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Article

Board Characteristics and Earnings Management: Evidence from the Vietnamese Market

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Abstract: This study empirically analyzes the relationship between Vietnamese firms' earnings management, board characteristics, and ownership structures. I use board size and the proportion of outside directors to reflect board characteristics, and the ownership percentages of the board of directors, outside directors, and the chief executive officer (CEO) to reflect the ownership structures. I use discretionary accruals, measured by the modified Jones model, to proxy for earnings management. From analyzing firms listed on the Ho Chi Minh and Hanoi Stock Exchanges from 2012 to 2017, I find that board size and the ownership percentages of outside directors and CEOs are negatively related to earnings management, whereas the board of directors' ownership percentage is positively related. The proportion of outside directors is not significantly associated with earnings management. This study provides policy insights for improving Vietnamese firms' financial transparency. Specifically, corporate laws regulating board composition should be enacted to ensure that all firms meet a minimum number of board members. Moreover, a policy mandating boards to include independent outside directors is necessary, as establishing an independent outside director system within Vietnam's corporate law can strengthen the sustainability of the board of directors.



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Keywords: earnings management; Vietnam; sustainable board characteristics; ownership structure; discretionary accruals

1. Introduction

Earnings reflect a company's financial performance and growth prospects, motivating firms' business associates to assess current productivity to improve managerial activities. Thus, firms must disclose transparent financial statements so that shareholders and stakeholders can monitor firms' profits to make investment decisions.

In business, the separation of ownership and management prevails. Shareholders require a professional manager to act as an agent to maximize profits. This separation can create information asymmetry between shareholders and managers, allowing managers to pursue private interests even when tasked with operating a firm to maximize shareholders' interests. Thus, the agent does not always act in the best interests of shareholders in a principal–agent relationship (Jensen and Meckling 1976).

Earnings management is a managerial behavior that deviates from maximizing shareholders' profits, as instead of transparently disclosing a firm's true earnings, managers use accounting techniques to manipulate profits. (Healy and Wahlen 1999) report that managers engage in earnings management by changing financial statements to mislead stakeholders regarding firm performance. (Schipper 1989) defines earnings management as a manager intervening in the external financial reporting process for personal gain.

Forms of accounting manipulation, such as earnings management are generally identified as problems when well-known firms' accounting scandals are made public. The most notable scandals are those of Enron and WorldCom, when insiders or internal audit units uncovered accounting fraud, causing both firms to go bankrupt. In South Korea, the Daewoo Group also experienced an accounting scandal during the currency crisis of 1997.

These instances of accounting fraud have undermined investor confidence in firms. Accordingly, many countries have worked to establish efficient corporate governance structures to ensure firm transparency and address accounting fraud.

This study analyzes the effects of the characteristics of firms' boards of directors and their ownership structures on earnings management by examining firms listed on the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). I explore ways to control managers' earnings management and increase the financial transparency of Vietnamese firms by demonstrating the effects of board size, the proportion of outside directors, and the ownership percentages of the board of directors, outside directors, and chief executive officers (CEOs) on earnings management.

The remainder of this paper is organized as follows. Section 2 provides a background on Vietnamese firms. Specifically, I explain their corporate governance and ownership structures. In Section 3, I develop hypotheses based on previous research on earnings management, corporate governance structures, and ownership structures. Section 4 defines the variables and presents research models to test the hypotheses. In Section 5, I test the hypotheses using descriptive statistics, correlation, and multivariate regression analyses. I draw conclusions from the main findings of the empirical tests in Section 6.

2. Background on Vietnamese Firms

2.1. Corporate Governance

Corporate governance refers to the structure for overseeing and controlling a firm's operations. The Vietnamese government enacted the Enterprises Law in 2005, which forms the basis for corporate governance. This law stipulates the rights and obligations of a firm's stockholders, managers, and audit committee, specifying that managers must fulfill their duty of maximizing the interests of firms and shareholders. Under the Enterprises Law 2005, firms can make decisions on internal corporate governance issues.

Subsequently, Code 2007 was issued in 2007 to supplement Enterprises Law 2005. This law supports the development of the Vietnamese stock market and creates a transparent economy. Code 2007 requires respect for the rights of shareholders and stakeholders and provides principles for transparent disclosures of corporate activities.

Under Vietnamese corporate law, the board of directors is a body that oversees business execution and decision making. A board of directors should consist of no less than 3 but no more than 11 directors. However, Vietnamese corporate law provides no specifications for outside directors. In comparison, Korea first introduced an outside director system in its commercial law in 1998. In Korea, outside directors refer to those not engaged in a firm's ordinary business affairs (Article 382, p. 3), and at least a quarter of a listed firm's board members should be outside directors. The boards of listed firms with total assets of at least KRW 2 trillion must have the majority of their board comprised of outside directors (at minimum three outside directors).

2.2. Ownership Structure

Since 1986, Vietnam has been equitizing its state-owned firms to attract investment by converting state-owned firms into joint-stock firms by selling shares to the private sector. The government uses the term "equitization" rather than "privatization," as even after a state-owned firm is converted into a joint-stock firm, its state ownership may still exceed 50% in some cases. This transition into joint-stock firms diversifies ownership so that firms can become competitive and more efficient.

Foreign investors have also entered Vietnam, as ownership diversity has increased through the equitization of state-owned firms. The Vietnamese government laid a legislative foundation for economic opening with the Foreign Investment Act in 1987. Subsequently, Vietnam gained recognition as a stable trading partner when it joined the World Trade Organization in 2007.

