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CORPORATE TAX AVOIDANCE AND STOCK PRICE CRASH RISK: THE MODERATING ROLE OF AUDIT QUALITY

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ABSTRACT

Drawing on agency theory, this study aims to examine the moderating effect of audit quality on the relationship between corporate tax avoidance and stock price crash risk. Using panel data of 140 firms listed on HOSE and HNX from 2017 to 2024, and addressing endogeneity issues through GMM, the results reveal that audit quality shows a significant moderating effect on the relationship between corporate tax avoidance and stock price crash risk. These results highlight that tax avoidance provides an opportunity for managers to conceal bad information, which may accumulate and trigger stock price collapses, while audit quality mitigates such concealment behavior by the managers, promotes more transparent information disclosure and thereby reduces the stock price crash risk. The study contributes to the literature by showing evidence of these relationships from an emerging market and highlights important implications. Investors should incorporate tax avoidance indicators and also the audit quality of corporates into risk assessments, while policymakers are encouraged to strengthen tax enforcement, enhance disclosure requirements and promote improvements in external audit firms to enhance stock price market transparency and stability.

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1. Introduction

Investors have consistently considered stock price as an indicator reflecting the ability to predict future trends and as a valuable source of information for making investment decisions (Zhen et al., 2025). Therefore, managers are always looking for various ways to maintain their firms' stock prices at a growing level, or at least an acceptable range so as not to adversely affect firms' abilities to raise financial resources (Amini et al., 2020). Despite the fact that financial markets tend to continuously grow up along with the economy development (Emmanuel et al., 2024), in recent years, stock price crash risk has attracted growing attention recently due to their severe consequences for investors and capital markets (Thai et al., 2025). Understanding stock price crash risk is therefore a critical issue for both scholars and practitioners. Prior studies have linked stock price crash risk to factors such as excess perks (N. Xu et al., 2014), short interest (Callen & Fang, 2015), stock liquidity (Chang et al., 2017), and brand capital (Hasan et al., 2022). Beyond these factors, Habib et al. (2018) suggest that human-related dimensions can also be important determinants influencing stock price crash risk, which can be seen from the view of managers. In particular, the extent of corporate tax avoidance can be determined by managers, who will push their firms far away from full tax compliance (Kovermann & Velte, 2019).

Over time, the focus of the literature has increasingly shifted toward the negative consequences of tax avoidance. The role of tax avoidance, which can increase information asymmetry and facilitate managerial opportunism that can lead to crash risk, has been examined in developed countries, with external monitoring as a moderating factor in the study of Kim et al. (2011). Following the empirical evidence of Kim et al. (2011), Garg et al. (2020) also found that tax avoidance is positively associated with stock price crash risk, and more able managers weaken this relationship. Thai et al. (2025) extended this line of research and proved the relationship in an emerging market in the presence of corporate governance.

Moreover, the decision-making process of firms can be strongly influenced by complex relationships of other corporate characteristics or external factors (Qawqzeh, 2023). Among these, audit quality is particularly important, since it enhances the credibility of financial reporting by constraining opportunistic managerial behavior and reducing information asymmetry (Yeung & Lento, 2018). Especially in emerging market, audit firms that have higher quality are perceived to possess more abundant resources and stronger expertise than other audit firms (L. A. Nguyen et al., 2022). When auditors effectively make firms' financial situation to be more transparent, the ability of managers to conceal unfavorable news as a cover for tax avoidance is substantially diminished (Qawqzeh, 2023), therefore reducing the risk caused by tax avoidance (Lungu et al., 2023). Some studies have linked audit quality to corporate tax avoidance (Putri et al., 2023; Rizqia & Lastiati, 2021), and stock price crash risk (Lim et al., 2016; Yeung & Lento, 2018). Nevertheless, the extent to which audit quality moderates the relationship between corporate tax avoidance and stock price crash risk remains largely unexplored in previous studies. Therefore, addressing this gap is crucial for understanding how audit quality may shape the financial consequences of corporate tax avoidance.

