE*, *MB* and *ZMJSCORE*, are significant and align with

previous findings (Rajabalizadeh and Schadewitz, 2025a; Faraji *et al.*, 2023). These results highlight the critical role of audit partner quality in enhancing market stability.

5.3 Discussion and theoretical contribution

Our findings provide important insights into how audit partner quality influences stock price crash risk in Iran's institutional setting, where audited financial statements play an outsized role in mitigating information asymmetry due to limited external monitoring and concerns over disclosure reliability (Mirshekary and Saudagaran, 2005; Rajabalizadeh and Schadewitz, 2025b). Consistent with the agency-based mechanisms discussed in Section 3, high-quality audit partners constrain managerial bad-news hoarding by strengthening reporting credibility and improving the timeliness of adverse information disclosure. In this context, high-quality partners operate as an "information release valve" by encouraging timely loss recognition and discouraging earnings management practices that delay the release of bad news (Holm and Zaman, 2012; Coffee, 2006).

Our findings extend agency theory by showing that auditors not only monitor management but also influence the timing of information flows to the market (Watts and Zimmerman, 1978; Healy and Palepu, 2001). High-quality partners improve shareholder protection by reducing managers' ability to withhold unfavorable information. This study also contributes to the audit literature by demonstrating that the effects are more pronounced for lead partners than for review partners. This role differentiation is particularly relevant in Iran because both partners sign the audit report, yet the lead partner bears primary responsibility for planning and key judgments, while the review partner provides independent challenge and oversight within the same engagement (Epps and Messier, 2007; Rajabalizadeh and Schadewitz, 2025a). This is consistent with the lead partner's greater decision-making authority (Knechel *et al.*, 2013). The finding that review partners also matter, although to a lesser extent, underscores the value of Iran's dual-signature system, which adds an extra layer of scrutiny to audit engagements (Mirshekary and Saudagaran, 2005).

Interestingly, the negative relationship between partner workload and crash risk suggests that busier partners, who are often more experienced and better resourced, can still deliver higher audit quality. This aligns with the notion that workload may serve as a proxy for reputation and expertise in resource-constrained audit markets (Habib *et al.*, 2019).

6. Additional tests

6.1 Partner quality, stock price crash risk and agency costs

Building on the agency framework discussed in Section 3, we examine whether the effect of audit partner quality on stock price crash risk varies with agency costs. According to DeAngelo (1981), the need for high audit quality increases with higher agency costs. We examine shareholder-manager conflicts (measured by insider ownership) and shareholder-debtholder conflicts (measured by an Investment Opportunity Set, IOS, based on market-to-book ratios and risk indicators). Table 5 presents the regression results, categorizing firms by high and low agency costs. Among high-agency-cost firms, audit partner quality (*LP_QUALITY* and *RP_QUALITY*) significantly reduces crash risk, especially for lead partners. In low-agency-cost firms, the effects are weaker or insignificant. These findings suggest that higher agency costs demand stronger audit quality to prevent misreporting and stock price crashes, supporting DeAngelo's theory (1981).

Table 5. Partners quality, stock price crash risk and agency costs

Variables	(1) *NCSKEW*	(2) *DUVOL*	(3) *COUNT*	(4) *CRASH*
Panel A. High agency costs				
LP_QUALITY	*−0.131*** (0.044)	*−0.079*** (0.036)	*−0.681*** (0.296)	*−0.168*** (0.080)
RP_QUALITY	*−0.101*** (0.042)	*−0.068*** (0.031)	*−0.312*** (0.136)	*−0.135** (0.077)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1449	1449	1449	1449
R^2	0.196	0.032	0.079	
Adj_R^2	0.189	0.023	0.063	
Pseudo R^2				0.061
F	11.832***	1.784***	3.521***	
LR Chi2				154.561***
Panel B. Low agency costs				
LP_QUALITY	*−0.120** (0.069)	*−0.075* (0.058)	*−0.520** (0.289)	*−0.123* (0.088)
RP_QUALITY	*−0.099* (0.071)	*−0.063* (0.048)	*−0.306* (0.211)	*−0.130* (0.096)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1,449	1,449	1,449	1,449
R^2	0.184	0.031	0.075	
Adj_R^2	0.172	0.021	0.061	
Pseudo R^2				0.060
F	11.730***	1.689***	3.430***	
LR Chi2				149.384***

