# “The impact of financial distress on earnings management: Evidence from Vietnam”


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# THE IMPACT OF FINANCIAL DISTRESS ON EARNINGS MANAGEMENT: EVIDENCE FROM VIETNAM

## Abstract

Prompted by the recent increase in accounting manipulation cases and the deterioration in Vietnam, this study investigates the significance of earnings management and whether financial distress leads to increased earnings management in corporate activities. This study examines the impact of financial distress on earnings management among firms listed on Vietnam's stock exchanges from 2013 to 2024, a period when significant changes in economic conditions occurred. The article has utilized the Modified Jones Model and Raman and Shahrur Model to analyze the influence of financial distress and other factors on the earnings management of listed companies. The regression results provide evidence that firms with mild distress tend to engage more in income-increasing practices, while those under severe distress show a reduced tendency to manipulate earnings. However, the relationship between financial distress and income-decreasing earnings management remains inconclusive. These findings underscore the need for enhanced transparency and differentiated oversight mechanisms in Vietnam's financial reporting environment, especially for firms not immediately flagged as financially risky. The research contributes to the existing literature by offering new insights into managerial behavior under varying financial conditions in an emerging market context.

**Keywords** financial distress, earnings management, FEM, Vietnamese listed firms

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## INTRODUCTION

The primary objective of financial statements is to provide reliable and timely information about a company's financial performance and position, not only to internal management but also to external stakeholders, enabling informed decision-making. High-quality financial reporting enhances transparency and credibility, yet financial reporting fraud has become increasingly prevalent over the past few decades, particularly in publicly traded firms where the pressure to meet market expectations often leads to unethical financial practices. Manipulating financial statements to inflate earnings, conceal financial distress, or mislead investors is a growing concern worldwide, including in Vietnam, where several notable financial scandals have emerged in recent decades. The 2022–2023 bond market crisis, real estate distress, and market manipulation led to a decrease in investor confidence, and the transition from the frontier to the emerging market of Vietnam was affected. Most problems related to bond market crisis, real estate distress, and market manipulation are derived from the earnings management or manipulation of financial statements. Numerous studies have explored various aspects of earnings management, particularly in relation to firms' financial health (Li et al., 2020; Do & Linh, 2020). The inherent flaws and loopholes in accounting systems, coupled with the flexibility in selecting accounting

policies, provide managers with significant discretion in preparing financial statements. The motivations behind earnings management are diverse, with one of the primary drivers being market reaction. When a company does not meet earnings forecasts, it risks a negative market response, which can lead to a decline in stock prices and ultimately impact executive compensation. This problem becomes even more serious when a company experiences financial difficulties and, accordingly, the level of financial statement manipulation increases.

## 1. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Earnings management has been considered by internal managers, scholars, and stakeholders for many years to answer the question of why earnings management takes place, how it is achieved, and how it impacts making economic decisions. Healy and Wahlen (1999) described earnings management as "managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting practices". Thus, earnings management will result in reported earnings not reflecting a unit's true performance, thereby reducing the quality of published accounting information and creating information risks, leading to inaccurate decisions and possibly leading to many consequences for the market.

The relationship between financial distress and earnings management has been investigated in previous research in different financial markets to understand whether companies in financial distress would manipulate their financial statements to meet the requirements of the State Securities Commission of Vietnam. When companies are in financial distress, they intend to manipulate their earnings to meet debt covenants, stakeholder confidence, analyst forecasts, equity financing, or job protection, etc. The effects of financial distress on earnings management have been an issue of increasing academic interest, as financially distressed firms are often found to exhibit higher tendencies to manipulate earnings (Chen et al., 2001; Doumpos & Zopounidis, 1999; Ranjbar & Amanollahi, 2018). Financial pressure may incentivize managers to alter accounting figures to present a more favorable image of a firm's financial position, protect their reputation, meet debt covenants, or avoid regulatory scrutiny (Rosner, 2003). Rosner (2003) analyzed 293 bankrupt firms and showed evidence that firms appeared to be distressed approaching bankruptcy, and their financial statements were manipulated by increasing accrual magnitudes. Under financial distress, managers are more likely to engage in accrual-based earnings management (AEM), as it offers a convenient way to manipulate earnings without altering actual business operations. This is especially true when firms approach debt contract thresholds or are under heightened observation by lenders and investors. Empirical studies, such as those by Sweeney (1994) and DeFond and Jiambalvo (1994), found that firms close to breaching debt covenants are more likely to report inflated earnings through discretionary accruals. Furthermore, real earnings management (REM) becomes a relevant tool during financial downturns. Distressed firms may, for instance, cut essential expenditures like R&D or advertising to boost short-term profits, or accelerate sales through aggressive discounting – even at the cost of long-term performance. Roychowdhury (2006) used the COMPUSTAT database for the period 1987 to 2001 to show that firms engaged in earnings management to avoid reporting annual losses. The author highlighted that such real activity manipulation tends to increase significantly in financially stressed firms. The existing literature reveals that previous studies provide evidence concerning the nature of the relationship between earnings management and financial distress. These inconclusive findings can be attributed to several contextual and methodological differences, including variations in audit quality (Etemadi et al., 2013), internal control systems (Li et al., 2020), and national corporate cultures, which influence managerial accounting choices and professional judgment (Selahudin et al., 2014). Moreover, existing studies have predominantly relied on a single