Building on these considerations, this study focused on clarifying the link between corporate tax avoidance and stock price crash risk, and on exploring the moderating role of audit quality in that relationship within the context of an emerging market. Accordingly, this study seeks to answer the following research questions:

(1) Is there a relationship between corporate tax avoidance and stock price crash risk?

(2) Is there a relationship between audit quality and stock price crash risk?

(3) Does audit quality moderate the relationship between corporate tax avoidance and stock price crash risk?

This study yielded several key findings, which contributes to the literature by extending the knowledge on corporate tax avoidance, audit quality and stock price crash risk by providing more evidence from an emerging market. The results from this study help clarify the role of audit quality in influencing the connection between corporate tax avoidance and stock price crash risk. The study's findings also provide useful insights for investors by shedding light on the consequences of corporate tax avoidance and audit quality on stock price crash risk as well as the moderating effect of audit quality on the relationship between corporate tax avoidance and stock price crash risk. Also, these evidences can serve as a basis for policymakers to design more effective regulatory measures to enhance corporate tax compliance, improving auditing standards and strengthen market stability.

The subsequent sections of this study include: Section 2, which outlines the theoretical and empirical foundations of the study and develops the hypotheses; Section 3, which presents the research methodology, including model specification and data collection strategy; Section 4, which reports the empirical findings and Section 5, which concludes by highlighting the key contributions, limitations, and suggesting directions for future research.

2. Literature review and hyphothesis development

2.1. Agency theory

Agency theory offer a useful perspective to understand the relationship between corporate tax avoidance and stock price crash risk (Kim et al., 2011). According to agency theory proposed Jensen and Meckling (1976), managers may prioritize personal benefits over other shareholders' interests, especially when their actions are not perfectly observable. This misalignment of interests motivates managers to engage in opportunistic behaviors that conceal unfavorable firm-specific information.

Within this framework, tax avoidance can be viewed as a tool for managers to divert corporate financial resources while concealing their opportunistic actions from shareholders (Desai & Dharmapala, 2006). The accumulation of such hidden negative information over time can lead to the mispricing of the firm's stock. This buildup then creates an illusion of stability, but once the truth emerges, the stock price may crash abruptly (Hutton et al., 2009). Moreover, Bleck and Liu (2007) argue that delayed disclosure enables firms to continue unprofitable projects, worsening their long-term financial outcomes and increasing the likelihood of a sharp correction in asset value. The incentive for such behavior is intensify when managers face external pressures such as tight financial constraints (He & Ren, 2023), and strategic considerations of positioning the firm for future growth or acquisitions may also play a role for such behavior (W. Xu et al., 2023).

In addition, high audit quality is widely regarded as an important factor for reducing information asymmetry between managers and shareholders (Chafai et al., 2024). Auditors with strong expertise and professional integrity are more capable of detecting earnings manipulation (Xie et al., 2003), financial misstatements (Lennox & Wu, 2021), and other opportunistic reporting behaviors from the managers (J. Lee & Park, 2018). By constraining such actions, high-quality audits enhance the transparency and credibility of financial statements (Darmawan, 2023), thereby lowering agency costs and safeguarding shareholder

interests (Alsmady, 2022). Therefore, from an agency perspective, audit quality would be an effective external monitoring mechanism that limits the extent to which managers can use tax avoidance as a cover to pursue their personal benefits (Kanagaretnam et al., 2016), and also lower the likelihood of stock price crashed (Yeung & Lento, 2018).

2.2. Corporate tax avoidance

Desai and Dharmapala (2009) describe tax avoidance as firm's choices among alternative arrangements that lower tax obligations, or as in Kovermann and Velte (2019), tax avoidance is conceptualized as tax planning activities undertaken within the framework of existing tax regulations to minimize taxes payable. This study focuses on the definition that tax avoidance represents a form of legal tax planning, whereby firms exploit incentives, allowances, and ambiguities embedded in tax laws to reduce explicit tax payment, without violating statutory requirements. However, tax avoidance is distinct from tax evasion, and the distinction between these two concepts can be understood from two key perspectives: their relationship with law and their timing. From the first perspective, tax evasion represents an explicit violation of laws, involving the intentional non-disclosure or non-payment of taxes legally owed (Gribnau, 2015). In contrast, tax avoidance refers to firm's utilization of legal loopholes, incentives or ambiguities within tax regulations to reduce the amount of taxes payable to tax authorities (Kovermann & Velte, 2019). From a second perspective of timing factor, tax evasion typically occurs after tax liabilities have been formally incurred, whereas tax avoidance takes place during firm's evaluation and tax planning stages, prior to the formal establishment of tax obligations (Oats & Tuck, 2019).

