

A Structural Model of the Influence of Shareholding Structure and Board Characteristics on Earnings Management of Listed Companies in the Stock Exchange of Thailand: A Multilevel and Industry-Level Analysis

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Abstract

This study investigates the effects of ownership structure and board characteristics on earnings management among firms listed on the Stock Exchange of Thailand (SET) during 2019–2023. Secondary data was collected from annual reports and Form 56-1 of 447 companies (2,235 firm-year observations). The analysis employed multiple regression and multilevel structural equation modelling (SEM) to examine both direct and moderating effects. Research results reveal that institutional and foreign ownership significantly reduces earnings management, while managerial ownership increases it. CEO non-duality was found to mitigate earnings manipulation, whereas the proportion of independent directors and moderating interactions were not statistically significant. These findings suggest that robust governance mechanisms can restrain opportunistic managerial behavior, enhance financial transparency, and strengthen corporate accountability. The study provides theoretical contributions by integrating agency and resource-dependence perspectives and practical implications for regulators and investors seeking to improve financial reporting quality and sustainability in emerging capital markets.

Keywords: Ownership structure, Board characteristics, Earnings management, Thai capital market, Corporate governance

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Introduction

Corporate governance plays a critical role in shaping organizational credibility and the quality of financial reporting, particularly in emerging markets such as Thailand, where ownership structures are typically highly concentrated and dominated by family or individual controlling shareholders. The separation between ownership and control gives rise to agency conflicts, as conceptualized in agency theory, whereby managers may pursue their own interests at the expense of shareholders. Such conflicts can incentivize managerial opportunism, including the discretionary manipulation of accounting figures to present a more favorable short-term financial position practice commonly referred to as earnings management (Alves, 2012). These behaviors undermine the reliability of financial statements, erode investor confidence, and threaten the overall stability of capital markets.

Among the various corporate governance mechanisms, the role of independent directors has been widely recognized as a key factor in mitigating earnings management. Independent directors are expected to provide effective oversight, monitor managerial actions, and balance power within the board, thereby protecting minority shareholders and enhancing financial transparency (Yahaya, 2025). However, empirical evidence from developing economies remains inconclusive. While some studies demonstrate that independent directors significantly reduce earnings management, others fail to find a consistent relationship. These mixed findings may reflect variations in institutional environments, governance practices, and organizational cultures across countries (Nguyen et al., 2022).

In the context of the Stock Exchange of Thailand (SET), although formal governance regulations have been established—such as requirements for a minimum proportion of independent directors and the separation of the roles of board chair and chief executive officer—substantial heterogeneity in board structures and governance practices persists across industries. Moreover, recurring cases of accounting irregularities and financial reporting issues among listed firms continue to emerge (Sangboonnak & Prasertsri, 2019). These observations suggest that existing governance mechanisms may face limitations in effectively constraining managerial opportunism within the Thai capital market, thereby underscoring the need for a more systematic investigation of the determinants of earnings management.

From a theoretical perspective, this study extends agency theory by emphasizing principal–principal conflicts, which arise between controlling shareholders and minority

shareholders—an issue particularly salient in emerging markets characterized by concentrated ownership. In addition, this research integrates resource dependence theory to explain the strategic role of the board of directors, especially independent directors, as boundary spanners who bring valuable external resources, expertise, and legitimacy into the organization. Such contributions can reduce environmental uncertainty and improve the quality of financial reporting (Hillman et al., 2009).

From a practical standpoint, the findings of this study are expected to provide meaningful implications for regulators, including the Securities and Exchange Commission and the Stock Exchange of Thailand, in designing governance frameworks that are better aligned with industry-specific contexts. Strengthening board structures and enhancing governance effectiveness can contribute to greater transparency, accountability, and long-term sustainability in the capital market. Accordingly, this study aims to examine the role of ownership structure in influencing earnings management, under the moderating and monitoring effects of board characteristics, thereby contributing both theoretically and policy-relevantly to the understanding of corporate governance in the Thai context.

Conceptual Framework

This study aims to examine the impact of board characteristics on the relationship between ownership structure and earnings management of firms listed on the Stock Exchange of Thailand (SET), as illustrated in Figure 1.