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model for estimating both earnings management and financial distress, which may undermine the robustness of findings. According to Chen (2010), deriving conclusions from a single model is inadequate, as it may not fully capture the complexities of earnings management behavior. In response to this methodological gap, the present study employs two distinct models for estimating earnings management – namely, the Modified Jones Model (Jones, 1991) and the Raman and Shahrur Model (Raman và Shahrur, 2008) – to provide a more comprehensive and reliable analysis.

In emerging markets, such as Vietnam, the problems of earnings management are becoming more popular and difficult to control because of the weak regulatory environment; thus, real earnings management is more popular than accruals-based methods. Financial distress creates strong incentives for earnings manipulation, such as hiding losses to maintain investors' confidence, avoiding debt covenant violations, and meeting regulatory thresholds. Financial constraints moderate the association between financial distress risk and earnings management. The evidence might be found not only by SMEs but also by large firms constrained and manipulated more aggressively.

The objective of this study is to examine whether companies in financial distress manipulate their financial statement, and the level of earnings management depends on the severity of financial distress. The empirical results help policymakers, investors, auditors, and credit agencies assess the severity of financial distress before making financial decisions. Given these considerations, it is acknowledged that the relation between earnings management and financial distress may vary depending on the estimation model used. Therefore, the results of the present study may diverge from those of prior research. While the study refrains from assuming a specific direction of the relationship due to mixed evidence in the literature, it posits a significant association between the two constructs.

Furthermore, this article aims to explore whether the severity of financial distress influences earnings management within enterprises in order to alert the stakeholders to be careful before making economic decisions. Among financially distressed firms, some experience severe financial distress, while others face relatively milder distress. Therefore, it becomes essential to investigate how the degree or intensity of financial distress affects managerial behavior regarding earnings manipulation. Despite its importance, this area has received limited attention in existing literature. Jaggi and Lee (2002) argue that the severity of financial distress significantly influences managerial accounting decisions. The low-distressed firms have intended to engage in upward earnings management in order to obtain waivers for violating debt covenants. Whereas high-distressed firms are more likely to disclose their true financial difficulties to initiate debt renegotiation processes with lenders. In line with these findings, this study postulates that low-distressed firms are more likely to engage in income-increasing earnings management, while high-distressed firms are more conservative in their reporting behavior. Further supporting this argument, Rakshit et al. (2024) emphasized that the severity of financial distress plays a crucial role in shaping earnings management strategies. Their findings revealed that firms under lower financial distress are more inclined to adopt income-increasing accruals-based earnings management to signal financial strength and maintain investor confidence. On the other hand, highly distressed firms often opt for income-decreasing earnings management or exhibit reduced discretionary accruals, possibly to reflect transparency or prepare for restructuring negotiations. This variation in behavior underscores that earnings management is not only a function of firm-level incentives but also a reflection of an organization's broader financial health. Consequently, companies at disparate levels of financial distress engage in earnings manipulation, albeit to degrees that vary proportionally with the severity of their respective financial constraints.

This study investigates the impact of financial distress on earnings management among firms listed on Vietnam's stock exchanges to underscore the need for enhanced transparency and differentiated oversight mechanisms in Vietnam's financial reporting environment, especially for firms not immediately flagged as financially risky.

According to this rationale, the following hypotheses are proposed:

$H_1$: *There is a significant relationship between financial distress and earnings management.*

$H_2$: *Firms experiencing a lower severity of financial distress tend to engage in a higher level of earnings management.*

## 2. DATA AND METHODOLOGY

The dataset comprises information on 1,491 companies listed on three Vietnamese stock exchanges: HOSE, HNX, and UPCOM, from 2013 to 2024. The financial indicators of firms were collected from Fiingroup during 2013–2024. These data were obtained through VnStock[1], a free solution that provides comprehensive and accessible financial and stock market data, supporting essential data analysis needs and enabling users to familiarize themselves with a flexible Python-based toolkit.

