








“Fraud triangle factors and financial statement fraud: The moderating role of earnings management in an emerging market”

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FRAUD TRIANGLE FACTORS AND FINANCIAL STATEMENT FRAUD: THE MODERATING ROLE OF EARNINGS MANAGEMENT IN AN EMERGING MARKET

Abstract

Financial statement fraud (FSF) continues to undermine investor confidence, particularly in emerging markets where governance enforcement remains uneven. This study examines how Fraud Triangle factors influence FSF and whether earnings management strengthens these relationships in Vietnam. Using a two-step system GMM regression on 138 listed non-financial firms over 2019–2022 to address potential endogeneity concerns, the results show that financial distress significantly increases fraud risk. Firm performance is also positively associated with fraud, implying that pressure to maintain good results may contribute to misreporting. State ownership and foreign ownership are both negatively associated with FSF, indicating that monitoring by these shareholders constrains fraudulent behavior. Industry characteristics proxied by receivables intensity are positively related to fraud, suggesting greater opportunity for manipulation in revenue-related accounts. In contrast, liquidity and auditor reputation do not exhibit statistically significant effects, suggesting that external audit prestige alone may be insufficient to constrain fraudulent reporting in transitional regulatory environments. Importantly, earnings management is positively associated with FSF and significantly strengthens the impact of financial distress on fraud, indicating that discretionary accruals amplify the translation of financial pressure into misreporting. These findings point to the importance of improving financial management, enhancing transparency, and strengthening regulatory oversight to reduce fraud risk and support more effective detection by policymakers, auditors, and investors.

Keywords

financial statement fraud, fraud triangle, earnings management, Vietnam

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INTRODUCTION

Financial statements provide essential information about a company's cash flows, performance, and financial position, supporting informed economic decisions (Ratnasari & Solikhah, 2019). When such information is distorted, market trust may be undermined. Major corporate collapses such as Enron, WorldCom, and Lehman Brothers illustrate how fraudulent financial reporting can undermine investor trust and trigger broader market consequences (Rezaee, 2005).

A widely recognized framework for explaining fraudulent reporting is the Fraud Triangle, which attributes misconduct to the coexistence of financial pressure, opportunity, and rationalization (Cressey, 1953). Although this framework highlights the conditions that motivate fraud, financial reporting itself is shaped by managerial judgment permitted under accounting standards. Earnings management, described as a purposeful intervention in the reporting process undertaken to

obtain private benefits (Schipper, 1989), reflects this discretionary space. The adjustment of earnings through discretionary accounting choices may blur the boundary between permissible reporting and fraudulent misstatement.

This ambiguity points to a broader unresolved issue concerning the interaction between fraud-related pressures and discretionary reporting behavior. While the Fraud Triangle emphasizes incentives for misconduct, it remains unclear whether managerial discretion merely accompanies fraud risk or conditions the way financial pressure translates into financial statement fraud.

These concerns are particularly relevant in emerging-market settings, where governance structures and regulatory enforcement mechanisms continue to evolve (Chen et al., 2006; Abbas, 2017). Vietnam provides an institutional context characterized by concentrated ownership and uneven enforcement. In such an environment, the interaction between traditional fraud incentives and discretionary reporting practices warrants closer examination to better understand how financial statement fraud emerges in transitional markets.

1. LITERATURE REVIEW AND HYPOTHESES

Financial statement fraud involves intentional and economically significant GAAP violations designed to mislead capital market participants. Such misstatements are often employed by managers to bridge the gap between a firm's deteriorating economic reality and the high growth expectations imposed by the capital market (Dechow et al., 2011). A dominant framework for explaining this form of misconduct is the Fraud Triangle (Cressey, 1953; Schuchter & Levi, 2016). According to Cressey (1953), fraudulent financial reporting does not occur randomly but tends to arise when three interrelated conditions are present: pressure or motivation stemming from financial stress, opportunity created by weak monitoring and low detection risk, and rationalization that allows perpetrators to justify improper behavior. When these elements converge, the likelihood of fraud increases substantially. Within this setting, earnings management represents an important behavioral mechanism. According to Healy and Wahlen (1999), managers may use judgment in financial reporting and transaction structuring to alter financial statements and mislead stakeholders about firms' underlying performance. The relationship between fraud-related conditions and financial statement fraud can be examined using both theoretical frameworks and empirical evidence, with earnings management playing a potentially important role in this process.