The literature offers two contrasting perspectives on corporate tax avoidance. The first view perceives tax avoidance as value-enhancing for shareholders. Graham and Tucker (2006) demonstrate that tax planning strategies can substitute for debt financing, thereby improving firm profitability. Similarly, Desai and Dharmapala (2009) argue that under strong corporate governance, tax avoidance aligns with shareholder interests and supports value creation. In this light, tax avoidance is seen as a legitimate form of tax planning that transfers wealth from the government to the firm's owners.

The second view emphasizes the agency costs of tax avoidance. According to Hanlon and Heitzman (2010), complex tax strategies may provide managers with opportunities to obscure firm performance, extract private benefits, or shift risk onto shareholders. K. Chen and Chu (2005) develop a principal-agent framework showing efficiency losses that arise when managers exploit informational asymmetry in tax planning. Crocker and Slemrod (2005) further illustrate how incentive contracts are distorted under costly state falsification associated with tax avoidance strategies. Besides, firms with higher tax avoidance behaviors tend to suffer from reducing firm value through shirking current and future cash flow (X. Chen et al., 2014). Recent studies show that corporate tax avoidance influences firm characteristics, such as market capitalization and stock price reaction (Wang et al., 2019). Empirical evidence supports this view, indicating that tax avoidance often increases firm opacity and is positively associated with risk outcomes such as stock price crash risk (Kim et al., 2011).

2.3. Stock price crash risk

Stock price crash risk refers to the sudden, drastic decline in a firm's stock price within a short period, underpinned by the asymmetry in stock return distribution, typically captured by the conditional skewness measure (J. Chen et al., 2001). Unlike traditional risk metrics

focusing on variance, stock price crash risk specifically highlights downside risk, reflecting the build-up and eventual release of negative firm-specific information (Hutton et al., 2009).

A growing stream of literature emphasizes the role of managerial behavior in shaping crash risk. Some significant factors such as earnings management, which may improve short-term financial performance, they exacerbate long-term stock price crash risk by increasing uncertainty and risk exposure (Neifar & Utz, 2019). In contrast, external regulatory efforts, particularly tax enforcement mechanisms, have been shown to reduce the scope for opportunistic reporting thereby mitigate stock price crash risk, as S. Chen et al. (2022) demonstrated that stronger tax enforcement limits earnings manipulation and enhances a more transparent information environment, thereby reducing stock price crash risk.

Additionally, firm-level corporate governance mechanisms also influence crash risk. Strong governance promotes transparency, timely disclosure, and board accountability, which help reduce information asymmetry (Andreou et al., 2016). Conversely, CEO duality and concentrated ownership weaken oversight and are associated with higher crash risk (B. Francis et al., 2016; Habib & Hasan, 2017). Collectively, managerial behaviors such as earnings management can increase stock price crash risk, whereas both external enforcement and internal governance structures act as forces that negatively influence the risk of stock price crashes.

2.4. Audit quality

DeAngelo (1981) defines audit quality as the probability that auditors have abilities to both detect and report material misstatements, emphasizing its role in constraining managerial opportunism and enhancing investor confidence. High audit quality not only improves transparency of financial reporting, enabling stakeholders to make more informed decisions and reducing uncertainty in capital markets (J. R. Francis, 2004). It also strengthens market discipline by signaling reliability to investors and regulators (Gul et al., 2009).