The ownership structures of Vietnamese firms are changing from solely state-owned to more diversified ownership structures, such as multinational firms with only foreign

investment, joint ventures, and private firms. The Vietnamese stock market has few institutional investors, and individual investors make most investments.

3. Related Literature and Hypotheses

3.1. Earnings Management

The separation of ownership and management indicates that shareholders own a firm, and managers act as agents to operate the firm for the shareholders' benefit. However, information asymmetry can arise between shareholders and agents. (Collier and Esteban 1999) argue that this asymmetry enables the agent to engage in evasion, betrayal, and other selfish behaviors. Thus, agents do not always act in the shareholders' best interests in the relationship between shareholders and agents (Scott 2009).

Earnings management is a managerial behavior that fails to prioritize maximizing shareholders' profits. Rather than disclosing a firm's legitimate earnings, managers manipulate profits. (Healy and Wahlen 1999) report that earnings management deceives stakeholders regarding firm performance by manipulating the firm's financial statements. Schipper (1989) defines earnings management as a manager's manipulation of the external financial reporting process, motivated by personal benefit. (Scott 2009) describes earnings management as an accounting manager affecting profits to meet specific earnings targets.

The factors that enable earnings management rest in a firm's accounting method. In accordance with generally accepted accounting principles (GAAP), firms implement accrual accounting. Under this method, revenue is recognized when earned, and expenses are recognized when incurred, as opposed to recognizing revenue and expenses when cash is received or paid out. Accrual accounting offers managers considerable discretion in determining a firm's reported earnings over a given period (Xie et al. 2003), and managers can use this to adjust profits.

Several hypotheses have been proposed to explain the occurrence of earnings management. The first is the income smoothing hypothesis. (Moses 1987) defines earnings smoothing behavior as an effort to reduce fluctuations in reported earnings. Accounting changes are used to level volatility in net income between accounting periods, helping firms' earnings to appear stable. (Gordon 1964) reports that managers deliberately use accounting techniques to stabilize the growth rate of profits.

(Watts and Zimmerman 1986) introduce the debt covenant hypothesis, which states that managers choose accounting methods that increase profits when a firm's accounting figures are likely to violate a debt covenant. The higher a firm's debt-to-equity ratio, the more likely that its managers will choose an accounting procedure that shifts reported profits from future periods to the present.

The managerial compensation hypothesis also explains earnings management. (Healy 1985) argues that managers with earnings-based bonus schemes manipulate earnings by choosing accounting techniques that maximize their compensation. (Watts and Zimmerman 1986) state that managers with compensation plans are more likely to select accounting procedures that transfer future reported earnings to the present.

Another hypothesis for the use of earnings management is the political cost hypothesis. (Cahan 1992) shows that managers adjust discretionary accruals in response to changes in potential political costs.

Finally, the size hypothesis suggests that the larger a firm is, the more political attention and influence it receives. Thus, (Watts and Zimmerman 1986) argue that managers of large firms are incentivized to use accounting procedures that reduce reported earnings to avoid high political costs. This argument also supports the political cost hypothesis.

3.2. Earnings Management and Board Characteristics

Firms have corporate governance mechanisms to mitigate agency problems between owners and managers. Among these corporate governance structures, the board of directors plays an important role in internal control. The board manages and controls executive

decisions and financial reporting processes (Fama and Jensen 1983; Jensen 2002) and the directors pay agency costs to monitor managers' behavior (Collier and Esteban 1999).

(Jensen and Meckling 1976) demonstrate that shareholders provide appropriate incentives to managers and pay monitoring costs to limit managers' abnormal activities in the shareholder–agent relationship.

Several studies report that a small board of directors is more efficient, as too many board members make it hard for all members to express their thoughts and opinions (Lipton and Lorsch 1992). Thus, decision-making is inefficient in large boards due to the difficulty of coordinating different views. In this context, previous findings show that firms with small boards are associated with better firm performance (Eisenberg et al. 1998; Yermack 1996). (Yermack 1996) demonstrates that firms with small boards of directors exhibit more favorable financial ratios. Specifically, the financial ratios related to profitability and operational efficiency decrease as the size of the board of directors increases. (Beasley 1996) reports that the likelihood of fraudulent financial reporting decreases as board size decreases. (Jensen 1993) demonstrates that firms with small boards can effectively control the CEO. Based on these findings, I expect a smaller board of directors to better monitor a firm's managers and limit earnings management. Thus, I establish Hypothesis 1 as follows.

Hypothesis 1 (H1). *Board size is positively (+) related to earnings management.*

Each firm's board of directors has varying proportions of inside and outside directors. As part of the corporate governance structure, the board of directors must monitor and supervise managers to prevent opportunistic behavior. (Jensen 1993) argues that the CEO should be the only inside director on a board to mitigate CEO hostility and the possibility of retaliation, which will encourage the board to critically monitor and evaluate the CEO. (Dechow et al. 1996) examine firms subject to accounting enforcement by the US Securities and Exchange Commission for exaggerating profits in violation of GAAP. According to their findings, managers (i.e., insiders) are more likely to control the board of directors when firms adjust earnings. They find that a lack of supervision due to weak corporate governance is an important catalyst for earnings management. (Pope et al. 1998) and (Peasnell et al. 2005) investigate the relationship between board composition and earnings management in British firms and find evidence that earnings management is negatively related to the proportion of outside directors. This result suggests that outside directors' monitoring ability contributes to the integrity and reliability of financial statements. Furthermore, (Klein 2002)'s empirical analysis of a sample of US-listed firms finds a significant negative relationship between the number of abnormal accruals and the ratio of outside directors. (Beasley 1996) compares firms that do not manipulate financial statements with those that commit accounting fraud. The results show that the likelihood of financial statement fraud is lower for firms with a higher ratio of outside directors. Thus, I set forth Hypothesis 2 as follows.