Firstly, to investigate the impact of financial distress on earnings management, this relationship between the dependent variable and independent variables is represented as follows:

Model 1:

$$DAC_{1,i,t} = \beta_0 + \beta_1 Z_{i,t} + \beta_2 PROF_{i,t} + \beta_3 NPM_{i,t} + \beta_4 TANG_{i,t} + \beta_5 LTD_{i,t} + \beta_6 STD_{i,t} + \varepsilon_{i,t} \quad (1)$$

Model 2:

$$DAC_{2,i,t} = \beta_0 + \beta_1 Z_{i,t} + \beta_2 PROF_{i,t} + \beta_3 NPM_{i,t} + \beta_4 TANG_{i,t} + \beta_5 LTD_{i,t} + \beta_6 STD_{i,t} + \varepsilon_{i,t}. \quad (2)$$

Secondly, the hypothesis that firms experiencing a lower severity of financial distress tend to engage in a higher level of earnings management is formulated as:

Model 3:

$$DAC_{1,i,t} = \beta_0 + \beta_1 Z\_Dummy_{i,t} + \beta_2 PROF_{i,t} + \beta_3 NPM_{i,t} + \beta_4 TANG_{i,t} + \beta_5 LTD_{i,t} + \beta_6 STD_{i,t} + \varepsilon_{i,t}. \quad (3)$$

Model 4:

$$DAC_{2,i,t} = \beta_0 + \beta_1 Z\_Dummy_{i,t} + \beta_2 PROF_{i,t} + \beta_3 NPM_{i,t} + \beta_4 TANG_{i,t} + \beta_5 LTD_{i,t} + \beta_6 STD_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where the variables employed in this study are described as $DAC_{1,i,t}$, which denotes discretionary accruals measured by the Modified Jones model (1991), and $DAC_{2,i,t}$, indicating that the discretionary accruals are measured by the Raman and Shahrur model (2008). A dummy variable, *Z_Dummy*, was included in the analysis to examine the impact of the level of financial distress on earnings management. After data processing and the removal of irrelevant or inconsistent observations, the final dataset used in the study consists of 14,138 observations. $Z_{i,t}$ is calculated based on Altman's Z-score. *PROF* is profitability measured by ROA, computed as net income divided by total assets. *NPM* is the net profit margin computed as net income divided by net revenue. *SIZE* is the firm size measured by the natural logarithm of total assets. *TANG* is asset tangibility, measured by net fixed assets divided by total assets. *LTD* is the long-term debt ratio, measured by total long-term debt divided by total assets. *STD* is the short-term debt ratio, measured by total short-term debt divided by total assets.

*Z_Dummy* is a dummy variable for the Z-score, taking the value 1 if the Z-score is higher than the median Z-score (i.e., for low-distress firms), and 0 otherwise (i.e., for high-distress firms).

Measuring financial distress is crucial for the timely identification and prevention of corporate failures. Numerous models and indicators have been developed in the literature to evaluate the financial health of enterprises, with varying degrees of complexity and predictive accuracy. Among the most widely used tools is the Altman Z-score model, originally designed by Altman (1968) for manufacturing firms. This model considered five main financial ratios, weighted and combined into a single score to assess the likelihood of bankruptcy. The original formula is as follows:

1 https://vnstocks.com/


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$$Z = 1.2\frac{WC}{TA} + 1.4\frac{RE}{TA} + 3.3\frac{EBIT}{TA} + 0.6\frac{MVE}{BVL} + 1.0\frac{Sales}{TA}, \quad (5)$$

where *WC* is working capital, defined as the difference between current assets and current liabilities, *RE* is retained earnings, *EBIT* is earnings before interest and taxes, *MVE* is the market value of equity, *BVL* is the book value of total liabilities, and *TA* is total assets.

A Z-score lower than 1.81 means financial distress, whereas a score above 2.99 indicates financial health. For firms that fall in between, the "grey area" signals uncertainty and the need for closer monitoring. Besides the Z-score, other models such as the O-score (Ohlson, 1980), which uses logistic regression to predict bankruptcy probability, and the Springate model (Springate, 1978) are used to estimate financial distress risk. These models incorporate variables such as profitability, leverage, liquidity, and efficiency and provide useful insights into the short-term and long-term financial viability of firms.