Audit quality functions as a governance mechanism that directly limits opportunistic practices such as earnings management. H. Chen et al. (2011) show that high-quality auditors constrains earnings management. Evidence from India also indicates that audit quality constrains earnings management while lowering the cost of equity capital, thereby improving financing conditions for firms (Houqe et al., 2017). Moreover, audit quality also serves as a factor that strengthens the effectiveness of firms' financial decisions (Chang et al., 2009). In addition to its role in financial reporting, audit quality is linked to lower stock price crash risk. For example, Lim et al. (2016) shows that high-quality audits enhance financial transparency and reporting credibility, which reduce the likelihood of bad-news hoarding and, in turn, lower the risk of stock price crashes. Thus, audit quality enhances the integrity of financial disclosure and serves as a crucial element of corporate governance that enhances market confidence and limits downside risk.

2.5. Hypothesis development

Drawing on agency theory (Jensen & Meckling, 1976), tax avoidance practices often incentivize managers to conceal unfavorable information, which commonly referred to as bad news hoarding, is frequently driven by managerial opportunism, as managers seek to protect their self-interests (Hanlon & Heitzman, 2010). When managers conceal negative information from the public, this lack of transparency would create conditions that increase the likelihood of crash risk (Hutton et al., 2009). Consequently, stock price is more

likely to crash when firms have higher tax avoidance behavior (Kim et al., 2011). In line with this, Garg et al. (2020) found that stock price crash risk is positively associated with tax avoidance activities among listed firms. In the context of emerging markets, where information asymmetry is proved to be much higher than developed ones (Huynh et al., 2020), the relationship between corporate tax avoidance and stock price crash risk remains significant (Thai et al., 2025). Based on the above arguments, we proposed the following hypothesis:

Hypothesis H1. There is a positive relationship between tax avoidance and stock price crash risk

External audit quality can be an important factor that influence in the reduction of earning management (Dang & Nguyen, 2024). Higher quality of audit restricts manipulation of accounting figures and reduces the change to achieve anticipated profit, and also prevent opportunistic motivation and ability to show unrealistic performance of managers (Khajavi & Zare, 2016). High audit quality also reduces agency costs by preventing expropriation and assuring the credibility of financial statements (Feng et al., 2021). An increase in auditor invlovement can prevent the accumulation of bad news and promote timely release of critical information (S. H. Lee & Jung, 2024). Audit works with high quality will affect both the operating risk and information risk (Han et al., 2023). In addition, auditors have incentive to ensure prompt disclosure of bad news and suppress managers' concealment of unfavorable information, therefore lower the stock price crash risk (Robin & Zhang, 2014). Some previous studies have also indicated that higher audit quality results in lower stock price crash risk (Lim et al., 2016; Yeung & Lento, 2018). With these discussions, we proposed the following hypothesis:

Hypothesis H2. There is a negative relationship between audit quality and stock price crash risk

Audit quality is regarded as an effective factor in regulating financial variables, helping to reduce potential risks and errors that may arise within the firm's financial operation (Santosa et al., 2020). High-quality auditing firms, particularly those in the Big4, are perceived to possess more abundant resources and stronger expertise than other auditing firms (L. A. Nguyen et al., 2022). This enables them to provide more effective support for monitoring firms' financial activities, thereby enhancing risk assessment and improving the disclosure of information (El-Deeb et al., 2024). Independent auditors may face higher risks and greater litigation costs when firms engage in aggressive tax avoidance (Donohoe & Knechel, 2014). As a result, companies audited by external audit firms are forced to comply with full tax obligations, whereas firms audited by non-independent auditors tend to engage more in tax avoidance (Dong et al., 2022). Especially when working with Big4 audit firms, companies tend to be more transparent about their tax-related financial activities, meaning that they comply more fully with tax obligations compared to other firms (Qawqzeh, 2023). Therefore, when fims are audited with high quality auditors, the risk caused by tax avoidance activities is reduced (Lungu et al., 2023). In stock market literature, audit quality has also been proven to play a moderating role in the association between firms' complex financial disclosure activities and the risk they may face, including stock price crash risk (Bakhiet, 2024). Based on the above foundations, we proposed the following hypothesis:

Hypothesis H3. The positive relationship between tax avoidance and stock price crash risk is weakened when firms have higher audit quality