Hypothesis 2 (H2). *The ratio of outside directors has a negative (–) relationship with earnings management.*

3.3. Earnings Management and Ownership Structures

Ownership structures are essential to corporate governance. If an investor gains an edge in a firm's ownership structure through a high equity stake, that investor can more easily monitor the firm's managers as a controlling shareholder. It is well established that controlling shareholders are more likely to question and challenge a manager's proposals. (Jensen 1993) argues that problems arise if board members do not own a significant portion of a firm's equity. Directors with substantial shareholdings encourage board decisions in favor of improving long-term firm performance and respond to managers' tendency to prioritize short-term performance in the stock market (Patton and Baker 1987). Thus, firms should encourage their boards of directors to own a significant proportion of firm

equity. The greater the board's stake in a firm, the more efficiently the board can monitor and control the firm's managers and, thus, mitigate earnings management. Therefore, I construct Hypothesis 3 as follows.

Hypothesis 3 (H3). *A board's equity ownership is negatively (–) related to earnings management.*

(Patton and Baker 1987) argue that encouraging outside directors to hold high stakes in a firm provides a strong incentive for monitoring managers. (Beasley 1996) shows that financial statement fraud decreases as outside directors' equity ownership increases. This result is consistent with the view that increasing outside directors' ownership encourages the monitoring of managers to prevent financial statement fraud. Many previous studies report that outside directors reflect a board's independence. If greater ownership makes it easier for an investor to monitor managers, then outside directors' increased equity ownership should be associated with the effective monitoring and control of managers' earnings manipulation. Thus, I set Hypothesis 4 as follows.

Hypothesis 4 (H4). *Outside directors' equity ownership has a negative (–) effect on earnings management.*

Previous studies show that the relationship between a CEO's ownership percentage and earnings management is consistent with the interest convergence hypothesis. (Jensen and Meckling 1976) argue that an increase in managerial ownership decreases agency costs by better aligning the interests of shareholders and managers. (Warfield et al. 1995) investigate the effect of managerial ownership on the magnitude of discretionary accounting accrual adjustments and the informativeness of earnings. The findings that managerial ownership is positively related to the informativeness of earnings and negatively associated with the magnitude of discretionary accounting accrual adjustments support the interest convergence hypothesis. (Alves 2012) explores the relationship between ownership structures and earnings management among Portuguese firms and finds that managerial ownership and discretionary accruals are negatively related. These findings show that managerial ownership improves annual profit quality by reducing earnings management. Putting forth Hypothesis 5, I examine the notion that managerial ownership negatively correlates with earnings management.

Hypothesis 5 (H5). *The CEO's ownership percentage has a negative (–) effect on earnings management.*

4. Sample and Methodology

4.1. Sample Description

I analyze 480 firms listed on the Vietnamese stock markets, the HOSE and HNX, from 2012 to 2017. The criteria for inclusion in the sample are as follows.

1. Firms listed continuously for six years.
2. Non-financial firms.
3. Firms for which financial data are available.

The sample includes continuously listed firms from 2012 to 2017 and excludes financial firms, as they are regulated differently than non-financial firms, owing to characteristic differences. I also exclude firms for which data are not available. The final sample includes the 480 firms that meet these criteria.

4.2. Variable Construction

4.2.1. Dependent Variables

This study uses discretionary accruals (DA) as the dependent variable, serving as a proxy for corporate earnings management. Previous studies develop various models to estimate discretionary accruals.

(Healy 1985)'s model uses the average total accruals as discretionary accruals. (DeAngeles 1986)'s model uses accruals from the previous year, and (Jones 1991)'s model uses changes in sales and tangible assets. (Dechow and Sloan 1991)'s model uses the median accruals of firms within the same industry. The modified Jones model incorporates changes in credit sales into the original Jones model. Additionally, (Kothari et al. 2005) develop a performance-adjusted Jones model, which adds performance variables to the modified Jones model. (Dechow et al. 1995) compare several models for estimating accruals and note that all can be used effectively to verify corporate earnings management. They also find that the modified Jones model has strong verification power. Thus, this study uses the modified Jones model to calculate discretionary accruals by comparing actual and normal accruals.

Specifically, the model estimates total and non-discretionary accruals and defines the difference between them as discretionary accruals. The regression model is as follows.¹

$$\begin{aligned}\frac{TA_t}{A_{t-1}} &= \beta_0 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta AR_t}{A_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{A_{t-1}} \right) + \epsilon_t \\ \frac{NDA_t}{A_{t-1}} &= \beta_0 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{\Delta Sales_t - \Delta AR_t}{A_{t-1}} \right) + \beta_2 \left(\frac{PPE_t}{A_{t-1}} \right) \\ DA_t &= TA_t - NDA_t\end{aligned}$$

As the equation shows, discretionary accruals are the residual of the regression equation used to obtain total accruals. Thus, discretionary accruals can be either positive (+) or negative (−). If discretionary accruals are positive (negative), I can conclude that the manager increased (decreased) profits.

I use discretionary accruals (*DA*) as a dependent variable to examine the direction and magnitude of earnings management. I also use the absolute value (*AB_DA*) of discretionary accruals to determine the extent of earnings management.