Note(s): This table presents results of regressions testing whether the relationship between audit partner quality and crash risk differs across firms with high versus low agency costs. Key coefficients for *LP_QUALITY* and *RP_QUALITY* are highlighted and bolded. All regressions control for firm- and audit-specific variables, with year and industry fixed effects included. Standard errors in parentheses. Statistically significant coefficients are shown in italics for ease of reference. *, ** and *** denote statistical significance at the 10, 5 and 1% levels, respectively
Source(s): Authors' own work

6.2 Partners quality, stock price crash risk and the effect of state ownership

Given the governance role of state ownership in Iran, we examine whether the effect of audit partner quality on stock price crash risk differs across levels of state ownership concentration. In high-concentration SOEs, government control reduces the incentive to conceal bad news (Chen *et al.*, 2011). Panel A of Table 6 shows that in high-concentration SOEs, both lead and review partner quality significantly reduce stock price crash risk, with lead partners having a stronger effect. In low-concentration SOEs (Panel B), the effects are weaker, although there are still some marginal impacts on crash risk. These findings highlight that audit quality plays a more consistent role in enhancing financial reporting reliability in high-concentration SOEs, where stronger state oversight is present.

6.3 Partners quality, stock price crash risk and auditor firm size

This study also examines how audit firm size influences audit quality. Larger audit firms, with more resources and experience (Francis and Yu, 2009), are better able to detect

Table 6. Partners quality, stock price crash risk and the effect of state ownership

Variables	(1) *NCSKEW*	(2) *DUVOL*	(3) *COUNT*	(4) *CRASH*
Panel A. High SOE concentration				
LP_QUALITY	*−0.177*** (0.077)	*−0.324*** (0.135)	*−1.065**** (0.355)	*−0.259** (0.144)
RP_QUALITY	*−0.144*** (0.065)	*−0.258** (0.143)	*−0.942**** (0.304)	*−0.053** (0.031)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1449	1449	1449	1449
R^2	0.287	0.063	0.122	
Adj_R^2	0.259	0.026	0.088	
Pseudo R^2				0.132
F	10.190***	2.698***	3.528***	
LR Chi2				210.130***
Panel B. Low SOE concentration				
LP_QUALITY	*−0.114* (0.084)	*−0.050* (0.038)	*−0.364* (0.260)	*−0.851** (0.486)
RP_QUALITY	*−0.075* (0.058)	*−0.160* (0.119)	*−0.312* (0.223)	*−0.714** (0.397)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
N	1,449	1,449	1,449	1,449
R^2	0.213	0.039	0.112	
Adj_R^2	0.180	0.029	0.074	
Pseudo R^2				0.120
F	6.465***	1.961***	3.014***	
LR Chi2				202.120***

Note(s): This table reports results for subsamples of high- and low-concentration state-owned enterprises (SOEs) to examine the moderating role of ownership structure. Coefficients for *LP_QUALITY* and *RP_QUALITY* are emphasized. All models include control variables, year and industry fixed effects and robust standard errors in parentheses. Statistically significant coefficients are shown in italics for ease of reference. *, ** and *** denote significance at the 10, 5 and 1% levels, respectively
Source(s): Authors' own work

managerial bad news and face higher reputational risks, leading to better audit quality. Our untabulated results confirm that even after excluding small audit firms, lead and review partner quality remain significantly linked to lower crash risk. In addition, a subsample analysis by client size shows consistent results and higher audit fees are associated with lower stock price crash risk, indicating stronger audit efforts from larger firms.

6.4 Addressing endogeneity and alternative measures of audit quality

To assess the robustness of our findings and address potential endogeneity concerns, we conduct a series of additional analyses, including alternative audit quality measures, fixed effects and instrumental variable estimation.

6.4.1 Alternative audit quality measures. While AFR is an objective, partner-level indicator of audit quality, it may still be subject to endogeneity concerns due to the non-random assignment of partners to clients. For instance, higher-risk firms may be audited by more experienced or higher-quality partners (Manry *et al.*, 2008; Pittman *et al.*, 2023), which could bias the estimated relationship between partner quality and stock price crash risk. Likewise, unobservable firm-level characteristics – such as corporate governance quality,

ownership concentration or audit committee independence – may simultaneously influence both partner assignment and crash risk (Shen *et al.*, 2024). To verify that our results are not driven by the choice of audit quality proxy, we re-estimate the main models using alternative measures of audit quality.