3. Research methodology

3.1. Model specifications and variable measurements

3.1.1. Model specifications

Based on the foundation of agency theory, this study examines the impact of corporate tax avoidance on stock price crash risk using the following model regression:

$$SPCR_{i,t} = \alpha_0 + \alpha_1 CTA_{i,t} + \alpha_2 AQ_{i,t} + \sum_{q=1}^{4} \alpha_q Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $SPCR_{i,t}$ is stock price crash risk for firm i in year t, and $CTA_{i,t}$ is corporate tax avoidance. $Controls_{i,t}$ is the set of control variables including firm size (SIZE), market-to-book ratio (MB), leverage (LEV), and profitability (ROA), which is consistent with prior studies (Garg et al., 2020).

To test the moderating role of audit quality, the following model regression is estimated:

$$SPCR_{i,t} = \alpha_0 + \alpha_1 CTA_{i,t} + \alpha_2 AQ_{i,t} + \alpha_3 (CTA_{i,t} \times AQ_{i,t}) + \sum_{q=1}^{4} \alpha_q Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $AQ_{i,t}$ is the audit quality of firm i in year t. The interaction term $CTA_{i,t} \times AQ_{i,t}$ captures whether audit quality moderates the relationship between corporate tax avoidance and stock price crash risk.

3.1.2. Measurement of corporate tax avoidance

To measure corporate tax avoidance, we use long-run cash effective tax rate (LRETR) proposed by Thai et al. (2025). In practice, it is difficult for managers to avoid corporate income taxes over consecutive years without being detected by the tax authorities (He et al., 2020). Moreover, measuring corporate tax avoidance by using LRETR would be less affected by accurals management activities (Dyreng et al., 2008). Therfore, LRETR would provide a more reliable measurement for corporate tax avoidance.

LRETR is calculated over a period of 4 years, by dividing the total cash tax paid by the total pretax income (excluding special items):

$$LRETR_{i,t} = \frac{\sum_{k=t-4}^{t} cash\_tax\_paid_{i,k}}{\sum_{k=t-4}^{t} (pretax\_income_{i,k} - special\_items_{i,k})}$$

According to Thai et al. (2025), LRETR is particularly effective in identifying firms that are persistently successful in reducing their long-term tax burdens. A lower value of LRETR indicates a higher degree of corporate tax avoidance, whereas a higher LRETR suggests that firms bear a greater share of statutory tax obligations.

3.1.3. Measurement of stock price crash risk

Following J. Chen et al. (2001), we employ negative conditional skewness (NCSKEW) to measure stock price crash risk as it captures the asymmetry of the return distribution and reflects the extent to which returns are skewed toward extreme negative outcomes. NCSKEW are calculated using firm-specific weekly returns:

$$NCSKEW_{i,t} = \frac{-\left[n(n-1)^{\frac{3}{2}} \sum R_{i,t}^3\right]}{\left[(n-1)(n-2)\left(\sum R_{i,t}^2\right)^{\frac{3}{2}}\right]}$$

where $R_{i,t}$ represents the firm-specific weekly returns, which was calculated based on weekly adjusted closing stock price, and n is the number of weeks in the year t. An increase in NCSKEW indicates a higher probability of extreme downward price movements, suggesting that the stock price is more prone to crash risk (J. Chen et al., 2001).

3.1.4. Measurement of audit quality

We employ audit firm size as a measurement for audit quality. Larger audit firms, especially

Big 4, are generally considered to deliver higher-quality audits due to their extensive resources, stronger reputational concerns, and higher exposure to litigation risk (L. A. Nguyen et al., 2022). They also exhibit a higher level of independence due to their lower economic dependence on audited clients, which significantly reduces the probability of misconduct by the audited firms (Bakhiet, 2024). Moreover, Big 4 auditors are more effective in constraining earnings management, detecting irregularities, and mitigating opportunistic managerial behavior (Gaaya et al., 2017), thereby improving the credibility of firms' financial activities. Therefore, following prior studies that use audit firm size to measure audit quality in Vietnamese context (Le et al., 2021; Q. K. Nguyen, 2024; Tran & Tran, 2023), we construct a dummy variable that equals 1 if the external audit company is one of the four largest audit firms in Vietnam (Big 4: Deloitte, PricewaterhouseCoopers, Ernst & Young, and KPMG), and 0 otherwise.