For the methodology, this article conducted a correlation analysis of the variables used in the study using the Pearson correlation matrix. According to Gayen (1951), the Pearson correlation coefficient (r) is used to assess whether there is a strong linear relationship between two quantitative variables. The prerequisite for conducting Pearson's correlation test is that both observed variables must be statistically significant (Field, 2009). Under the assumption of a 5% significance level, if the p-value (sig.) is less than 0.05, the two variables are considered to have a statistically significant linear correlation. Conversely, if sig. > 0.05, the variables are not linearly correlated. Once a correlation is confirmed, the absolute value of the Pearson coefficient (|r|) is used to evaluate the strength of the relationship between the two variables. Specifically, Field (2009) suggested the following interpretation: if $|r| < 0.1$, the correlation is very weak; between 0.1 and 0.3 is weak; between 0.3 and 0.5 is moderate; and $|r| \geq 0.5$ indicates a strong correlation between the variables.

Subsequently, the Ordinary Least Squares (OLS) regression assumes that regression coefficients remain constant across time and entities, the Fixed Effects Model (FEM) removes time-invariant variables, and the Random Effects Model (REM) assumes no correlation between the independent variables and the error term (Gujarati & Porter, 2009). After running the OLS, FEM, and REM models, the authors applied the F-test and the Breusch-Pagan Lagrange Multiplier (LM) test to decide between OLS and FEM or REM (Gujarati & Porter, 2009; Breusch & Pagan, 1979). Then, the Hausman test was performed to determine the more appropriate model between FEM and REM (Hausman, 1978).

To assess multicollinearity, the authors used the Variance Inflation Factor (VIF). According to Gujarati and Porter (2009), multicollinearity is considered severe if the VIF value is greater than or equal to 10. Additionally, the Wooldridge test was conducted to detect autocorrelation, and the Breusch-Pagan test was used to examine heteroskedasticity in the regression models (Wooldridge, 2002; Breusch & Pagan, 1979). Lastly, the Generalized Least Squares (GLS) model is used to solve these problems of previous models.

## 3. RESULTS AND DISCUSSION

Table 1 shows the results of the mean difference test for financial indicators between firms with positive *DAC* (income-increasing earnings management) and those with negative *DAC* (income-decreasing earnings management) during the period 2013–2024. The findings reveal significant differences in financial performance between the two groups. Specifically, the mean value of *PROF* is considerably higher for firms with positive *DAC* compared to those with negative *DAC*, with the difference being statistically significant at the 1% level. This suggests that highly profitable firms are more likely to engage in income-increasing earnings management, potentially to achieve desired earnings targets or strengthen investor confidence.

Moreover, *SIZE* and *TANG* also show statistically significant differences between the two groups, with firms engaging in positive *DAC* having larger firm sizes and higher proportions of tangible assets. This implies that larger and more asset-intensive firms may have greater flexibility or stronger incentives to manage earnings upwards, possibly

**Table 1.** Mean difference test between firms with positive and negative DAC

| Variables | Positive *DAC* | | | Negative *DAC* | | | Mean Diff. (t- test) |
|---|---|---|---|---|---|---|---|
| | Mean | Std. Err. | Std. Dev. | Mean | Std. Err. | Std. Dev. | |
| PROF | 4.7440 | 0.4928 | 44.6975 | 0.5985 | 0.3016 | 24.3072 | 4.1456*** |
| NPM | 105.498 | 69.4459 | 6290.12 | –925.43 | 807.072 | 64737.1 | 1030.809 |
| SIZE | 27.1923 | 0.0186 | 1.6560 | 26.8899 | 0.0197 | 1.6107 | 0.3124*** |
| TANG | 0.2805 | 0.0028 | 0.2499 | 0.2253 | 0.0026 | 0.2080 | 0.0652*** |
| LTD | 0.4070 | 0.0094 | 0.8516 | 0.5906 | 0.0327 | 2.6410 | -0.0193*** |
| STD | 0.1129 | 0.0023 | 0.2095 | 0.1136 | 0.0031 | 0.2519 | 0.0093** |
| Obs | | 8,226 | | | 5,912 | | |

*Note:* ***, **, and * indicate statistical significance levels of 1%, 5%, and 10%, respectively.

due to better access to financial markets, higher audit quality, or reputational concerns. The *STD* variable shows a significant difference at the 5% level, indicating that firms with higher levels of short-term borrowing are more likely to manipulate earnings positively in an effort to maintain creditor confidence or meet short-term financial obligations. In contrast, *LTD* shows a slight but significantly negative difference, suggesting limited variation between the two groups. Meanwhile, *NPM* does not exhibit a significant difference in this model, indicating that earnings management behavior may not be strongly associated with margin ratios.