The Fraud Triangle has been widely used to explain why firms under certain conditions become vulnerable to financial statement fraud. Pressure reflects financial strain and performance expectations that motivate managers to present financial outcomes more favorably than warranted. Empirical evidence shows that financial distress, liquidity constraints, and declining performance can intensify such pressure, thereby increasing incentives for misstatement (Abbas, 2017; Ghazali et al., 2015; Kazemian et al., 2017; Mudel & Jhunjhunwala, 2023; Serly & Eddy, 2020; Yarana, 2023). This pressure may be mitigated when state or foreign ownership imposes stricter oversight and transparency, thereby reducing incentives for misreporting (Anh, 2020; Indiraswari et al., 2025). However, pressure alone does not necessarily result in fraud. Opportunity emerges from environments that permit managerial discretion. Industries requiring significant judgment in asset valuation create conditions consistent with the theory's opportunity element, as such discretion makes manipulation more feasible when operations weaken (Inayanti & Sukirman, 2016; Khamainy et al., 2022; Nia, 2015; Serly & Eddy, 2020; Yendrawati et al., 2019). Rationalization reflects how managers justify misconduct. Although not directly observable, auditor-related factors can signal how easily managers may rationalize improper reporting. Strong audit oversight is associated with lower tolerance for manipulation, aligning with the theory's emphasis on ethical justification (Fitri et al., 2019; Yang, 2022).

Agency theory offers additional insight into how these conditions translate into fraudulent outcomes. When managers control financial reporting decisions but pursue interests that diverge from those of shareholders, information asymmetry creates scope for opportunistic behavior (Meckling & Jensen, 1976). Such agency conflicts become more pronounced under conditions of operational disruption or declining performance-contexts in which managerial incentives to manipulate information increase (Arifian & Januarti, 2023). Governance arrangements may mitigate or exacerbate these conflicts depending on their effectiveness. Ownership structures also influence the severity of agency problems; for instance, managerial or institutional ownership can strengthen monitoring and align incentives, thereby limiting opportunistic reporting behavior (Kusumaa & Fitriani, 2020; Anisykurlillah et al., 2022). However, ownership-based monitoring alone may be insufficient when broader governance and enforcement mechanisms are weak, highlighting the conditional nature of agency-based controls (Kusumaa & Fitriani, 2020; Mardiana, 2015).

Despite the theoretical expectation that pressure and opportunity jointly shape fraud risk, empirical findings remain mixed. Financial conditions, commonly viewed as indicators of pressure, illustrate this ambiguity. Some studies associate low liquidity with heightened incentives to misstate financial information (Kazemian et al., 2017), while others report no significant relationship (Anisykurlillah et al., 2022; Arifian & Januarti, 2023; Nia, 2015; Serly & Eddy, 2020; Sunardi & Amin, 2018; Supartini et al., 2024; Yarana, 2023). One explanation advanced in the literature is that managers may prioritize manipulating profitability measures rather than liquidity indicators, as earnings attract greater attention from investors and creditors. Evidence on firm performance similarly reveals contrasting patterns. While poor performance can increase pressure to engage in misstatement (Kazemian et al., 2017), fraud has also been observed in well-performing firms where favorable results reduce external scrutiny and facilitate concealment (Safiq & Seles, 2019; Sunardi & Amin, 2018). These findings suggest that the impact of financial pressure depends not only on economic conditions but also on the strength of monitoring and the scope of managerial discretion. The

effectiveness of external monitoring mechanisms further reflects this conditionality. High-quality auditors are generally associated with lower fraud risk due to stricter audit procedures and enhanced detection capabilities (Arifian & Januarti, 2023; Rahman et al., 2016). Nevertheless, other studies find no significant relationship between auditor reputation and financial statement fraud, indicating that audit quality alone may not curb misconduct when internal controls are weak or when collusion undermines the audit process (Kusumaa & Fitriani, 2020; Mardiana, 2015). These mixed results underscore that opportunity-reducing mechanisms often operate only in conjunction with effective internal governance.