3.2. Control variables

We incorporate several firm-level control variables into the model to mitigate potential omitted variable bias and to ensure that the estimated relationship between corporate tax avoidance and stock price crash risk is not confounded by other firm characteristics. Following Garg et al. (2020), we include firm size (SIZE), market-to-book ratio (MB), leverage (LEV), and profitability (ROA) as control variables. The detailed definitions of those variables are listed in *(see Appendix 1).*

3.3. Data collection

We collect weekly adjusted closing stock price data for firms listed on the HOSE and HNX from Investing.com, audit quality was collected from Vietstock database, while other financial variables were obtained from the FiinPro-X database. Our collected data cover the period from 2017 to 2024.

To have a clean and reliable research sample, we applied the following criteria:

(1) For each year, firms must have annual consolidated financial statements that end on a common fiscal year in accordance with regulatory requirements.

(2) The fiscal year of each firm must remain unchanged throughout the study period to ensure comparability of financial performance across years.

(3) Financial institutions and companies providing financial services are excluded from the sample because their business models differ substantially from those of non-financial performance across years.

(4) Complete financial data must be provided throughout the entire study.

(5) A firm's stock in a year must not be suspended from trading for more than 26 weeks, as prolonged trading suspensions may hinder the accurate calculation of market capitalization and distort measures of stock price crash risk.

(6) Observations with negative pre-tax income, negative cash paid, or negative book values are excluded.

After compiling and cleaning the data, we obtained 1120 firm-year observations from 140 listed companies. Within the sample, observations from HOSE are 816 firm-year observations, while from HNX are 304 observations. Among the firms in our dataset, 28% are from Industrials, 19% from Consumer Goods, followed by Real Estate with 16%, and the remainder from other sectors.

4. Research findings and discussion

4.1. Descriptive statistics

The descriptive statistics of the variables are presented in Table 2 below. Notably, 25% of the firm-year observations in the sample exhibit

an LRETR below 14.4%, which is considerably lower than the statutory corporate income tax rate of 20%, thereby reflecting that a subset of firms in the sample exhibits relatively high levels of corporate tax avoidance. AQ has a mean of 0.401, suggesting that 40.1% firm-year observations are audited by high-quality external audit companies *(see Appendix 2).*

We conducted a correlation matrix analysis among the variables to examine potential issues commonly associated with regression analysis. The results, as reported in Appendix 3 *(see Appendix 3)*, indicate that LRETR shows a negative correlation with NCSKEW (-0.158). This relationship is consistent with the research team's expectations, as a lower long-run cash effective tax rate reflects higher levels of corporate tax avoidance, which in turn is associated with a higher stock price crash risk. Notably, AQ exhibits negative correlations with NCSKEW (-0.061), suggesting that higher audit quality is associated with lower stock price crash risk.

4.2. Empirical test of hypotheses

To examine the presence of multicollinearity, we calculated Variance Inflation Factor (VIF). The results indicate that all VIF values are below 10, suggesting that the model does not suffer from multicollinearity (Midi & Bagheri, 2010). The presence of groupwise heteroskedasticity is confirmed by modified Wald test, which showing a p-value below 0.05. We acknowledge the potential for endogeneity in our analysis as the Wu-Hausman test was conducted to diagnose this concern with the results showing that $p < 0.05$, indicating that our model is suffering from endogeneity issues. In the fixed-effect regression, the issue of endogeneity can arise from the correlation between dependent variables and error term in a regression model, thereby fixed effects estimations can generate biased estimates and lead to invalid conclusions (Li et al., 2021). To mitigate this concern, we employs GMM regressions to simultaneously address endogeneity and account for the dynamic nature of short panel data models (Jin et al., 2021).