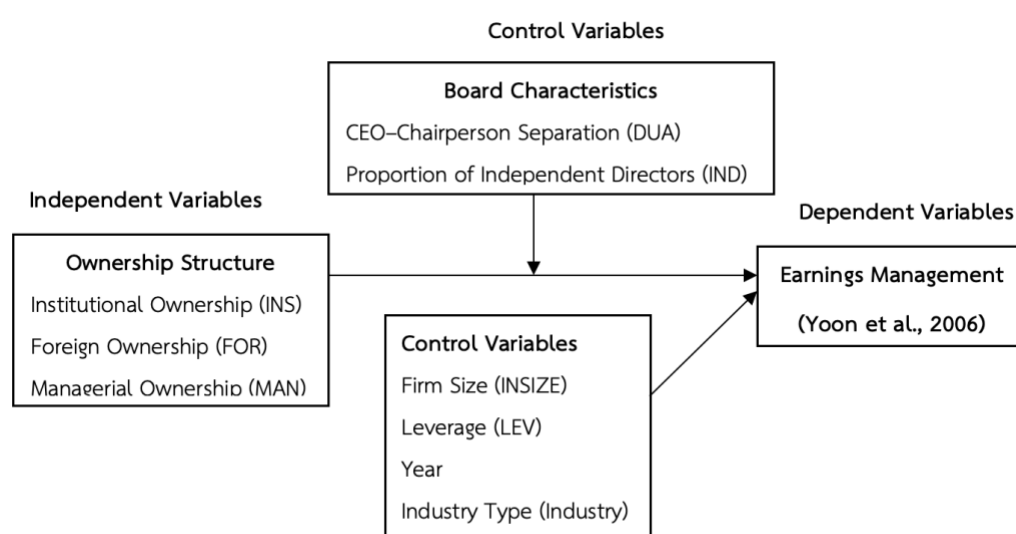


Figure 1 Conceptual Framework of the Study Research Hypotheses

H1: Institutional ownership has a negative effect on earnings management among firms listed on the Stock Exchange of Thailand (SET).

H2: Foreign ownership has a negative effect on earnings management among firms listed on the Stock Exchange of Thailand (SET).

H3: Managerial ownership has a positive effect on earnings management among firms listed on the Stock Exchange of Thailand (SET).

H4: The separation of the chairperson and CEO roles has a negative effect on earnings management among firms listed on the Stock Exchange of Thailand (SET).

H5: The proportion of independent directors has a negative effect on earnings management among firms listed on the Stock Exchange of Thailand (SET).

H6: The separation of the chairperson and CEO roles moderates the relationship between ownership structure and earnings management among firms listed on the Stock Exchange of Thailand (SET).

H7: The proportion of independent directors moderates the relationship between ownership structure and earnings management among firms listed on the Stock Exchange of Thailand (SET).

H8: The relationships among ownership structure, board characteristics, and earnings management differ significantly across industry groups of firms listed on the Stock Exchange of Thailand (SET).

Research Scope

Content Scope

This study examines the relationship between ownership structure, board characteristics, and earnings management (EM). Ownership structure includes institutional ownership (INS), foreign ownership (FOR), and managerial ownership (MAN). Board characteristics are represented by CEO non-duality (DUA) and the proportion of independent directors (IND). Earnings management is measured using discretionary accruals to capture managerial discretion in financial reporting.

Population and Sample Scope

The sample comprises firms listed on the Stock Exchange of Thailand (SET) with complete data during the study period. To ensure comparability and reliability, several exclusions are applied: firms listed on the Market for Alternative Investment (MAI), financial

sector firms, Real Estate Investment Trusts (REITs), and firms that were delisted. These criteria result in a final sample of 447 firms, yielding 2,235 firm-year observations for panel data analysis.

Geographical Scope

The study focuses on Thailand, an emerging economy characterized by concentrated ownership structures, making it an appropriate context for examining principal–principal conflicts between controlling and minority shareholders.

Time Scope

The analysis covers a five-year period from 2019 to 2023 (B.E. 2562–2566), providing sufficient data to capture recent corporate governance dynamics.

Literature Review

This study integrates Agency Theory, Resource Dependence Theory (RDT), and the Institutional Perspective to develop a comprehensive framework for explaining earnings management among firms listed on the Stock Exchange of Thailand (SET). These perspectives jointly explain how corporate governance mechanisms operate at both internal and external levels to shape managerial incentives and financial reporting behavior.

From the perspective of Agency Theory, conflicts between shareholders and managers arise due to information asymmetry and divergent interests, often leading to opportunistic practices such as earnings management (Jensen & Meckling, 1976). Governance mechanisms are therefore necessary to mitigate agency costs. In this context, ownership structure functions as an external governance mechanism, where institutional and foreign investors enhance monitoring and transparency, while managerial ownership may increase incentives for self-serving behavior.

Resource Dependence Theory (RDT) complements this view by emphasizing the role of the board of directors as an internal governance mechanism. Beyond monitoring, the board provides access to critical resources, expertise, and legitimacy, thereby strengthening oversight and reducing managerial opportunism (Pfeffer & Salancik, 1978; Hillman et al., 2009). Board characteristics, such as leadership structure and independence, are therefore essential in improving the quality of financial reporting.