The first is discretionary accruals ($|DA|$), measured using the modified Jones model (Dechow *et al.*, 1995). Lower levels of absolute discretionary accruals indicate higher audit quality, as auditors effectively constrain managerial earnings manipulation (Becker *et al.*, 1998). The second is audit report modifications (*MODOPIN*), defined as an indicator variable equal to 1 if the audit report contains a qualified or adverse opinion and 0 otherwise. Modified opinions reflect stricter auditor judgment and a higher likelihood of detecting material misstatements (Habib, 2013). The untabulated empirical results show that higher-quality audit partners – proxied by lower discretionary accruals and a greater likelihood of issuing modified opinions – are significantly associated with lower stock price crash risk. The consistent evidence across different proxies supports the view that audit partners who deliver higher-quality audits, regardless of how audit quality is measured, play a critical role in mitigating the accumulation of undisclosed bad news and reducing the likelihood of extreme negative stock price movements.

6.4.2 Fixed effects analysis. We further re-estimate the models using client and audit firm fixed effects, following prior studies (Wang *et al.*, 2020; Kim *et al.*, 2011a). Panel A of Table 7 shows that using client fixed effects confirms a significant negative relationship between audit partner quality and crash risk, with lead partners having a stronger effect. Panel B, using audit firm fixed effects, also shows a negative relationship, although effect sizes slightly decrease, indicating that while firm-level standards matter, individual partner quality is still a key factor in reducing crash risk.

6.4.3 Reverse causality and instrumental variable approach. To address potential reverse causality between stock price crash risk and audit partner quality, this study uses 2SLS regression with instrumental variables, following Wang *et al.* (2020), Callen *et al.* (2020) and Kim *et al.* (2014, 2016). In the first stage, industry-average partner quality measures (*AVE_LP_QUALITY* and *AVE_RP_QUALITY*) are used as instruments (Kim *et al.*, 2014; Xu *et al.*, 2013; Chen *et al.*, 2017), consistent with prior studies and satisfying standard relevance and exclusion requirements:

$$LP\_QUALITY(RP\_QUALITY) = \beta_0 + \beta_1 AVE\_LP\_QUALITY(AVE\_RP\_QUALITY) + \sum CONTROLS + YEAR\,FE + INDUSTRY\,FE + \varepsilon_i \quad (2)$$

In the second stage, the predicted values from the first stage (*PRED_LP_QUALITY* and *PRED_RP_QUALITY*) replace the original variables, effectively isolating the exogenous components of partners' quality from other confounding factors.

$$SPCR = \beta_0 + \beta_1 PREDICTED\_LP\_QUALITY + \beta_2 PREDICTED\_RP\_QUALITY + \sum CONTROLS + YEAR\,FE + INDUSTRY\,FE + \varepsilon_i \quad (3)$$

The results in Table 8 confirm a persistent negative association between predicted partner quality and stock price crash risk, reinforcing the validity of our findings even under strict controls for endogeneity and reverse causality.

Table 7. Controlling endogeneity with client and audit firm fixed effect

Variables	(1) *NCSKEW*	(2) *DUVOL*	(3) *COUNT*	(4) *CRASH*
Panel A. Regression analysis with client firm fixed effect				
LP_QUALITY	*−0.146*** (0.063)	*−0.081*** (0.037)	*−0.817**** (0.264)	*−0.200** (0.114)
RP_QUALITY	*−0.111*** (0.050)	*−0.051*** (0.024)	*−0.433*** (0.188)	*−0.295** (0.164)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No
Client firm FE	Yes	Yes	Yes	Yes
Audit firm FE	No	No	No	No
N	2,898	2,898	2,898	2,898
Within-R^2	0.224	0.021	0.085	
Between-R^2	0.034	0.014	0.001	
Overall-R^2	0.200	0.020	0.070	
Pseudo R^2				0.065
F	20.180***	1.563**	6.465***	
LR Chi2				237.150***
Panel B. Regression analysis with audit firm fixed effect				
LP_QUALITY	*−0.140*** (0.061)	*−0.066*** (0.030)	*−0.791**** (0.264)	*−0.194** (0.108)
RP_QUALITY	*−0.108*** (0.049)	*0.059** (0.034)	*−0.602*** (0.262)	*−0.169** (0.094)
C and control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Client firm FE	No	No	No	No
Audit firm FE	Yes	Yes	Yes	Yes
N	2,898	2,898	2,898	2,898
Within-R^2	0.154	0.019	0.055	
Between-R^2	0.043	0.011	0.001	
Overall-R^2	0.131	0.016	0.041	
Pseudo R^2				0.046
F	19.480***	1.550**	6.217***	
LR Chi2				147.450***