4.2.2. Independent Variables

I include several independent variables in the analyses to identify the effects of Vietnamese firms' board characteristics and ownership structures on earnings management. The variables related to board characteristics are board size (*BOD*) and the proportion of outside directors (*BOD_out*). The variables related to a firm's ownership structure are board of directors' ownership (*BOWN*), ownership by outside directors (*BOWN_out*), and ownership by the CEO (*COWN*).

Board Size (BOD)

The board of directors is responsible for monitoring and supervising managers. If a board has too many members, coordinating everyone's thoughts and opinions becomes difficult, affecting decision making. When boards are operated inefficiently, their ability to control earnings management, an opportunistic behavior of managers, is more likely to be undermined. I measure board size as the number of members on a firm's board of directors.

Proportion of Outside Directors (BOD_Out)

External to a firm, outside directors can monitor and criticize managers more transparently and objectively. A high proportion of outside directors on a firm's board may mitigate earnings management. I measure the proportion of outside directors as the ratio of the number of outside directors to the total number of directors.

Board of Directors' Ownership (BOWN)

An investor with a high stake in a firm can more easily monitor managers as a controlling shareholder. Thus, if the board of directors has a larger ownership share, the board can monitor and control the firm's managers more effectively. I measure the board of

directors' equity ownership as the ratio of shares held by the board of directors to the total number of issued shares.

Outside Directors' Ownership (BOWN_Out)

Previous studies report that outside directors reflect a board's independence. An increase in outside directors' ownership can enhance the monitoring of managers to prevent fraudulent financial statements. I measure outside directors' ownership as the ratio of the shares held by outside directors to the total number of issued shares.

CEO's Ownership (COWN)

Previous studies support the interest convergence hypothesis, which states that an increase in the CEO's ownership better aligns CEO and shareholder interests. Higher equity ownership by the CEO reduces the motivation to perform opportunistic earnings management. I measure the CEO's ownership as the ratio of the shares held by the CEO to the total number of issued shares.

4.2.3. Control Variables

In addition to the board characteristics and ownership structure variables, I control for other variables that may affect earnings management. Specifically, I include ownership by large shareholders (*Large*), foreign ownership (*Foreign*), firm size (*SIZE*), leverage ratio (*LEV*), return on total assets (*ROA*), operating cash flow ratio (*COA*), and auditing firm quality (*Big4*) as control variables.

Ownership by Large Shareholders (*Large*)

Large shareholders improve performance by monitoring managers' activities and influencing corporate decision making. They help resolve information problems in capital markets by leaving a lasting impact on corporate governance and performance (Zeckhauser and Pound 1990). (Roodposhti and Chashmi 2011) report that firms with high ownership concentration engage in less earnings management. (Alves 2012) finds that large shareholders' equity ownership improves the quality of annual earnings by reducing earnings management. (Dechow et al. 1996) demonstrate that large shareholders enhance the reliability of a firm's financial statements by closely monitoring earnings management. Thus, I include ownership by large shareholders as a control variable, as it may negatively affect earnings management. I define a large shareholder as a shareholder who owns 5% or more of a firm's issued shares. Ownership by large shareholders is measured by the ratio of the shares held by large shareholders to the total number of issued shares.

Foreign Ownership (*Foreign*)

Foreign investors can serve as watchdogs for the firms they invest in, as they can provide effective monitoring of managers' opportunistic behavior. Cheon (2003) analyzes stocks listed on the Korean stock exchange, showing that an increase in a firm's foreign ownership decreases the volatility of its earnings and reduces the likelihood of converting accounting profits into cash increases. (Cheon 2003) also notes that foreign investors induce qualitative improvements in accounting profits. In a study of the Japanese market, (Chung et al. 2004) show that foreign ownership effectively monitors discretionary accruals, suppressing managerial opportunism. (Ahn and Jacobs 2005) confirm that discretionary accruals are low in firms with substantial foreign ownership. Thus, I control for foreign ownership, as it can reduce earnings management. Foreign ownership is measured by the ratio of the shares held by foreign investors to the total number of issued shares.

Firm Size (*SIZE*)

The larger a firm is, the more attention it receives from investors and governments, and the greater the probability of becoming a political target. (Watts and Zimmerman 1986) develop the size hypothesis, which states that managers are likelier to choose a conservative

accounting method that reduces accounting profits. (Roodposhti and Chashmi 2011) find a positive relationship between firm size and earnings management. Following previous studies that support the size hypothesis, I include firm size as a control variable because it can positively affect earnings management. Firm size is calculated using the natural logarithm of a firm's total assets.

Leverage Ratio (LEV)

(Watts and Zimmerman 1986) support the debt covenant hypothesis, which states that managers of firms with high leverage ratios choose accounting techniques that increase current earnings to avoid violating debt contracts. (DeFond and Jambalvo 1994) find that firms that violate debt covenants increase their accruals in the year prior to the violation. Previous studies find that the leverage ratio and earnings management are positively related (Lobo and Zhou 2006). I control for the leverage ratio, assuming it is positively associated with earnings management. The leverage ratio measures a firm's total liabilities to its total assets.

Return on Total Assets (ROA)

(Dechow et al. 1995) suggest that models measuring discretionary accruals should be used with caution, especially for firms with extreme financial performance. They emphasize the importance of controlling for financial performance, which correlates with earnings management. I include extreme performance as a control variable because it can affect measures of earnings management. The return on total assets is measured by the ratio of a firm's net income to its total assets.