In addition, the Institutional Perspective highlights the influence of external pressures from regulatory frameworks, international standards, and investor expectations in promoting

transparency and accountability (DiMaggio & Powell, 1983; OECD, 2023). In the Thai context, the presence of foreign investors and regulatory oversight from the Stock Exchange of Thailand and the Securities and Exchange Commission reinforces governance practices and constrains earnings management.

The integration of these three perspectives provides a multi-dimensional explanation of corporate governance dynamics, where ownership structure represents external governance, board characteristics represent internal governance, and institutional pressures operate at the market level. Despite extensive prior research, empirical evidence in Thailand remains limited, particularly studies adopting multi-level approaches. To address this gap, this study employs Multilevel Structural Equation Modeling (Multilevel SEM) to examine the effects of ownership structure and board characteristics on earnings management across firm- and industry-level contexts, offering a more comprehensive understanding of governance mechanisms.

Research Methodology

This study adopts a quantitative research design to examine the effects of ownership structure and board characteristics on earnings management behavior, including the moderating roles of the proportion of independent directors and the separation of the chairperson and CEO positions. All data are derived from secondary sources, including annual reports, financial statements, and Form 56-1 (One Report) of firms listed on the Stock Exchange of Thailand (SET, 2024).

The population consists of firms listed on the Stock Exchange of Thailand (SET), excluding those in the Market for Alternative Investment (MAI), financial sector firms, Real Estate Investment Trusts (REITs), and firms undergoing rehabilitation. The dataset covers a five-year period from 2019 to 2023. Firms with complete financial data over the study period are selected using purposive sampling.

The final sample comprises 447 firms, yielding a total of 2,235 firm-year observations in a panel dataset. The sample spans eight major industry groups, allowing for multilevel analysis across both firm-level and industry-level contexts.

Table 1 Measurement and Operational Definition of Variables

Variable Type	Variable / Abbreviation	Operational Definition	Measurement / Unit	Data Source	Key References
Dependent Variable	Earnings Management (EM)	The extent of managerial discretion in adjusting reported earnings to achieve desired outcomes	Measured using discretionary accruals based on the model of Yoon et al. (2006)	Annual reports and Form 56-1 (One Report)	Yoon et al. (2006); Dechow et al. (1995)
Independent Variables	Institutional Ownership (INS)	Proportion of shares held by institutional investors such as funds or corporate entities	(Institutional shares ÷ Total shares) × 100 (%)	SETSMART	Alves (2012); Hadani et al. (2011)
	Foreign Ownership (FOR)	Proportion of shares held by foreign investors	(Foreign shares ÷ Total shares) × 100 (%)	SETSMART	Fan & Wong (2002); OECD (2023)
	Managerial Ownership (MAN)	Proportion of shares held by executives or board members	(Managerial shares ÷ Total shares) × 100 (%)	Annual reports	Jensen & Meckling (1976); Leung & Cheng (2013)
Moderating Variables	CEO Non-Duality (DUA)	Whether the roles of chairperson and CEO are separated	Dummy variable: 0 = Duality, 1 = Separation	Form 56-1 (One Report)	Fama & Jensen (1983)
	Independent Directors (IND)	Proportion of independent directors	Number of independent directors ÷	Annual reports	Yahaya (2025)

Table 1 Measurement and Operational Definition of Variables (Continued)

Variable Type	Variable / Abbreviation	Operational Definition	Measurement / Unit	Data Source	Key References
Control Variables		directors on the board	Total board members (%)		
	Firm Size (INSIZE)	Financial size of the firm	ln (Total assets)	SETSMART	Fama & Jensen (1983)
	Leverage (LEV)	Degree of debt financing in capital structure	Total liabilities ÷ Total assets	Annual reports	Peasnell et al. (2005)
	Year	Fiscal year of data collection	Dummy variable	SETSMART	Hair et al. (2021)
	Industry	Industry classification based on SET categories	Dummy variable	SETSMART	SET (2024)

Data Collection and Data Quality Assurance

All data were collected from the SETSMART database and the website of the Securities and Exchange Commission (SEC) of Thailand. To ensure data accuracy and reliability, a data validation process was conducted. This process involved screening for missing values and identifying and treating outliers in accordance with the guidelines suggested by OECD (2023). These procedures were implemented to enhance the integrity and credibility of the dataset used in the analysis.