Note(s): This table reports regressions controlling for unobserved heterogeneity through client-firm (Panel A) and audit-firm (Panel B) fixed effects. Coefficients for *LP_QUALITY* and *RP_QUALITY* are highlighted and bolded to show their consistent negative association with crash risk. Models include all control variables and year fixed effects. Standard errors are reported in parentheses. Statistically significant coefficients are shown in italics for ease of reference. *, ** and *** denote statistical significance at the 10, 5 and 1% levels, respectively

Source(s): Authors' own work

7. Conclusions and remarks

Recent literature has shown that stock price crash risk is influenced by a range of factors, including earnings manipulation (Hutton *et al.*, 2009), accounting conservatism (Kim and Zhang, 2016), tax avoidance (Kim *et al.*, 2011a) and IFRS adoption (DeFond *et al.*, 2015). Given its significance, stock price crash risk is increasingly considered a critical concern in investor decision-making and portfolio management. Building on this body of research, the present study examines whether audit partner quality plays a role in mitigating crash risk – an area identified by Francis (2011) as warranting further investigation.

Using a sample of 2,898 firm-year observations from TSE-listed firms over the period 2011–2024, this study investigates the association between audit partner quality and stock

Table 8. Controlling endogeneity using instrumental variables approach

	First stage		Second stage			
Variables	*LP_QUALITY*	*RP_QUALITY*	(1) *NCSKEW*	(2) *DUVOL*	(3) *COUNT*	(4) *CRASH*
AVE_ LP_QUALITY	1.312*** (0.437)					
AVE_ RP_QUALITY		0.127*** (0.041)				
PRED_LP_QUALITY			*−0.886*** (0.306)	*−0.783*** (0.356)	*−1.892*** (0.610)	*−4.389*** (1.463)
PRED_RP_QUALITY			*−0.678*** (0.295)	*−0.599*** (0.285)	*−1.447*** (0.629)	*−3.356*** (1.119)
C and control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	No	No	No	No	No
N	2,898	2,898	2,898	2,898	2,898	2,898
R^2	0.234	0.241	0.218	0.035	0.080	
Adj_R^2	0.219	0.226	0.202	0.015	0.062	
Pseudo R^2						0.084
F	15.460***	16.110***	14.130***	1.829***	4.423***	
LR Chi2						274.260***

Note(s): This table presents the results of the two-stage least squares (2SLS) analysis using industry-average partner quality (*AVE_LP_QUALITY* and *AVE_RP_QUALITY*) as instruments. The first-stage estimates confirm strong instrument relevance, while second-stage coefficients for *PRED_LP_QUALITY* and *PRED_RP_QUALITY* remain negative and significant, indicating robustness to endogeneity. All models include control variables and year fixed effects. Robust standard errors are in parentheses. Statistically significant coefficients are shown in italics for ease of reference. *, ** and *** denote statistical significance at the 10, 5 and 1% levels, respectively

Source(s): Authors' own work

price crash risk. The results indicate that firms audited by higher-quality partners are less likely to experience stock price crashes. This finding remains robust across a series of additional tests, including models that incorporate client and audit firm fixed effects. The association is particularly strong among firms with high agency costs and low-concentration SOEs. Moreover, firms audited by partners affiliated with larger audit firms also demonstrate a lower crash risk. The robustness of the findings is further confirmed using alternative proxies of audit quality – discretionary accruals and audit report modifications – which yield consistent results. To address potential endogeneity, the study also uses a two-stage least squares approach using instrumental variables, further supporting the validity of the results.

The results underscore the importance of strengthening accountability at the individual audit partner level, as opposed to merely focusing on firm size or rotation policies. Reforms such as the PCAOB's Rule 3211 in the USA (Public Company Accounting Oversight Board, 2015) and the EU's partner disclosure rules (Quick and Schmidt, 2018) demonstrate that naming engagement partners increases transparency and allows for a more granular level of accountability. In light of the Iranian context, our evidence suggests that monitoring partner-level failure rates, alongside incentivizing ongoing professional development and training, could reduce market risk. Boards and audit committees should also consider evaluating the track record of individual engagement partners, as relying solely on firm reputation may fail to mitigate the risks associated with weak individual partners. This notion is consistent with prior research, such as that by MohammadRezaei *et al.* (2021), which shows that restatement histories in auditor selection enhance oversight and decision-making processes. Audit firms should actively track partner performance metrics, encourage mentorship programs and strengthen quality control mechanisms, particularly for high-workload or less-experienced partners.