Table 4 shows the test results for the relationship between corporate tax avoidance and also the moderating role of audit quality on the coroprate tax avoidance and stock price crash risk relationship. The result indicates LRETR exhibits a negative effect NCSKEW (with $\beta = -0.877$; $p < 0.1$), respectively. Economically, a decrease in LRETR from the 75% percentile (21.8%) to the 25% percentile (14.4%) is associated with an increase of 6.49% (= -0.877 × -0.074) in NCSKEW. These results showed that when long-run cash effective tax rate decreases, indicating higher corporate tax avoidance, firms are more likely to experience higher stock price crash risk, therefore supporting H1. Regarding the effect of AQ on NCSKEW, the result show that AQ has a negative impact on NCSKEW (with $\beta = -0.374$; $p < 0.01$), respectively. Therefore, with higher audit quality, firms will suffer less from stock price crash risk, which confirmed H2. Audit quality is also found to have a significant moderating effect on the relationship between corporate tax avoidance and stock price crash risk (with $\beta = 2{,}778$; $p < 0.01$), meaning that firms with high audit quality are less suffered from the adverse effect of tax avoidance on stock price crashes, which confirmed H3. Control variables are also showed some significant results, with LEV has negative impact on NCSKEW (with $\beta = -0.917$; $p < 0.1$); however, this result is insignificant when the interaction term LRETR × AQ is added into the model. MB is also negatively affect NCSKEW (with $\beta = -0.150$; $p < 0.01$) while ROA and SIZE have positive impacts on NCSKEW (with $\beta = 1.164$; $p < 0.05$ and $\beta = 0.178$; $p < 0.01$), and these results are consistent across the regression models.

Table 1. GMM regressions for relationships

	Model (1)	**Model (2)**
	NCSKEW	NCSKEW
$NCSKEW_{(t-1)}$	-0.060***	-0.058***
	(-3.01)	(-2.67)
LRETR	-0.877*	-1.991***
	(-1.78)	(-3.52)
AQ	-0.374***	-0.890***
	(-4.17)	(-4.05)
LRETR × AQ		2.778***
		(2.83)
LEV	-0.917*	-0.730
	(-1.78)	(-1.37)
MB	-0.150***	-0.134***
	(-3.89)	(-3.55)
ROA	1.164**	1.157**
	(2.37)	(2.37)
SIZE	0.178***	0.151***
	(4.58)	(3.97)
Constant	-6.475***	-5.382***
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Wald chi-squared	1636.45***	1713.67***
Observations	980	980
AR(1) test	z = - 6.22 Pr > z = 0.000	z = - 6.28 Pr > z = 0.000
AR(2) test	z = - 0.98 Pr > z = 0.328	z = - 1.15 Pr > z = 0.252
Sargan test	χ^2 (78) = 72.48 Prob > χ^2 = 0.655	χ^2 (78) = 71.59 Prob > χ^2 = 0.653
Hansen test	χ^2 (78) = 76.82 Prob > χ^2 = 0.516	χ^2 (78) = 75.23 Prob > χ^2 = 0.536

Notes: *Model (1) examines the relationship between corporate tax avoidance, audit quality and stock price crash risk. Model (2) examines the moderating role of audit quality on the corporate tax avoidance and stock price crash risk relationship. Significance levels at ***1%, **5%, *10%, respectively. Values in parentheses are t-statistics.*

NCSKEW is negative conditional skewness; LRETR is long-run cash effective tax rate; AQ is audit quality; LEV is leverage; MB is market-to-book ratio; ROA is profitability; SIZE is firm's size.

4.3. Discussion

The empirical results shows that higher corporate tax avoidance is positively and significantly associated with greater stock price crash risk, thereby supporting H1. This finding is consistent with prior studies that report a positive relationship between corporate tax avoidance and stock price crash risk (Garg et al., 2020; Kim et al., 2011). From an agency theory perspective, tax avoidance can create additional discretion for managers, enabling them to engage in opportunistic behavior and conceal unfavorable information to protect their personal interests. Such behavior would reduce the transparency of financial reporting and allows bad news to remain unreported for extended periods, which can eventually trigger a sharp decline in stock prices when the negative information is revealed (Bleck & Liu, 2007; Hutton et al., 2009).