Operating Cash Flow Ratio (COA)

(Alves 2012) finds that earnings management is reduced when operating cash flows are high. Additionally, (Lobo and Zhou 2006) show that firms with high operating cash flows have lower discretionary accruals. I control for operating cash flows under the assumption that they negatively affect earnings management. The operating cash flow ratio is calculated using the ratio of operating cash flows to the firm's total assets.

Auditing Firm (Big4)

Auditing firms monitor and supervise managers' opportunistic behavior. (DeAngelo 1981) finds an association between auditor size and audit quality, noting that low audit quality causes managers to engage in opportunistic behavior. (Becker et al. 1998) investigate the relationship between audit quality and earnings management. Their findings show that high-quality auditing firms are more likely to detect managers' questionable accounting practices and better validate their audit reports. (Becker et al. 1998) also verify that firms working with low-quality auditors engage in more earnings management. Thus, I consider whether a Big Four auditing firm audits a firm. I set the variable *Big4* equal to one if a firm is audited by a Big Four firm and zero otherwise.

4.3. Empirical Model

I estimate the following panel regression model² to test Hypotheses 1 through 5:

$$DA_{t,i} = \beta_0 + \beta_1 BOD_{t,i} + \beta_2 BOD_out_{t,i} + \beta_3 BOWN_{t,i} + \beta_4 BOWN_out_{t,i} + \beta_5 COWN_{t,i} + \beta_6 Large_{t,i} + \beta_7 Foreign_{t,i} + \beta_8 SIZE_{t,i} + \beta_9 LEV_{t,i} + \beta_{10} ROA_{t,i} + \beta_{11} COA_{t,i} + \beta_{12} Big4_{t,i} + \epsilon_t$$

5. Empirical Results

5.1. Summary Statistics

I analyze firms listed on the HOSE and HNX from 2012 to 2017 that meet the three criteria listed above. Table 1 reports the descriptive statistics for the 2880 observations in the panel of 480 firms. The average absolute value of discretionary accruals is 0.0922, with a minimum of 0 and a maximum of 1.0254. Although some firms do not commit earnings

management, the degree of earnings management fluctuates sufficiently among the firms that do manipulate accruals. I confirm that managers in a variety of Vietnamese firms carry out opportunistic earnings management. The average number of board members across all firms is 5.4946. The minimum number of directors is 3, and the maximum number of directors is 11. The summary statistics for *BOD_out* show that outside directors account for an average of 64.10% of the directors on boards. The minimum value of *BOD_out* is zero, meaning that some boards of directors consist only of inside directors. The maximum value of one confirms that other boards of directors are composed entirely of outside directors. The average values of *BOWN*, *BOWN_out*, and *COWN* are 10.70%, 5.62%, and 3.85%, respectively. These results can be interpreted to mean that some Vietnamese firms' directors or CEOs have no shareholdings.

Table 1. Summary statistics.

Variable	Mean	SD	Min	P25	Median	P75	Max
<i>DA</i>	−0.0000	0.1387	−0.5916	−0.0640	−0.0074	0.0558	1.0254
<i>AB_DA</i>	0.0922	0.1036	0.0000	0.0277	0.0604	0.1185	1.0254
<i>BOD</i>	5.4946	1.1255	3.0000	5.0000	5.0000	6.0000	11.0000
<i>BOD_out</i>	0.6410	0.1770	0.0000	0.5714	0.6000	0.8000	1.0000
<i>BOWN</i>	0.1070	0.1431	0.0000	0.0067	0.0452	0.1589	0.9352
<i>BOWN_out</i>	0.0562	0.0962	0.0000	0.0010	0.0127	0.0696	0.8368
<i>COWN</i>	0.0385	0.0808	0.0000	0.0004	0.0052	0.0369	0.6474
<i>Large</i>	0.4941	0.2155	0.0000	0.3555	0.5148	0.6423	0.9925
<i>Foreign</i>	0.1063	0.1374	0.0000	0.0074	0.0463	0.1537	0.8650
<i>SIZE</i>	27.0979	1.5151	23.3304	26.0851	27.0336	28.0982	32.9960
<i>LEV</i>	0.5047	0.2200	0.0020	0.3324	0.5300	0.6798	0.9706
<i>ROA</i>	0.0539	0.0841	−1.5874	0.0132	0.0424	0.0868	0.7837
<i>COA</i>	0.0587	0.1292	−0.4812	−0.0130	0.0512	0.1284	1.3970
<i>Big4</i>	0.2462	0.4309	0.0000	0.0000	0.0000	0.0000	1.0000

5.2. Correlation Analysis

Table 2 shows the correlations between pairs of the dependent, independent, and control variables. The upper triangle shows the Pearson correlation coefficients, and the lower triangle shows the Spearman correlation coefficients. The symbols *, **, and *** indicate significance at the 1%, 5%, and 10% levels, respectively.

AB_DA represents the magnitude of earnings management. First, I find that *AB_DA* and *BOD* are significantly negatively related based on both the Pearson and Spearman correlations. I see no significant relationship between *AB_DA* and *BOD_out*. Finally, *AB_DA* is significantly positively correlated with *BOWN*, *BOWN_out*, and *COWN* in the Spearman correlation analysis.

5.3. Multivariate Regression Analyses

The correlation analysis confirms that *BOD*, *BOWN*, *BOWN_out*, and *COWN* are significantly correlated with *AB_DA*, whereas *BOD_out* is not.

This result does not strongly support Hypothesis 2. Thus, I attempt to determine the reasoning for this result by conducting additional regression analyses.

Specifically, I estimate the Fama–Macbeth regression to investigate the effects of board characteristics and ownership structures on earnings management.