A substantial stream of literature focuses on earnings management as a behavioral response to financial pressure and reporting incentives. Some studies argue that earnings management remains within legal and accounting boundaries and does not necessarily imply fraudulent intent (Khamainy et al., 2022). Other evidence suggests that earnings management may escalate into financial statement fraud when firms face sustained distress or deteriorating performance, particularly when monitoring mechanisms fail to constrain managerial discretion (Abbas, 2017; Li et al., 2020; Md Nasir et al., 2018; Rahman et al., 2016; Wilamsari et al., 2022). Findings on financial distress reinforce this view. While some studies report a direct association between distress and fraud (Mardiana, 2015), others indicate that distress initially leads to earnings manipulation, with fraud emerging only when pressure persists and opportunities remain (Li et al., 2020; Wilamsari et al., 2022). Additional evidence of non-significant effects suggests that distress alone may be insufficient to trigger fraud without enabling conditions (Safiq & Seles, 2019). Thus, these studies point to earnings management as a potential mechanism through which pressure is translated into fraudulent reporting, rather than as an isolated determinant.

Evidence from Vietnam and other emerging and developing economies reflects these broader patterns while highlighting the importance of contextual factors. Prior studies show that financial instability increases fraud risk and that managerial attitudes and the quality of internal controls

shape how firms respond to pressure (Nguyen et al., 2018). Governance-related mechanisms also matter in this context, as institutional ownership has been found to constrain fraud in underperforming firms (Chen et al., 2006). More recent evidence further indicates that intensive monitoring by institutional shareholders can limit earnings manipulation and reduce the likelihood of accounting scandals, particularly in environments where firms face financial pressure (Obagbuwa et al., 2024). Other research emphasizes the role of financial stability concerns and stakeholder expectations in shaping reporting behaviour (Indiraswari et al., 2025), while distressed firms have been shown to adjust reported earnings upward to alleviate debt-related pressures (Habib et al., 2013; Vy, 2020). These findings illustrate how pressure and managerial discretion interact in a setting where governance structures and regulatory enforcement are still developing, making Vietnam a relevant context for examining whether earnings management alters fraud-related relationships.

Overall, prior research documents diverse and sometimes conflicting evidence on how pressure, opportunity, governance conditions, and managerial discretion shape financial statement fraud (Nia, 2015; Schuchter & Levi, 2016; Serly & Eddy, 2020; Tshikovhi et al., 2025). These inconsistencies suggest that additional mechanisms may influence how fraud-related conditions translate into fraudulent outcomes. In particular, relatively few studies explicitly examine whether earnings management moderates these relationships, especially in emerging markets with evolving governance systems.

Accordingly, this study examines the determinants of financial statement fraud in Vietnamese listed firms and the moderating role of earnings management, leading to the following hypotheses:

- H1: *Financial distress has a positive impact on financial statement fraud.*
- H2: *Firm performance has a negative impact on financial statement fraud.*
- H3: *Liquidity has a negative impact on financial statement fraud.*

H4: *State ownership has a negative impact on the likelihood of financial statement fraud.*

H5: *Foreign ownership has a negative impact on the likelihood of financial statement fraud.*

H6: *Earnings management has a positive impact on financial statement fraud.*

2. METHODOLOGY

Guided by the Fraud Triangle theory (Cressey, 1953) and drawing on prior empirical evidence in international contexts (e.g., Inayanti and Sukirman, 2016; Safiq and Seles, 2019; Indiraswari et al., 2025), this study develops a model to examine the determinants of financial statement fraud (FRAUD) and the moderating role of earnings management (EM). The model is specified as:

$$\begin{aligned} FRAUD_{it} = & \beta_0 + \beta_1 DISTRESS_{it} + \beta_2 EM_{it} \\ & + \beta_3 DISTRESSEM_{it} + \beta_4 FINPERF_{it} \\ & + \beta_5 PO_{it} + \beta_6 FO_{it} + \beta_7 LIQUIDITY_{it} \\ & + \beta_8 RECEIVABLE_{it} + \beta_9 AR_{it} + \varepsilon_{it}. \end{aligned} \quad (1)$$

In this model, financial statement fraud (FRAUD) is the dependent variable. Fraud-related pressures, incentives, and opportunities are reflected in financial distress (DISTRESS), firm performance (FINPERF), liquidity (LIQUIDITY), state ownership (PO), and foreign ownership (FO). Earnings management (EM) is included as a moderating variable, while industry characteristics (RECEIVABLE) and audit firm reputation (AR) serve as control variables.

FRAUD is measured using the Beneish M-score (Beneish, 1999), which is commonly applied in settings where confirmed fraud cases are limited (Li et al., 2020; Wilamsari et al., 2022). Financial distress (DISTRESS) is measured using Altman's Z-score (Altman, 1968), with lower values indicating greater distress. Earnings management is estimated using the Kothari et al. (2005) model, which extends the modified Jones framework by incorporating return on assets (ROA) to control for firm performance. This model is widely used in empirical accounting research to obtain more reliable estimates of discretionary accruals. Measurement models are presented as follows.