Table 2 illustrates the descriptive statistics of the variables utilized in this study. The mean value of $DAC_1$ and $DAC_2$ is positive, indicating that, on average, firms tend to engage in income-increasing earnings management under this model. Notably, the minimum values of DAC in both models are substantially lower than their respective maximum values, highlighting the severity of earnings management practices among some firms. Additionally, the mean Z-score is 3.2440, indicating that, on average, the sampled firms are financially distressed.

Regarding other financial indicators, firms' profitability exhibits substantial variability, with values ranging from –30.3313% to 72.9499%, accompanied by a high standard deviation of 8.2402%. This indicates a wide dispersion in profitability across the sample firms. In terms of net profit margin, the data also reveal an extremely wide range, with a minimum value of –37.3546 and a maximum of 98.2185. Such a significant spread, along with a high standard deviation of 6.0896%, suggests considerable differences in profit margins, potentially attributable to variations in operational efficiency or firm-specific financial strategies. Long-term debt exhibits moderate variation, with a mean value of 0.4301 and a standard deviation of 0.6870. The distribution ranges from 0.0006 to 36.8820, indicating that while most firms maintain relatively conservative long-term debt levels, a subset of firms carries substantial long-term liabilities. Finally, short-term debt shows a mean value of 0.1070 and a standard deviation of 0.2002. Although the minimum value is zero, possibly due to data entry or reporting inconsistencies, the maximum value of 9.8654 highlights that some firms are considerably reliant on short-term financing.

**Table 2.** Descriptive statistics

| Variable | Obs. | Mean | Std. Dev | Min | Max |
|---|---|---|---|---|---|
| $DAC_1$ | 14,138 | 0.0429 | 0.6564 | –12.6894 | 25.6352 |
| $DAC_2$ | 14,138 | 0.0414 | 0.3998 | –4.1704 | 25.2629 |
| Z | 14,138 | 3.2440 | 13.1895 | –101.3346 | 964.5032 |
| PROF | 14,138 | 4.4832 | 8.2402 | –30.3313 | 72.9499 |
| NPM | 14,138 | 6.0896 | 16.891 | –37.3546 | 98.2185 |
| SIZE | 14,138 | 27.0819 | 1.6292 | 21.4981 | 34.3635 |
| TANG | 14,138 | 0.2556 | 0.2329 | 0 | 0.9856 |
| LTD | 14,138 | 0.4301 | 0.6870 | 0.0006 | 36.8820 |
| STD | 14,138 | 0.1070 | 0.2002 | 0 | 7.8654 |


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Based on the Pearson correlation matrix, the dependent variable is weakly correlated with the independent variables, with all Pearson correlation coefficients smaller than 0.5. In addition, a test for multicollinearity between the independent variables used was conducted, the results of which are presented in Table 3. The VIF values for all variables are below the conventional threshold of 10, indicating that multicollinearity is not a concern in the model.

**Table 3.** VIF analysis results

| Variable | VIF | Tolerance |
|---|---|---|
| PROF | 1.80 | 0.5558 |
| NPM | 1.72 | 0.5810 |
| STD | 1.22 | 0.8165 |
| LTD | 1.14 | 0.8792 |
| TANG | 1.12 | 0.8944 |
| SIZE | 1.09 | 0.9200 |
| Z | 1.06 | 0.9408 |
| Mean | 1.31 | |

Table 5 exhibits the regression results of Models 1 and 2 to test hypothesis $H_1$. In both models, the coefficients for $Z$ are positive, suggesting a consistent inverse relationship between financial distress and earnings management across both earnings management measurement approaches. This finding implies that as a firm's financial health improves – reflected in higher Z-score values – the tendency to engage in earnings management increases. In contrast, firms experiencing greater financial distress, as indicated by higher Z-score values, are more likely to manipulate earnings. This result aligns with the theoretical argument that financially distressed firms may face greater incentives or pressure to manipulate financial statements to present more favorable performance to external stakeholders such as investors, creditors, or regulatory authorities. These findings are consistent with prior studies by Jaggi and Lee (2002), DeFond and Jiambalvo (1994), and Rosner (2003), who all document a positive association between financial distress and earnings manipulation. Thus, the present study reinforces the general consensus in the literature and adds further empirical support from the context of Vietnam's emerging market. Besides, the results from both the Modified Jones Model and the Raman and Shahrur Model consistently confirm this relationship, strengthening the reliability of the findings and reinforcing the broader literature that links financial vulnerability with increased managerial discretion in financial reporting.