Table 3 presents the regression analyses of the Fama–Macbeth regression coefficients using the absolute value of discretionary accruals as the dependent variable.

Table 2. The Pearson and Spearman correlation coefficients.

Variable	DA	AB_DA	BOD	BOD_out	BOWN	BOWN_out	COWN	Large	Foreign	SIZE	LEV	ROA	COA	Big4
DA		0.2243 ***	0.0213	−0.0048	0.0218	−0.0037	0.0382 *	−0.0546***	0.0338 *	0.0407 **	−0.0116	0.2019 ***	−0.7670***	−0.0359 *
AB_DA	−0.0424 **		−0.0730***	0.0042	0.0299	0.0230	0.0093	−0.0953***	−0.0756***	−0.0806***	0.0521 **	−0.0827***	−0.0899***	−0.0876***
BOD	0.0312	−0.0605***		0.0560 ***	0.0946 ***	0.0960 ***	0.0068	−0.0453 **	0.3087 ***	0.3127 ***	−0.0245	0.0550 ***	0.0370 **	0.1651 ***
BOD_out	−0.0017	−0.0009	0.0585 ***		−0.1537***	0.1091 ***	−0.2363***	0.1198 ***	0.0553 ***	0.0134	−0.1705***	0.0550 ***	0.0304	0.1155 ***
BOWN	0.0554 ***	0.0505 **	0.0957 ***	−0.1718***		0.7381 ***	0.6989 ***	−0.0706***	−0.0313 *	−0.0103	0.0893 ***	−0.0630***	−0.0840***	−0.1080***
BOWN_out	0.0497 **	0.0390 *	0.0853 ***	0.0882 ***	0.7831 ***		0.0918 ***	−0.0566***	−0.0164	−0.0003	0.0634 ***	−0.0510***	−0.0476 **	−0.0642***
COWN	0.0587 ***	0.0367 *	0.0411 **	−0.2827***	0.6785 ***	0.2978 ***		−0.0265	−0.0318 *	0.0039	0.0545 ***	−0.0527***	−0.0821***	−0.0755***
Large	−0.0341 *	−0.0576 ***	−0.0450 **	0.1354 ***	−0.2823***	−0.2311***	−0.2922***		0.0312 *	0.0689 ***	0.0233	0.1043 ***	0.1010 ***	0.1446 ***
Foreign	0.0555 ***	−0.0468 **	0.2118 ***	0.0441 **	−0.0884***	−0.0883***	−0.0798***	0.0040		0.2804 ***	−0.2524***	0.1866 ***	0.0739 ***	0.3291 ***
SIZE	0.0468 **	−0.0898***	0.2587 ***	0.0146	−0.1362***	−0.1583***	−0.1248***	0.0813 ***	0.2811 ***		0.3482 ***	−0.0350 *	−0.0590***	0.4834 ***
LEV	−0.0072	0.0583 ***	−0.0320 *	−0.1515***	0.0680 ***	0.0473 **	0.0434 **	0.0052	−0.2563***	0.3545 ***		−0.3574***	−0.2116***	0.0301
ROA	0.1220 ***	−0.0162	0.0586 ***	0.0726 ***	−0.0954***	−0.0720***	−0.0137	0.1214 ***	0.3221 ***	−0.1084***	−0.4733***		0.3011 ***	0.0026
COA	−0.7627***	−0.0003	0.0453 **	0.0396 **	−0.1250***	−0.0989***	−0.0744***	0.1181 ***	0.1133 ***	−0.0716***	−0.2554***	0.4104 ***		0.0162
Big4	−0.0288	−0.0832***	0.1463 ***	0.1164 ***	−0.1715***	−0.1402***	−0.1784***	0.1419 ***	0.2850 ***	0.4681 ***	0.0224	0.0327 *	0.0350 *	

The upper triangle shows the Pearson correlation coefficients, and the lower triangle shows the Spearman correlation coefficients. *, **, and *** indicate significance at the 1%, 5%, and 10% levels, respectively.

Table 3. Board characteristics and earnings management.

Fama–Macbeth Regressions				
<i>AB_DA</i>				
Variable	Model 1		Model 2	
Intercept	0.1203 (19.00)	***	0.2324 (10.19)	***
<i>BOD</i>	−0.0075 (−5.22)	***	−0.0041 (−2.87)	**
<i>BOD_out</i>	0.0161 (1.53)		0.0329 (4.19)	**
<i>BOWN</i>	0.1553 (5.04)	***	0.1433 (5.63)	***
<i>BOWN_out</i>	−0.1273 (−4.23)	**	−0.1432 (−6.09)	***
<i>COWN</i>	−0.1644 (−3.76)	**	−0.1546 (−4.13)	**
<i>Large</i>			−0.0348 (−2.59)	*
<i>Foreign</i>			−0.0030 (−0.20)	
<i>SIZE</i>			−0.0047 (−3.88)	**
<i>LEV</i>			0.0266 (3.13)	**
<i>ROA</i>			−0.0548 (−1.38)	
<i>COA</i>			−0.0420 (−0.74)	
<i>Big4</i>			−0.0083 (−3.17)	**
Adj. R ²	0.0137		0.0528	

Numbers in parentheses are the t-statistics for the corresponding regression coefficients, and *, **, and *** indicate significance at the 1%, 5%, and 10% levels, respectively.

BOD, a characteristic of the board of directors, is significantly negatively associated with *AB_DA*. This result implies that greater board size is associated with less earnings management. Hypothesis 1 states that board size should have a positive (+) effect on earnings management. Therefore, I reject Hypothesis 1 because the analysis results contradict the hypothesis.