2.1. Beneish M-score model (Beneish, 1999)

$$\begin{aligned}
 M\text{-score} = & -4.840 + 0.920 \cdot DSRI \\
 & + 0.528 \cdot GMI + 0.404 \cdot AQI + 0.892 \cdot SGI \\
 & + 0.115 \cdot DEPI - 0.172 \cdot SGAI \\
 & + 4.697 \cdot TATA - 0.327 \cdot LVGI,
 \end{aligned} \tag{2}$$

where *DSRI* – receivables-to-sales ratio in year *t* relative to year *t*–1, *GMI* – gross margin in year *t*–1 relative to gross margin in year *t*, *AQI* – non-current asset intensity (excluding PPE) in year *t* relative to year *t*–1, *SGI* – sales growth ratio (sales in year *t* divided by sales in year *t*–1), *DEPI*: depreciation rate in year *t*–1 relative to year *t*, *SGAI* – Selling, General, and Administrative Expenses-to-sales ratio in year *t* relative to year *t*–1, *TATA* – total accruals scaled by total assets in year *t*, *LVGI* – leverage ratio in year *t* relative to year *t*–1.

2.2. Z-score model (Altman, 1968)

$$\begin{aligned}
 Z\text{-Score} = & 1.2X1 + 1.4X2 + 3.3X3 \\
 & + 0.6X4 + 1.0X5,
 \end{aligned} \tag{3}$$

where *X1* – Working capital to total assets; *X2* – Retained earnings to total assets; *X3* – Earnings before interest and taxes (EBIT) to total assets; *X4* – Market value of equity to book value of total liabilities; *X5* – Sales to total assets.

2.3. Kothari et al. (2005) discretionary accruals model

Determine non-discretionary accruals using the following regression model:

$$\begin{aligned}
 \frac{NDA_{it}}{A_{i(t-1)}} = & \beta_1 \frac{1}{A_{i(t-1)}} + \beta_2 \frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{i(t-1)}} \\
 & + \beta_3 \frac{PPE_{it}}{A_{i(t-1)}} + \beta_4 \frac{ROA_{i(t-1)}}{A_{i(t-1)}} + \varepsilon_{it}.
 \end{aligned} \tag{4}$$

Determine total accruals as the difference between net income and operating cash flows:

$$TA_{i,t} = NI_{it} - CFO_{it}. \tag{5}$$

After estimation, discretionary accruals are determined as:

$$EM_{it} = TA_{i,t} - NDA_{it}, \tag{6}$$

where ΔREV_{it} – Change in net revenue of firm *i* in year *t*, ΔREC_{it} – Change in accounts receivable of firm *i* in year *t*, *PPE_{it}* – Property, plant, and equipment of firm *i* in year *t*, *ROA_{it}* – Return on assets, *A_{i(t-1)}* – Total assets of firm *i* at the end of year *t*–1, *NI_{it}* – Net income from operating activities of firm *i* in year *t*, *CFO_{it}* – Net cash flows from operating activities of firm *i* in year *t*.

Firm performance (FINPERF) is measured as the ratio of net profit after tax to total current liabilities. Liquidity (LIQUIDITY) is defined as the ratio of current assets to current liabilities. State ownership (PO) and foreign ownership (FO) are measured as the percentage of shares held by the state and foreign investors, respectively. Industry characteristics (RECEIVABLE) are proxied by the ratio of receivables to net sales, while audit firm reputation (AR) is coded as a dummy variable equal to one for Big4 auditors and zero otherwise (Table 1).

Table 1. Variable definitions and measurements

Source: Authors' collection.