For emerging markets that share institutional features similar to Iran – such as weaker enforcement, concentrated ownership, limited media scrutiny and high reliance on audited financial statements – our evidence suggests that high-quality audit partners can partially substitute for weaker external governance by constraining bad-news hoarding and improving reporting credibility (Mirshekary and Saudagaran, 2005; Azizkhani *et al.*, 2022). In more developed markets with stronger enforcement and greater analyst/media monitoring, the incremental effect of partner-level quality on crash risk may be smaller and should be assessed empirically. Accordingly, our implications are most relevant for markets where auditors serve as primary information intermediaries.

Theoretically, the study extends research on stock price crash risk by introducing audit partner quality as a determinant of financial stability, aligning with agency theory's view of auditors as independent monitors who reduce information asymmetry (Jensen and Meckling, 1976; Kim *et al.*, 2011a). Evidence that lead partner quality is more significant than review partner quality supports role theory in team auditing, where the lead partner holds primary responsibility for audit decisions (Epps and Messier, 2007; Wang *et al.*, 2015). More broadly, the findings reaffirm that who the auditor is – not just the firm's reputation – matters in ensuring financial market stability (Gul *et al.*, 2013; Lennox *et al.*, 2014).

From a regulatory standpoint, in Iran's dual-signature setting, our findings suggest that strengthening partner-level transparency and accountability (e.g. systematic monitoring of partner performance histories and clearer disclosure of signing partners) may be particularly valuable in reducing crash risk. For example, requiring standardized disclosure of signing-partner histories (e.g. restatement-based performance indicators) could help boards and investors evaluate engagement risk more transparently. Dual-signature systems in countries such as China and Taiwan provide a useful comparative backdrop for understanding how partner-level accountability mechanisms may operate, although differences in enforcement and audit market structure imply that policy effectiveness may not transfer one-for-one

across jurisdictions (Firth *et al.*, 2012; Lennox *et al.*, 2014). Furthermore, stronger regulatory oversight on audit partner performance can ensure that auditors meet higher professional standards, which in turn benefits investor protection by mitigating potential stock price crashes resulting from poor audit practices.

8. Limitations and future research

While this study provides valuable insights into the relationship between audit partner quality and stock price crash risk, it has several limitations that should be considered. First, although (1–AFR) is an outcome-based and partner-level proxy for audit quality, it may not capture all dimensions of partner effectiveness (e.g. industry knowledge, negotiation style or judgment under pressure). Future research could combine AFR with additional partner attributes – such as specialization, co-signing history or behavioral measures – to capture audit quality more comprehensively.

Second, the study may be subject to omitted variable bias, as it does not account for all potential factors influencing audit quality and stock price crash risk. For example, while we control for a range of firm-level characteristics, individual-level factors such as audit partner cognitive traits, psychological biases and team dynamics could further explain variations in audit outcomes. Future research could incorporate more detailed partner-level data, such as behavioral and cognitive assessments, to deepen our understanding of how individual auditors influence audit quality and market stability.

Finally, the generalizability of our findings is limited to Iran's unique socio-economic and institutional context. Although the dual-signature system and audit partner dynamics in Iran provide an interesting setting, these findings may not be directly applicable to other markets with different regulatory environments or institutional frameworks. Because dual-signature accountability is central to the mechanism studied here, generalization to single-signature regimes should be made cautiously. We suggest that future studies test these findings in other emerging markets with similar audit structures, such as China and Taiwan, where dual-signature audits are also mandated. This would allow for a better understanding of how the findings can be generalized beyond Iran.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Note

[1.] We acknowledge that under certain circumstances, reputational considerations and relationship dynamics could weaken auditor vigilance – for example, when stakeholders become overly reliant on auditor reputation or when heavy workloads and longstanding auditor–client relationships erode independence (Simunic, 1984; Francis, 2011; Guénin-Paracini *et al.*, 2014; Hurley *et al.*, 2021). However, given Iran's fragmented audit market, the absence of global Big 4 reputational shields and the accountability-enhancing dual-signature audit requirement, we expect the monitoring and transparency effects of high-quality audit partners to dominate.