BOD_out is significantly positively related to *AB_DA* in model 2. This finding shows that firms with more outside directors are more likely to manipulate earnings. Thus, I also reject Hypothesis 2.

BOWN, which reflects a firm's ownership structure, has a significant positive relationship with *AB_DA*, indicating that earnings management increases as the board of directors holds more firm shares. Thus, I reject Hypothesis 3.

BOWN_out significantly negatively affects *AB_DA*. I can observe that firms with greater outside director ownership are less likely to manage earnings. These results support Hypothesis 4.

Finally, *COWN* is significantly negatively correlated with *AB_DA*. Thus, the magnitude of earnings management decreases as CEO shareholdings increase. This finding supports Hypothesis 5.

Model 2 shows the relationships between the control variables and the dependent variable.

LEV is significantly positively associated with *AB_DA*. This finding implies that firms with greater leverage ratios have greater earnings management.

Big4, the variable indicating whether the auditing firm is one of the Big Four firms, is significantly negatively correlated with *AB_DA*. This finding means that the magnitude of earnings management decreases when corporate audits are strengthened.

Large, *SIZE*, *ROA*, and *COA* are all significantly negatively associated with *AB_DA*. These results indicate that larger firms with more concentrated corporate ownership structures are less likely to manage earnings. They also suggest that more profitable firms with higher cash inflows engage in less earnings management.

Table 4 presents the Fama–Macbeth regression coefficients of the key independent and control variables when the dependent variable is *DA*. For the analysis in Table 4, I divide the data into subsamples based on whether discretionary accruals are negative (−) or positive (+). If discretionary accruals are negative, I can conclude that the firm’s managers made adjustments to decrease profits. If they are positive, it means that manipulations were made to increase profits.

Table 4. Board structure and discretionary accruals.

Fama–Macbeth Regressions								
Variable	DA Subsample with $DA < 0$				DA Subsample with $DA > 0$			
	Model 3		Model 4		Model 5		Model 6	
Intercept	−0.1148 (−13.63)	***	−0.0350 (−1.94)		0.1379 (14.42)	***	−0.2630 (−5.18)	***
<i>BOD</i>	0.0081 (5.81)	***	0.0049 (4.63)	***	−0.0074 (−3.16)	**	0.0003 (0.48)	
<i>BOD_out</i>	−0.0199 (−1.64)		−0.0292 (−3.75)	**	0.0013 (0.12)		0.0394 (5.87)	***
<i>BOWN</i>	−0.0543 (−0.86)		−0.0785 (−2.11)		0.1531 (1.75)		0.0946 (2.38)	*
<i>BOWN_out</i>	−0.0103 (−0.18)		0.0534 (1.58)		−0.1697 (−1.86)		−0.1415 (−3.23)	**
<i>COWN</i>	0.0815 (0.95)		0.0689 (2.06)		−0.1620 (−1.91)		−0.1086 (−2.52)	*
<i>Large</i>			0.0241 (4.96)	***			−0.0077 (−1.97)	
<i>Foreign</i>			−0.0007 (−0.09)				−0.0521 (−3.48)	**
<i>SIZE</i>			0.0007 (0.59)				0.0094 (4.33)	**
<i>LEV</i>			−0.0356 (−19.53)	***			−0.0098 (−0.72)	
<i>ROA</i>			0.6435 (31.31)	***			1.1396 (56.27)	***
<i>COA</i>			−0.8065 (−33.56)	***			−1.1673 (−65.83)	***
<i>Big4</i>			0.0030 (1.05)				−0.0215 (−5.00)	***
Adj. R ²	0.0226		0.07860		0.0083		0.0735	

Numbers in parentheses are the t-statistics for the corresponding regression coefficients, and *, **, and *** indicate significance at the 1%, 5%, and 10% levels, respectively.

BOD, a characteristic of the board, is significantly positively related to negative discretionary accruals ($DA < 0$) and is significantly negatively related to positive discretionary accruals ($DA > 0$). These results demonstrate that firms with larger boards are more likely to decrease earnings and less likely to increase accruals.

BOD_out is significantly negatively related to negative discretionary accruals ($DA < 0$) and is significantly positively associated with positive discretionary accruals ($DA > 0$).

These findings show that firms with more outside directors are less likely to decrease earnings and more likely to increase accruals.

Among the corporate ownership structure variables, *BOWN* is significantly negatively correlated with negative discretionary accruals ($DA < 0$) and significantly positively correlated with positive discretionary accruals ($DA > 0$). Thus, firms with greater ownership by the board of directors are less likely to decrease earnings and more likely to increase accruals.

BOWN_out is significantly negatively associated with positive discretionary accruals ($DA > 0$), indicating that firms with greater ownership by outside directors make fewer adjustments to increase earnings.

COWN and positive discretionary accruals ($DA > 0$) are significantly negatively correlated. This result means that firms whose CEOs own more shares are less likely to increase earnings.

Models 4 and 6 also estimate the relationships between discretionary accruals and the control variables.

Large is significantly positively correlated with negative discretionary accruals ($DA < 0$). Thus, the more concentrated a firm's corporate ownership structure is, the more adjustments the managers make to reduce earnings.

Foreign is significantly negatively correlated with positive discretionary accruals ($DA > 0$). This result indicates that firms with more ownership by foreign investors are less likely to make adjustments to increase earnings.