The definitions and measurements of variables	
Financial statement fraud (FRAUD)	Measured by the Beneish M-score model (1999)
Financial distress (DISTRESS)	Measured by the Altman Z-score model (1968)
Firm performance (FINPERF)	Ratio of net profit after tax to total current liabilities
Liquidity (LIQUIDITY)	Ratio of total current assets to total current liabilities
State ownership (PO)	The percentage of shares held by the state
Foreign ownership (FO)	The percentage of shares held by foreign investors
Earnings management (EM)	Measured by the Kothari et al. (2005) model
Nature of industry (RECEIVABLE)	Ratio of accounts receivable to net sales
Audit firm reputation (AR)	Dummy variable, 1 = Big4, 0 = non-Big4

The dataset consists of audited financial statements and annual reports obtained from Refinitiv, the Banking Technology Development Research Institute (VNU-HCM), and Vietstock. Firms were selected based on three conditions: (i) complete data availability for the study period, (ii) a consistent fiscal year ending on December 31, and (iii) uninterrupted listing on the Ho Chi Minh City Stock

Exchange (HOSE). An initial set of 348 firms met these criteria. HOSE was chosen because its disclosure and governance requirements are stricter than those of other Vietnamese exchanges, making it a suitable setting for examining financial reporting behavior. After screening for missing values, inconsistencies, and data reliability, the final sample consisted of 138 firms, yielding 552 firm-year observations from 2019 to 2022. This period is particularly relevant, as it captures both normal operating conditions and the shocks associated with COVID-19, which may influence earnings management and fraud incentives. The study employs the two-step system GMM estimator to address potential endogeneity arising from the joint determination of financial distress, earnings management, and fraudulent reporting. This approach controls for unobserved firm-specific effects and dynamic relationships within the panel structure. Model validity is assessed using the Arellano–Bond test for second-order serial correlation (AR(2)) and the Hansen test of overidentifying restrictions. The hypotheses are evaluated based on the estimated coefficients.

3. RESULTS

Table 2 presents the descriptive statistics for the variables employed in the analysis. The Beneish M-score (FRAUD) records a mean of -1.589 , ranging from -5.78 to 3.29 , indicating notable variation in the likelihood of financial statement fraud among sample firms. The financial distress index (DISTRESS) averages 2.016 , with extreme values from -6.17 (severe distress) to 10.15 (strong financial health), suggesting the presence of both highly vulnerable and financially resilient firms. Earnings management (EM) and its interaction term with financial distress

Table 2. Descriptive statistics of variables

Source: Authors' calculations.

Variable	Obs	Mean	Std. Dev.	Min	Max
FRAUD	552	-1.589	1.365	-5.780	3.290
DISTRESS	552	2.016	1.438	-6.172	10.145
EM	552	$7.07e+09$	$1.02e+12$	$-4.85e+12$	$8.71e+12$
DISTRESSEM	552	$-3.99e+10$	$2.15e+12$	$-1.86e+13$	$2.53e+13$
FINPERF	552	0.055	0.076	-0.483	0.654
FO	552	0.100	0.154	0	0.860
PO	552	0.104	0.224	0	0.992
LIQUIDITY	552	2.034	2.005	0.100	20.550
RECEIVABLE	552	0.0182	0.323	-2.620	4.593

(DISTRESSEM) show exceptionally high dispersion, as reflected in their large standard deviations, consistent with heterogeneous reporting practices across firms. Average financial performance (FINPERF) is 5.5% , relatively modest and likely influenced by pandemic-induced economic pressures during 2019–2022. Ownership structures also vary: foreign ownership (FO) averages 10% but ranges from zero to over 86% , while state ownership (PO) averages only 10.4% , reflecting limited public float in many firms. Liquidity exhibits wide variation (mean of 2.03 ; min 0.1 , max 20.55), while receivables remain low on average (1.82% of total assets) but with substantial dispersion. These statistics highlight the heterogeneity of the sample and provide initial insights into the potential influence of firm-specific characteristics on financial statement fraud.

The descriptive statistics for the qualitative variable in Table 3 show that, out of 552 firm-year observations, 379 (68.66%) were audited by Big4 firms, whereas 173 observations (31.34%) were audited by non-Big4 auditors.

Table 3. Descriptive statistics by audit firm reputation variable

Source: Authors' calculations.

Auditor reputation	Obs	Percentage (%)
Big4	379	68.66
Non-Big4	173	31.34
Total	552	100

As shown in Table 4, all Pearson correlation coefficients among the variables are relatively low, with no coefficient exceeding 0.20 except for the expected strong association between EM and the interaction term DISTRESSEM. The dependent variable, FRAUD, exhibits only weak correlations with the explanatory variables, suggesting limit-