Table 2 Data Analysis Procedures

No.	Table / Analysis	Reported Information
Table 4	Descriptive Statistics of Independent, Control, Moderating, and Dependent Variables	Reports minimum (Min), maximum (Max), mean (Mean), standard deviation (SD), skewness, kurtosis, and distribution characteristics of each variable to provide an overall view of the dataset
Table 5	Pearson Correlation Coefficient Analysis among Study Variables	Reports Pearson correlation coefficients (r) among all variables, along with mean and standard deviation,

Table 2 Data Analysis Procedures (Continued)

No.	Table / Analysis	Reported Information
		including statistical significance levels to illustrate preliminary relationships prior to causal analysis
Table 6	Multiple Regression Analysis of Ownership Structure on Earnings Management (Model 1)	Reports regression coefficients (β), t-values, and p-values for each variable, along with F-statistic, p-value, R^2 , and adjusted R^2 to assess the influence of ownership structure on earnings management and model adequacy
Table 7	Multiple Regression Analysis of Main and Interaction Effects of Board Characteristics and Ownership Structure on Earnings Management	Reports β , t-values, and p-values for independent variables, control variables, and interaction terms across two models (Model 2 = main effects, Model 3 = interaction effects), including F, p, R^2 , and adjusted R^2 to evaluate both direct and moderating effects
Table 8	Multilevel Structural Equation Modeling (Multilevel SEM)	Presents the multilevel SEM framework consisting of three models, including analytical equations and key results, demonstrating that ownership structure has a direct effect on earnings management, while certain board characteristics have partial effects but do not significantly strengthen moderating relationships
Table 9	Model Fit Indices of Structural Equation Modeling	Evaluates the goodness-of-fit of the multilevel SEM model to determine whether the proposed model fits the empirical data
Table 10	Summary of Relationships between Independent Variables and Earnings Management (EM)	Provides a concise summary of findings from regression and SEM analyses, indicating that ownership variables and some board characteristics significantly affect earnings management, while interaction effects and independent directors show no clear impact
Table 11	Summary of Hypothesis Testing Results (H1–H8)	Presents an overall summary of hypothesis testing results, showing that most main hypotheses are supported, except for those related to independent directors and moderating interaction effects

General Research Model

$$EM_{it} = \alpha + \beta_1 OWN_{it} + \beta_2 BOARD_{it} + \beta_3 (OWN_{it} \times BOARD_{it}) + \beta_4 CONTROLS_{it} + \varepsilon_{it}$$

Where:

- **OWN** represents ownership structure,
- **BOARD** refers to board characteristics, and
- **CONTROLS** include firm size, leverage, year, and industry (Fama & Jensen, 1983).

Table 3 List of Variable Abbreviations and Descriptions

Abbreviation	Full Name / Description	Meaning in the Study
EM	Earnings Management	The level of earnings management, used as the dependent variable to reflect managerial discretion in financial reporting
INS	Institutional Ownership	The proportion of shares held by institutional investors (e.g., funds or corporate entities) relative to total shares
FOR	Foreign Ownership	The proportion of shares held by foreign investors relative to total shares
MAN	Managerial Ownership	The proportion of shares held by executives or board members relative to total shares
DUA	CEO Non-Duality	Separation of the roles of chairperson and CEO (0 = duality, 1 = separation)
IND	Independent Directors	The proportion of independent directors on the board (number of independent directors ÷ total board members)
INSIZE	Firm Size	Firm size measured as the natural logarithm of total assets (ln Total Assets)
LEV	Leverage Ratio	The ratio of total liabilities to total assets, reflecting the firm's financial risk
Year	Fiscal Year	The fiscal year used for data collection, included as a dummy variable to control for time effects
Industry	Industry Group	The industry classification of firms, used to control structural differences across industries

Table 3 List of Variable Abbreviations and Descriptions (Continued)

Abbreviation	Full Name / Description	Meaning in the Study
INS × IND	Institutional Ownership × Independent Directors	Interaction term used to test the moderating role of independent directors on the relationship between institutional ownership and earnings management
FOR × DUA	Foreign Ownership × CEO Non-Duality	Interaction term between foreign ownership and CEO non-duality
MAN × DUA	Managerial Ownership × CEO Non-Duality	Interaction term between managerial ownership and CEO non-duality

Note: All data were obtained from the SETSMART database and Form 56-1 (One Report) of firms listed on the Stock Exchange of Thailand during 2019–2023 (SET, 2024).