**Table 5.** Regression analysis results of Model 1 and Model 2

| Variable | Modified Jones Model (Model 1) | | Raman and Shahrur Model (Model 2) | |
|---|---|---|---|---|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| **Dependent variable:** *DAC* | | | | |
| Z | 0.0010** | 0.0004 | 0.0007** | 0.0003 |
| PROF | 0.0171*** | 0.0012 | 0.0083*** | 0.0007 |
| NPM | –0.0013** | 0.0006 | –0.0052 | 0.0003 |
| SIZE | 0.0458*** | 0.0138 | 0.0377*** | 0.0081 |
| TANG | –0.0344 | 0.0595 | 0.0341 | 0.0351 |
| LTD | 0.0654*** | 0.0134 | 0.0195** | 0.0079 |
| STD | 0.0957* | 0.0505 | 0.0422 | 0.0298 |
| _cons | –1.2990*** | 0.3745 | –1.0388*** | 0.2211 |
| Observations | 14,138 | | 14,138 | |

*Note:* ***, **, and * indicate statistical significance levels of 1%, 5%, and 10%, respectively.

As a control variable, firms' profitability is positively related to both models. This strong positive association implies that the more profitable the

**Table 4.** Correlation coefficient matrix of variables

| Variable | $DAC_1$ | $DAC_2$ | Z | PROF | NPM | SIZE | TANG | LTD | STD |
|---|---|---|---|---|---|---|---|---|---|
| $DAC_1$ | 1.0000 | | | | | | | | |
| $DAC_2$ | 0.9944* | 1.0000 | | | | | | | |
| Z | –0.0023 | 0.0001 | 1.0000 | | | | | | |
| PROF | 0.0162* | –0.0000 | 0.0301* | 1.0000 | | | | | |
| NPM | 0.0002 | 0.0003 | –0.0064 | 0.0082 | 1.0000 | | | | |
| SIZE | –0.0004 | 0.0039 | 0.0004 | 0.0911* | 0.0008 | 1.0000 | | | |
| TANG | 0.0001 | 0.0075 | –0.0125 | –0.0012 | 0.0088 | 0.0260* | 1.0000 | | |
| LTD | –0.0180* | –0.0183* | –0.0461* | –0.3614* | 0.0017 | –0.0910* | –0.0034 | 1.0000 | |
| STD | –0.0001 | 0.0055 | –0.0153* | –0.0260* | 0.0036 | 0.1677* | 0.2646* | 0.0352* | 1.0000 |

*Note:* ***, **, and * indicate statistical significance levels of 1%, 5%, and 10%, respectively.

firms, the more earnings management practices. One possible explanation is that firms with higher profits may have stronger incentives to manage earnings upward to maintain consistent earnings growth, meet market expectations, and enhance their financial image. By doing so, these firms aim to signal financial strength, build investor confidence, and potentially attract greater market valuation. This finding is in line with the argument presented by Chen (2010), who suggest that profitable firms are more inclined to manipulate earnings to maintain or exceed target earnings thresholds, thereby reinforcing investor perception of stable performance. Such behavior may be particularly evident in capital markets where firms are under constant pressure to demonstrate continuous growth and profitability.

Firm size exhibits contrasting associations with discretionary accruals across the two earnings management models. Specifically, firm size is positively impact on $DAC_1$ and $DAC_2$. The positive relationship between firm size and $DAC_1$, $DAC_2$, based on the Modified Jones Model and the Raman and Shahrur Model, implies that larger firms may still engage in earnings management, potentially due to the greater complexity of their operations or a higher degree of flexibility in financial reporting choices. Large firms are under pressure to meet shareholder goals, and so they seek to manipulate earnings. This result suggests that the impact of firm size on earnings management highlights the sensitivity of empirical findings to the choice of estimation technique.

For long-term debt, the results are the same between the two models. *LTD* is positively associated with earnings management and is significant at the level of 1% and 5% in both models. The findings suggest that a higher proportion of long-term debt is associated with an increased propensity for earnings management among firms. For large firms with substantial debt, loan agreements often require the firm to maintain specific financial ratios. A larger firm may apply real earnings management to meet the covenants of long-term lenders, and does not want to affect the reputation of the company.

Lastly, short-term debt consistently exhibits a positive and significant association with earnings management across both models. This finding suggests that firms with a higher reliance on short-term financing are more prone to engage in earnings manipulation. One possible explanation is that firms facing short-term debt obligations may experience greater liquidity pressures and financial constraints, leading managers to manipulate reported earnings to present a healthier financial position (García-Teruel & Martínez-Solano, 2007). Moreover, the need to maintain access to credit lines, avoid covenant violations, or meet market expectations can incentivize managers to engage in earnings management as a strategic response to external financing pressures (DeFond & Jiambalvo, 1994). This result aligns with prior research that suggests short-term debt increases firms' vulnerability to refinancing risks, thereby increasing the incentive to manage earnings to appear more creditworthy (Song et al., 2013). Compared to long-term debt, short-term debt is typically subject to more frequent renewal and stricter scrutiny by lenders, which can further intensify the pressure on managers to manipulate financial statements as a signaling mechanism.