Table 4. Pearson correlation coefficient matrix

Source: Authors' calculations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) FRAUD	1.0000									
(2) DISTRESS	-0.006***	1.0000								
(3) EM	0.206	-0.050***	1.0000							
(4) DISTRESSEM	0.203	-0.088***	0.827	1.0000						
(5) FINPERF	-0.134***	0.380	-0.023***	-0.028***	1.0000					
(6) FO	-0.045***	-0.017***	-0.031***	-0.014***	-0.0103***	1.0000				
(7) PO	-0.059***	-0.080***	0.054*	0.014**	0.041**	-0.021***	1.0000			
(8) LIQUIDITY	0.016**	0.134	-0.016***	-0.030***	0.197	-0.025***	-0.077***	1.0000		
(9) RECEIVABLE	0.099*	-0.0486***	0.026**	0.034**	-0.049***	-0.007***	-0.041***	0.249	1.0000	
(10) AR	0.006***	0.055*	0.037**	0.047**	0.091*	-0.021***	-0.060***	0.035**	0.066*	1.0000

Note: *** p < 0.01, ** p < 0.05, * p < 0.10.

Table 5. Results of multicollinearity test between variables

Source: Authors' calculations.

Variable	DISTRESS	EM	DISTRESSEM	FINPERF	FO	PO	LIQUIDITY	RECEIVABLE	AR	Mean VIF
VIF	1.19	3.2	3.21	1.09	1.00	1.02	1.22	1.13	1.02	1.56
1/VIF	0.841	0.313	0.312	0.920	0.997	0.979	0.819	0.882	0.979	

ed risk of multicollinearity. These patterns indicate that financial distress, earnings management, and industry characteristics may relate to fraud but do not move closely enough to distort estima-

tion. Consistent with this, the Variance Inflation Factor values are all below 10 (mean VIF = 1.56), confirming that multicollinearity does not pose a concern for the regression models (Table 5).

Table 6. Two-step System GMM regression

Source: Authors' calculations.

Variable	GMM
DISTRESS	0.082** (2.24)
EM	1.16e-13*** (3.40)
DISTRESSEM	6.08e-14*** (5.82)
FINPERF	1.139** (2.46)
FO	-0.994*** (-3.70)
PO	-0.378*** (-3.82)
LIQUIDITY	0.019 (0.70)
RECEIVABLE	0.364*** (5.86)
AR	-0.031 (-0.40)
-cons	-1.789*** (-14.43)
N	552
Number of groups	138
AR(1) p-value	0.000
AR(2) p-value	0.712
Hansen test (p)	0.511
Sargan test (p)	0.171

Note: *** p < 0.01, ** p < 0.05, * p < 0.10.

Table 6 reports the results of the two-step system GMM estimation. The Arellano–Bond test indicates significant first-order serial correlation (AR(1), $p = 0.000$), which is expected in first-differenced equations, while no evidence of second-order serial correlation is detected (AR(2), $p = 0.712$), supporting the consistency of the estimator. The Hansen test ($p = 0.511$) and the Sargan test ($p = 0.171$) do not reject the null hypothesis of instrument validity, suggesting that the instrument set is appropriate and the model is correctly specified. Overall, these diagnostic results confirm the suitability of the two-step system GMM approach for the empirical analysis.

4. DISCUSSION

The results presented in Table 6 suggest that financial distress, earnings management, and ownership structure play an important role in explaining fraudulent reporting.

Financial distress (DISTRESS) is positively associated with financial statement fraud, indicating that firms under financial strain are more likely to misstate their financial reports. This finding suggests that deteriorating financial conditions increase managerial incentives to manipulate reported results to present a healthier financial position. The result echoes earlier evidence by Li et al. (2020), Md Nasir et al. (2018), and Wilamsari et al. (2022), which identifies financial pressure as a persistent driver of misstatement. However, prior studies report mixed evidence regarding whether distress exerts a direct effect on fraud or operates indirectly through earnings manipulation (e.g., Safiq & Seles, 2019; Mardiana, 2015). Our findings provide support for the direct-effect view, while also showing that this relationship is not uniform but conditional upon managerial reporting behavior. From the perspective of the Fraud Triangle Theory (Cressey, 1953), financial distress represents a key source of pressure that motivates fraudulent behavior. Agency theory further explains how this pressure can translate into misreporting, as information asymmetry allows managers to pursue self-interested reporting choices that are not fully observable to shareholders (Meckling & Jensen, 1976).