SIZE is significantly positively related to positive discretionary accruals ($DA > 0$). Thus, the larger a firm is, the more its managers perform manipulations to increase earnings.

LEV is significantly negatively correlated with negative discretionary accruals ($DA < 0$). This finding shows that managers of more financially constrained firms are less likely to decrease earnings.

ROA is significantly positively associated with both negative ($DA < 0$) and positive ($DA > 0$) discretionary accruals. In other words, more profitable firms make more adjustments that decrease or increase their earnings.

COA is significantly negatively correlated with both negative ($DA < 0$) and positive ($DA > 0$) discretionary accruals. Thus, the better a firm's cash-generating ability is, the fewer adjustments its managers make to decrease or increase its earnings.

Finally, *Big4* is significantly negatively related to positive ($DA > 0$) discretionary accruals. Thus, firms with large-scale, high-quality auditors are less likely to increase their earnings.

6. Conclusions

This study empirically analyzes the relationship of earnings management with board characteristics and ownership structures using a sample of firms listed on the HOSE and the HNX in Vietnam. This study contributes to the literature by analyzing the effect of this relationship and exploring ways to control managers' opportunistic behaviors and increase firms' financial transparency.

I use discretionary accruals to proxy for earnings management following the modified Jones model. Board size and the proportion of outside directors are used as board characteristic variables, and ownership by the board of directors, outside directors, and the CEO as ownership structure variables.

Through various empirical analyses, I confirm that board size, outside directors' ownership, and CEO's ownership are negatively correlated with the magnitude of earnings management. These results demonstrate that firms with larger boards and greater proportions of shares held by outside directors and CEOs are more likely to mitigate earnings management. In contrast, the board of directors' share ownership positively correlates with the magnitude of earnings management. This finding indicates that firms whose directors hold more shares are more likely to actively manipulate earnings. I find no significant correlation between the proportion of outside directors and earnings management.

I find that board size and CEO ownership positively affect adjustments that reduce earnings and negatively affect adjustments that increase profits. Ownership by the board of directors and outside directors also negatively affects adjustments that reduce earnings. As well, I find that ownership by the board of directors positively affects adjustments that increase accruals.

In recognition of these empirical results, I suggest that Vietnam implement a corporate system to regulate the composition of boards of directors to improve firms' financial transparency. The board of directors plays an essential role in improving corporate governance. A target board size should be specified to support a successful board of directors. Ensuring that firms' boards are above a specific size is necessary based on the finding that earnings management can be mitigated as board size increases. Moreover, it is essential to establish a system to regulate outside directors. Currently, Vietnam's corporate law does not include provisions for outside directors. Previous studies show that outside directors represent the independence of the board of directors. A predominant strand of the literature finds that opportunistic earnings management is hindered when the proportion of outside directors is greater. Although my study determines that the proportion of outside directors is not significantly correlated with earnings management, it can be inferred that the outside directors in Vietnam may have personal relationships with managers, as no outside director system is currently in place. As most managers have the right to appoint outside directors, it is highly probable that they are selecting directors with whom they have close connections. Thus, it is necessary to strengthen the supervisory function of boards of directors by establishing an independent outside director system.

Overall, my study provides insights into existing studies on sustainable board structure mechanisms and managers' profit-adjusting behavior. This study will enhance the scope of understanding of the effect of the board structure on earnings management, especially in Vietnam, where the legal systems for minority shareholders are weak.

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Appendix A

Table A1. Definition of Variables.

Variable	Description
Description of variables in the modified Jones model	
TA_t (Total Accruals)	Total accruals in year t , net income—operating cash flow
DA_t (Discretionary Accruals)	Discretionary accruals in year t
NDA_t (Non – Discretionary Accruals)	Non-discretionary accruals in year t
A_t (Assets)	Total assets in year t
$\Delta Sales_t$	Change in sales in year t
ΔAR_t (Accounts Receivable)	Change in accounts receivable in year t
PPT_t (Property, Plant, and Equipment)	Property, plant, and equipment at the end of year t (excludes land and assets under construction)
Dependent variables	
$DA_{t,i}$	Discretionary accruals of firm i in year t
$AB_DA_{t,i}$	The absolute value of the discretionary accruals of firm i in year t
Independent variables	
Board characteristics variables	

Table A1. Cont.

Variable	Description
$BOD_{t,i}$	Size of the board of firm i in year t , that is, the number of members on the firm's board of directors
$BOD_out_{t,i}$	The proportion of outside directors on the board of firm i in year t , that is, the ratio of the number of outside directors to the total number of directors
Ownership structure variables	
$BOWN_{t,i}$	Board of directors' ownership of firm i in year t
$BOWN_out_{t,i}$	Ownership by outside directors of firm i in year t
$COWN_{t,i}$	CEO's ownership of firm i in year t
Control variables	
$Large_{t,i}$	Ownership by large shareholders of firm i in year t
$Foreign_{t,i}$	Foreign ownership of firm i in year t
$SIZE_{t,i}$	Size of firm i in year t , that is, the natural logarithm of the firm's total assets
$LEV_{t,i}$	Leverage ratio of firm i in year t , that is, the ratio of total liabilities to total assets
$ROA_{t,i}$	Return on the total assets of firm i in year t , that is, the ratio of net income to total assets
$COA_{t,i}$	Operating cash flow ratio of firm i in year t , that is, the ratio of operating cash flows to total assets
$Big4_{t,i}$	Dummy variable equal to one if firm i 's auditor is a member of the Big Four and zero otherwise

Notes

¹ See the Appendix A for the definitions of variables.

² See Note 1.

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