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Appendix

Table A1. Variable definitions

Dependent variable	
SPCR	= The future stock price crash risk, calculated using four metrics to capture various dimensions of volatility and negative return extremity: • *NCSKEW*: Measures the negative skewness of firm-specific weekly returns, indicating frequent and severe negative returns compared to positive ones. • *DUVOL*: Captures the log ratio of the standard deviations of down-week to up-week firm-specific returns, highlighting volatility asymmetry. • *CRASH*: An indicator set to 1 if a firm experiences extreme negative weekly returns that fall more than 3.09 standard deviations below the mean, indicating the occurrence of crash events. • *COUNT*: Quantifies the net count of extreme negative returns exceeding 3.09 standard deviations below the mean versus extreme positive returns, offering a direct measure of the frequency of negative shocks.
Main independent variables	
LP_QUALITY	= 1 minus the failure rate of the lead partner. The audit failure rate is calculated by dividing the number of type 2 failures (number of annual reports restated following a clean audit opinion) by the total number of annual reports signed by the lead audit partner
RP_QUALITY	= 1 minus the failure rate of the review partner. The audit failure rate is calculated by dividing the number of type 2 failures (number of annual reports restated following a clean audit opinion) by the total number of annual reports signed by the review audit partner
Control variables	
LP_GENDER	= 1 if the lead audit partner is a woman otherwise 0
RP_GENDER	= 1 if the reviewer audit partner is a woman otherwise 0
LP_INDEXPERIENCE	= The lead audit partner's market share of sales within a particular industry
RP_INDEXPERIENCE	= The review audit partner's market share of sales within a particular industry
LP_WORKLOAD	= The number of public client firms a lead audit partner handles
RP_WORKLOAD	= The number of public client firms a review audit partner handles
LP_CI	= Economic importance of a client for the lead audit partner. The ratio of the client's sales to the auditor's total audited sales from all clients
RP_CI	= Economic importance of a client for the review audit partner. The ratio of the client's sales to the auditor's total audited sales from all clients
AUDTYPE	= 1 if the client's firm has audited by state auditor otherwise 0
LNAUDDELAY	= The natural logarithm of days between the fiscal year-end date and the audit report date
AUDTEN	= Number of years that the client firm retains the auditor
OPNINT	= The number of paragraphs in a qualified audit opinion
ACEXST	= If the firm has the audit committee 1 and otherwise 0
BDSIZE	= The total number of board members
LAGNCSKEW	= lagged *NCSKEW*
BETA	= Market risk measured by equity beta
DEBTRATIO	= Debt_to_equity ratio computed as total liabilities divided by total equity
SIZE	= Natural logarithm of total assets
ROA	= Operating income divided by total assets
AGE	= Firm age, the natural log of the number of years since the firm gets listed in the stock market
LEVERAGE	= Total liabilities divided by total assets

(*continued*)

Table A1. Continued

MB	= Market-to-book ratio is the market value of equity divided by the book value of equity
ZMJSCORE	= Financial risk scores to measure bankruptcy probability, calculated as _4.803 _ 3.6 * (net income/total assets) + 5.4 * (total debt/total assets) _ 0.1 * (current assets/current liabilities) at the fiscal year-end
Additional variables	
INSIDER	= The stock ownership of managers
(Continued next page)	
(continued)	= Principal component analysis to extract a factor index (IOS) from Four singular variables: • *MBVE:* indicates the market-to-book value of equity ratio. • *MBVA:* designates the market-to-book value of assets ratio. • *RISK1:* a proxy for the risk of operations, equal to the standard deviation, over the last four fiscal years of the yearly change in operating income scaled by total assets at the beginning of the period. • *RISK2:* a proxy for total risk, defined by the standard deviation over the last four fiscal years of the return on the market value of the firm.
SOE	= Percentage of ownership held by the state
|DA|	= Absolute value of discretionary accruals estimated using the modified Jones model; lower values indicate higher audit quality
MODOPIN	= Indicator variable equal to 1 if the audit report contains a qualified or adverse opinion and 0 otherwise; higher values indicate stricter auditor judgment and reporting integrity
AVE_LP_QUALITY	= The average quality of lead partners across other firms in the same industry, used as an instrumental variable for the quality of the lead partner at the focal firm
AVE_RP_QUALITY	= The average quality of review partners across other firms in the same industry, used as an instrumental variable for the quality of the review partner at the focal firm
PRED_LP_QUALITY	= The predicted value of lead partner quality derived from the first stage of the 2SLS model, using industry average quality as the instrumental variable
PRED_RP_QUALITY	= The predicted value of review partner quality derived from the first stage of the 2SLS model, using industry average quality as the instrumental variable

Source(s): Authors' own work

Corresponding author
Javad Rajabalizadeh can be contacted at: javad.j.rajabalizadeh@utu.fi