**Table 6.** Regression analysis results of Model 3 and Model 4

| Variable | Modified Jones Model (Model 3) | | Raman and Shahrur Model (Model 4) | |
|---|---|---|---|---|
| | Coef. | Std. Err. | Coef. | Std. Err. |
| **Dependent variable:** *DAC* | | | | |
| Z_Dummy | 0.0094*** | 0.0197 | 0.0292** | 0.0117 |
| PROF | 0.0173*** | 0.0012 | 0.0088*** | 0.0007 |
| NPM | –0.0013** | 0.0006 | –0.0005* | 0.0003 |
| SIZE | 0.0443*** | 0.0139 | 0.0341*** | 0.0082 |
| TANG | –0.0378 | 0.0597 | 0.0261 | 0.0352 |
| LTD | 0.0614*** | 0.0134 | 0.0151* | 0.0079 |
| STD | 0.0873* | 0.0511 | 0.2251** | 0.0302 |
| _cons | –1.2479*** | 0.3813 | –0.9204*** | 0.2251 |
| Observations | 14,138 | | 14,138 | |

*Note:* ***, **, and * indicate statistical significance levels of 1%, 5%, and 10%, respectively.

Table 6 exhibits the regression results for Models 3 and 4 to test the hypothesis $H_2$. In both models, the coefficients for *Z_Dummy* are positive, indicating a consistent inverse relation between the degree of financial distress and earnings management across both earnings management measurement approaches. This result implies that firms experiencing lower levels of financial distress are more likely to engage


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in earnings management compared to those under higher financial distress. In other words, less distressed firms tend to manipulate earnings more aggressively, while highly distressed firms are more inclined to report their true financial position. These findings are consistent with the work of Jaggi and Lee (2002), who argued that firms facing temporary or moderate financial distress might engage in income-increasing earnings management to avoid potential negative consequences such as loss of reputation, reduction in managerial bonuses, or risk of job termination. In contrast, when financial distress becomes severe, firms may choose to disclose their actual financial condition more transparently, aiming to obtain better terms during debt renegotiation or financial restructuring.

## CONCLUSIONS

This study employs the influence of financial distress on earnings management among 1,491 firms listed on Vietnam's stock exchanges between 2013 and 2024 to indicate that firms with mild distress tend to engage more in income-increasing practices, while those under severe distress show a reduced tendency to manipulate earnings. By employing two models to estimate discretionary accruals and analyzing data across multiple dimensions, the study reveals that firms facing financial difficulties are more inclined to manipulate earnings – particularly through income-increasing strategies. Furthermore, the severity of financial distress plays a crucial role: less-distressed firms demonstrate a higher propensity to manage earnings upward, likely as a means of maintaining performance signals, investor confidence, or management incentives. Conversely, highly distressed firms appear more constrained or transparent in their reporting practices. The results highlight the complex dynamics between financial state and managerial discretion in financial reporting, emphasizing the need for tailored auditing procedures, enhanced corporate governance, and regulatory reforms. By identifying behavioral patterns in earnings manipulation based on financial health, this study not only contributes to the academic discourse but also provides practical insights for policymakers, investors, auditors, and credit agencies in mitigating financial reporting risks.

## AUTHOR CONTRIBUTIONS

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Formal analysis: Thi Van Trang Do, Thang Viet Doan.
Funding acquisition: Thang Viet Doan.
Investigation: Thi Van Trang Do, Thang Viet Doan.
Methodology: Thi Van Trang Do, Thang Viet Doan.
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## REFERENCES


1. Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance, 23*(4), 589-609. https://doi.org/10.2307/2978933
2. Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica: Journal of the Econometric Society, 47*(5), 1287-1294. https://doi.org/10.2307/1911963
3. Chen, C. J., Chen, S., & Su, X. (2001). Profitability regulation, earnings management, and modified audit opinions: Evidence from China. *Auditing: A Journal of Practice & Theory, 20*(2), 9-30. https://doi.org/10.2308/aud.2001.20.2.9
4. Chen, T. (2010). Analysis on accrual-based models in detecting earnings management. *Lingnan Journal of Banking, Finance and Economics, 2*(1), 5. Retrieved from https://commons.ln.edu.hk/ljbfe/vol2/iss1/5/
5. DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics, 17*(1-2), 145-176. https://doi.org/10.1016/0165-4101(94)90008-6
6. Do, T. V. T., & Linh, D. H. (2020). The impact of earnings management on market liquidity. *Investment Management and Financial Innovations, 17*(2), 389-396. https://doi.org/10.21511/imf.17(2).2020.30
7. Doumpos, M., & Zopounidis, C. (1999). A multicriteria discrimination method for the prediction of financial distress: The case of Greece. *Multinational Finance Journal, 3*(2), 71-101. https://doi.org/10.17578/3-2-1
8. Etemadi, H., Dehkordi, H. F., & Amirkhani, K. (2013). Effect of auditor opinion on discretionary accruals behavior of distressed firms: Empirical evidences from Iran. *African Journal of Business Management*, *7*(20), 1956-1965. Retrieved from https://academicjournals.org/journal/AJBM/article-stat/1A4E75E15400
9. Field, A. P. (2009). *Discovering statistics using SPSS: (and sex and drugs and rock "n" roll)* (3rd ed.). SAGE Publications.
10. García-Teruel, P. J., & Martínez-Solano, P. (2007). Short-term debt in Spanish SMEs. *International Small Business Journal, 25*(6), 579-602. https://doi.org/10.1177/0266242607082523
11. Gayen, A. K. (1951), The Frequency Distribution of the Product-Moment Correlation Coefficient in Random Samples of Any Size Drawn from Non-Normal Universes. *Biometrika, 38*(1/2), 219. https://doi.org/10.2307/2332329
12. Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). The McGraw-Hill.
13. Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica, 46*(6), 1251-1271. https://doi.org/10.2307/1913827
14. Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons, 13*(4), 365-383. https://doi.org/10.2308/acch.1999.13.4.365
15. Jaggi, B., & Lee, P. (2002). Earnings management response to debt covenant violations and debt restructuring. *Journal of Accounting, Auditing & Finance, 17*(4), 295-324. https://doi.org/10.1177/0148558X0201700402
16. Jones, J. J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2), 193-228. https://doi.org/10.2307/2491047
17. Li, Y., Li, X., Xiang, E., & Djajadikerta, H. G. (2020). Financial distress, internal control, and earnings management: Evidence from China. *Journal of Contemporary Accounting & Economics, 16*(3), 100210. https://doi.org/10.1016/j.jcae.2020.100210
18. Ohlson, J. A. (1980). Financial ratios and the probabilistic prediction of bankruptcy. *Journal of Accounting Research, 18*(1), 109-131. https://doi.org/10.2307/2490395
19. Rakshit, D., Chatterjee, C., & Paul, A. (2024). Financial distress, the severity of financial distress and direction of earnings management: evidences from Indian economy. *FIIB Business Review, 13*(2), 192-207. https://doi.org/10.1177/23197145211039351
20. Raman, K., & Shahrur, H. (2008). Relationship-specific investments and earnings management: Evidence on corporate suppliers and customers. *The Accounting Review, 83*(4), 1041-1081. https://doi.org/10.2308/accr.2008.83.4.1041
21. Ranjbar, S., & Amanollahi, G. F. (2018). The effect of financial distress on earnings management and unpredicted net earnings in companies listed on Tehran Stock Exchange. *Management Science Letters, 8*(9), 933-938. https://doi.org/10.5267/j.msl.2018.6.015
22. Rosner, R. L. (2003). Earnings manipulation in failing firms. *Contemporary Accounting Research, 20*(2), 361-408. https://doi.org/10.1506/8EVN-9KRB-3AE4-EE81
23. Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics, 42*(3), 335-370. https://doi.org/10.1016/j.jacceco.2006.01.002
24. Selahudin, N. F., Zakaria, N. B., & Sanusi, Z. M. (2014). Remodelling the earnings management with the appearance of leverage, financial distress and free cash flow: Malaysia and Thailand evidences. *Journal of Applied Sciences, 14*(21), 2644-2661. https://doi.org/10.3923/jas.2014.2644.2661
25. Song, D. B., Lee, H. Y., & Cho, E. J. (2013). The association between earnings management and asset misappropriation. *Managerial Auditing Journal, 28*(6), 542-567. https://doi.org/10.1108/02686901311329919
26. Springate, G. L. (1978). *Predicting the possibility of failure in a Canadian firm: A discriminant analysis* (Doctoral Thesis). Simon Fraser University.
27. Sweeney, A. P. (1994). Debt-covenant violations and managers' accounting responses. *Journal of Accounting and Economics, 17*(3), 281-308. https://doi.org/10.1016/0165-4101(94)90030-2
28. Wooldridge, J. (2002). *Introductory Econometrics: A Modern Approach* (2nd ed.). South-Western College.




http://dx.doi.org/10.21511/imfi.23(2).2026.34