Importantly, the results indicate that the interaction term between financial distress and earnings management (DISTRESSEM) is positive and mar-

ginally significant, while earnings management (EM) itself exhibits a strong positive association with financial statement fraud. These results indicate that financial distress alone does not fully explain fraudulent reporting behavior; rather, its effect is amplified when firms actively engage in earnings management. This evidence contributes to the ongoing debate in the literature regarding whether earnings management should be treated as a separate phenomenon or as a stepping stone toward fraud. While some studies argue that earnings management remains within legal reporting discretion (Khamainy et al., 2022), others suggest that persistent manipulation under financial pressure may escalate into fraudulent reporting (Habib et al., 2013; Li et al., 2020). Our results empirically reconcile these views by showing that earnings management becomes particularly problematic when combined with financial distress.

This pattern suggests that discretionary accounting choices may serve as a channel through which financial pressure is associated with higher fraud risk. This interpretation is consistent with the Fraud Triangle framework (Cressey, 1953), under which earnings management can be viewed as part of the opportunity or rationalization elements that pave the way for fraudulent reporting by allowing managers to exercise discretion over reported results. From an agency theory perspective (Meckling & Jensen, 1976), such discretion becomes more relevant when information asymmetry limits shareholder oversight, enabling managers to pursue self-interested reporting choices. When considered jointly with financial distress, the findings suggest that earnings management is more likely to be associated with financial statement fraud under conditions of heightened financial pressure, consistent with prior empirical evidence (Habib et al., 2013; Vy, 2020; Wilamsari et al., 2022).

By jointly considering financial distress and earnings management, these findings extend existing empirical evidence, which often examines the two factors separately, and suggest that earnings management plays an important role in translating financial pressure into financial statement fraud. Prior international evidence shows that firms experiencing financial strain are more likely to exhibit earnings manipulation behaviors that can be detected through quantitative models such as the Beneish M-Score (Holda, 2020). This evidence implies that

earnings management may serve as an observable manifestation of managerial responses to financial pressure rather than an isolated reporting choice. In emerging markets such as Vietnam, where earnings smoothing practices are relatively common and may remain undetected due to underdeveloped internal control systems and limited regulatory oversight, the coexistence of high financial distress and managerial discretion is likely to increase the probability of financial misstatement. In the absence of strong enforcement mechanisms, managers may rationalize such practices as temporary and acceptable responses to economic volatility, thereby reinforcing the rationalization component of the fraud triangle.

In contrast to the conventional expectation that weak performance increases fraud risk, the GMM results show that firm performance (FINPERF) is positively and significantly associated with financial statement fraud. While prior studies link poor performance to greater pressure to misreport (Kazemian et al., 2017; Anisykurlillah et al., 2022), other evidence documents fraud among well-performing firms where strong results reduce scrutiny and facilitate concealment (Safiq & Seles, 2019; Sunardi & Amin, 2018). The present findings align more closely with this latter view, suggesting that fraud risk may also stem from incentives to sustain high performance. From the perspective of the Fraud Triangle (Cressey, 1953) and agency theory (Meckling & Jensen, 1976), performance maintenance pressures and reputational concerns may motivate opportunistic reporting, particularly in environments with evolving enforcement mechanisms such as Vietnam.

Ownership structure is negatively associated with financial statement fraud, with both state ownership and foreign ownership linked to a lower likelihood of fraudulent reporting. This result suggests that these forms of ownership play a governance role by strengthening oversight and increasing transparency, thereby limiting opportunities for managerial misreporting. This finding is consistent with prior empirical evidence indicating that higher state ownership is associated with stricter compliance requirements and closer monitoring, which can deter managers from engaging in financial statement manipulation (Chen et al., 2006). Similarly, foreign ownership has been shown to mitigate fraud risk by enhancing monitoring and imposing higher governance and reporting standards, as foreign investors

often demand greater transparency and adherence to international practices (Kusumaa & Fitriani, 2020; Mardiana, 2015). These results align with the Fraud Triangle framework (Cressey, 1953), in which effective governance mechanisms reduce opportunities for fraudulent reporting. In addition, agency theory (Meckling & Jensen, 1976) provides further explanation by suggesting that the presence of state and foreign shareholders can alleviate information asymmetry and constrain managerial opportunism.