The results also confirm H2, indicating that audit quality is negatively related to crash risk. Therefore, this finding supports the argument that firms audited by high-quality auditors, particularly those with strong industry expertise, are less prone to sudden stock price crashes because higher audit quality limits managerial discretion and enhances the credibility of financial statements. In addition, high-quality auditors also act as effective external monitors that detect irregularities and constrain opportunistic reporting behavior, which helps mitigate information asymmetry and prevent the accumulation of undisclosed negative information. This finding is consistent with previous studies such as Robin and Zhang (2014) and Lim et al. (2016).

Furthermore, the results also support H3, which confirm that higher audit quality weakens the positive relationship between tax avoidance and crash risk. This moderating effect implies that audit quality serves as an external governance mechanism that constrains managerial behavior and reduces the risk arising from information concealment, in line with the argument of Lungu et al. (2023). The analysis also reveals several significant relationships between firm characteristics and crash risk. Firms with higher leverage and profitability tend to have lower crash risk, while larger firms are more prone to face a higher risk of sudden stock price collapses. These results are in accordance with the findings of Chen et al. (2022) and Ma et al. (2025).

5. Conclusion and implications

5.1. Conclusion

This study contributes to the literature by extending the agency theory framework to incorporate the moderating role of audit quality in the relationship between corporate tax avoidance and stock price crash risk. By employing GMM regression to address the endogeniety issue, and with a sample of 1120 firm-year observations from 2017 to 2024, the findings demonstrate that firms with higher tax avoidance are more likely to experience stock price crashes. At the same time, higher audit quality is proved to weaken the relationship between corporate tax avoidance and stock price crash risk. Therefore, it is essential to acknowledge audit quality as a crucial external mechanism that shapes the relationship between corporate tax avoidance and stock price crash risk. By framing audit quality as a moderating factor that mitigates the negative market consequences of aggressive tax avoidance, this study adds a theoretical dimension highlighting the importance of assurance audit quality in shaping firms' information environments.

5.2. Implications

These results offer several important implications. From an investment perspective, the results highlight the necessity of incorporating tax avoidance indicators, such as long-run cash effective tax rates, into risk assessment frameworks, as persistently low effective tax rates may signal heightened crash risk rather than tax

efficiency. Moreover, investors should examine governance mechanisms and managerial incentives in firms exhibiting tax avoidance strategies, since such practices may enable opportunistic behaviors and delayed disclosure of adverse information, ultimately amplifying crash risk. In addition, investors are encouraged to consider the quality of external audits when evaluating firm risk, as high quality auditors can enhance the transparency and credibility of financial reports, which helps the investors better assess the company's true financial condition and therefore reduce the risk of stock price crashes.

From a policy standpoint, the evidence strengthens the importance of tax enforcement and corporate disclosure requirements, as tax avoidance constitutes not only a fiscal concern but also a source of financial market instability. Therefore, policymakers are encouraged to enhance transparency in tax reporting, and require companies to clearly disclose more information about their tax activities, and also improve coordination between tax authorities and market regulators to mitigate systemic vulnerabilities associated with corporate tax avoidance, along with updated penalty policies to make sure that breaking the rules will cost more than any possible perceived benefits. In addition, regulators should raise the standards of external audit firms to ensure that corporate financial activities are properly monitored. By enforcing stricter auditing standards and improving the independence of auditors, the overall financial activities of can be strengthened, ensuring a more transparent disclosure of information.

5.3. Limitations

Nevertheless, this study has certain limitations that could be addressed in future research. The study context is only focused on Vietnam stock market from 2017 to 2024. Future research is encouraged to broaden the scope by investigating the relationships in other countries and extend the period coverage. Moreover, the use of conventional measure of audit quality may not fully cover some important dimensions such as audit fees or audit-client relationship. Future research could employ alternative measurements for audit quality to explore the relationship of audit quality on corporate tax avoidance and stock price crash risk.

Declaration of generative AI andAI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT (OpenAI, GPT) to improve readability, grammar, and language quality, as well as to assist with translation. The authors reviewed, edited, and took full responsibility for the final content of the manuscript.

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