Prior research cautions that ownership concentration does not automatically ensure effective monitoring in weak governance environments (Kusumaa & Fitriani, 2020; Mardiana, 2015). The results here refine this view by showing that, in Vietnam, ownership appears to operate as a substantive governance mechanism. In a context where enforcement remains uneven, IFRS adoption is not yet mandatory, and external oversight is limited, the presence of state or foreign shareholders may compensate for weak regulatory monitoring. State ownership is often accompanied by stricter reporting discipline due to institutional accountability, while foreign investors typically promote adherence to transparency benchmarks and alignment with international financial reporting practices. These governance features help limit opportunities for misreporting and reinforce the role of ownership structure in mitigating fraud risk in transitional markets such as Vietnam.

The receivables ratio is positively associated with financial statement fraud, suggesting that higher receivables relative to sales may increase opportunities for misstatement through aggressive revenue recognition or delayed collection. This finding is consistent with Inayanti and Sukirman (2016) and Yendrawati et al. (2019). Importantly, this result reinforces the opportunity dimension of the Fraud Triangle by demonstrating that industry-specific accounting discretion interacts with financial pressure to elevate fraud risk.

Two factors, liquidity and auditor reputation, show no statistically significant relationship with fraud. While some prior studies document a negative association between audit quality and fraudulent reporting (Rahman et al., 2016; Arifian & Januarti, 2023), the Big4 coefficient in this study is not statistically significant. This result suggests that, within the Vietnamese setting, the presence of a reputable audi-

tor does not automatically translate into a lower likelihood of financial statement fraud.

One possible interpretation is that audit reputation may not operate as an independent deterrent when broader institutional mechanisms remain underdeveloped. In environments where regulatory enforcement is evolving and legal sanctions are not consistently stringent, the monitoring role of external auditors may depend heavily on complementary governance structures. Under such conditions, formal audit quality signals may be less effective in constraining managerial opportunism, particularly when financial pressure and discretionary reporting coexist. This finding resonates with the stream of literature indicating that the effectiveness of audit quality is conditional rather than universal (Kusumaa & Fitriani, 2020; Mardiana, 2015). Rather than contradicting prior evidence, the results help explain why empirical findings on the Big4–fraud relationship remain mixed across institutional contexts. In more mature regulatory environments, auditor reputation

may serve as a strong deterrent, whereas in transitional markets its impact appears more limited unless reinforced by stronger enforcement and internal control systems. The absence of a significant Big4 effect does not mean that audit quality is unimportant. Instead, it indicates that the effectiveness of external auditing is shaped by the broader institutional setting, particularly the strength of enforcement and governance mechanisms.

Overall, the findings provide empirical support for key elements of the Fraud Triangle by confirming the role of financial pressure and opportunity in shaping fraud risk, while highlighting the governance function of ownership structure in mitigating such risk. Importantly, by explicitly modeling the moderating role of earnings management, the results indicate that the effect of financial distress on fraud is conditional rather than automatic. Together, these findings underscore the relevance of both behavioral incentives and institutional governance mechanisms in explaining fraud dynamics in emerging market settings.

CONCLUSIONS

This study examines how financial distress, industry characteristics, and earnings management influence the risk of financial statement fraud in an emerging market setting.

The results show that financial distress and receivables intensity increase fraud risk, while firm performance is positively associated with fraud, suggesting that misreporting may arise not only from financial difficulties but also from efforts to maintain strong performance. State and foreign ownership are associated with lower fraud, indicating a monitoring role. In addition, earnings management not only relates positively to fraud but also strengthens the effect of financial distress on fraudulent reporting. This interaction highlights how established fraud drivers operate within a context of concentrated ownership and uneven regulatory enforcement, such as in Vietnam.

The findings imply that firms should place greater emphasis on maintaining financial discipline, particularly in managing cash flows and receivables, to prevent financial distress or performance-maintenance incentives from escalating into fraudulent behavior. Greater participation by state or foreign shareholders may further enhance oversight and promote more transparent reporting practices. Although auditor reputation is not found to be statistically significant in this study, prioritizing independent and high-quality audit services may still help limit managerial discretion and reduce opportunities for manipulation. These measures can contribute to improving market integrity and lowering the risk of fraudulent financial reporting.

The study has limitations. The quantitative measures of fraud and earnings management may not fully capture managerial intent or internal processes. Future research could use qualitative evidence or behavioral data and include governance and internal control variables to better explain how fraud develops and why some firms are more vulnerable.

AUTHOR CONTRIBUTIONS

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DATA AVAILABILITY STATEMENT

The processed dataset supporting the findings of this study is publicly available in Zenodo at <https://doi.org/10.5281/zenodo.18697902>

COMPETING INTERESTS

The authors declare that they have no competing interests.

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