Table 4 Endogeneity Testing and Robustness Analysis

Variables	Model 1 OLS	Model 2 Lagged	Model 3 Multilevel
	Regression	Model (t–1)	SEM
INS	-0.138***	-0.126***	-0.121***
FOR	-0.094**	-0.088**	-0.083**
MAN	0.112***	0.104***	0.097***
IND	-0.019	-0.016	-0.014
DUA	-0.081**	-0.075**	-0.071**
INSIZE	0.058**	0.053**	0.056**
LEV	0.073***	0.069***	0.071***
Industry Control	Yes	Yes	Yes
Year Control	Yes	Yes	Yes
N	2,235	2,235	2,235
R ² / Model Fit	0.31	0.29	0.33

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

Table 4 reports robustness tests addressing endogeneity using multiple regression (Model 1), a lagged model (t–1; Model 2), and multilevel SEM (Model 3). Results are consistent across all models: institutional (INST) and foreign ownership (FOR) negatively affect earnings management, while managerial ownership (MAN) has a positive effect. CEO non-duality also shows a significant negative relationship. The consistency, particularly with lagged variables, supports robustness and mitigates endogeneity concerns from reverse causality.

Research Findings

Based on a sample of 447 firms over a five-year period (2019–2023), yielding a total of 2,235 firm-year observations, descriptive statistics were employed to provide an initial overview of the variables used in this study. The results are presented in Table 5.

Table 5 Descriptive Statistics of Independent, Control, Moderating, and Dependent Variables (N = 2,235 firm-year observations)

Variable	Unit	Min	Max	Mean	SD	Skewness	Kurtosis	Distribution
INS	%	0	96.66	9.54	14.45	1.38	3.14	right skewed
FOR	%	0	77.15	3.12	9.76	1.19	3.36	Moderately right skewed
MAN	%	0	78	10.49	16.27	1.18	3.09	Right skewed
DUA	Dummy (0–1)	0	1	0.17	0.38	1.32	2.67	Right-skewed (low values dominate)
IND	Ratio	0.3	1	0.44	0.1	-0.48	2.78	Slightly left-skewed
INSIZE	ln (Total Assets)	11.96	21.96	15.97	1.56	0	2.97	Approximately normal
LEV	Times	0	1	0.44	0.21	0.29	2.85	Approximately normal
EM	Index (Yoon Model)	-0.29	0.06	-0.016	0.05	-0.78	2.72	Left-skewed

Note: 1. Data was obtained from Form 56-1 (One Report) and the SETSMART database for firms listed on the Stock Exchange of Thailand during 2019–2023.

2. The variable DUA is coded as 0 = CEO duality and 1 = separation of the chairperson and CEO roles.

Table 5 reports descriptive statistics for 2,235 observations. Institutional ownership (INS) averages 9.54% and is right-skewed, while foreign ownership (FOR) is lower (3.12%) with a similar distribution. Managerial ownership (MAN) is higher (10.49%), indicating stronger internal control, though still right skewed.

CEO duality (DUA) averages 0.17, suggesting most firms combine roles, whereas independent directors (IND) average 44% with relatively stable distribution. Firm size (INSIZE) and leverage (LEV) are approximately normally distributed, with means of 15.97 and 0.44.

Earnings management (EM) has a mean of -0.016 , indicating a tendency toward income-decreasing behavior, with slight left-skewness and limited extreme variation.

Table 6 Pearson Correlations Among Study Variables (N = 2,235)

Variable	1	2	3	4	5	6	7	8	M	SD
1. EM	—								-0.016	0.05
2. INS	-.058*	—							9.54	14.45
3. FOR	-.069**	-.001	—						3.12	9.76
4. MAN	.178**	-.206**	.312**	—					10.49	16.27
5. DUA	-.024	-.058**	.097**	.154**	—				0.17	0.38
6. IND	0.022	-.009	0.026	.120**	0.018	—			0.44	0.1
7. INSIZE	0.03	.414**	-.100**	-.182**	-.029	-.016	—		15.97	1.56
8. LEV	0.014	.148**	-.018	-.024	-.012	.069**	.423**	—	0.44	0.21

Note: $p < .05$. $p < .01$ (two-tailed). Correlations are reported below the diagonal. VIF values < 2 and tolerance $> .10$ indicate no multicollinearity (Hair et al., 2021).

Pearson correlation results show that institutional (INS) and foreign ownership (FOR) are negatively and significantly related to earnings management (EM) ($p < .01$), indicating stronger governance reduces opportunistic behavior. In contrast, managerial ownership (MAN) is positively associated with EM, suggesting greater discretionary reporting.

For control variables, firm size (INSIZE) and leverage (LEV) are positively correlated with INS and FOR, reflecting that larger firms attract external investors and have more complex capital structures. VIF and Tolerance values indicate no multicollinearity, supporting the suitability of the data for regression analysis.

Table 7 Multiple Regression Analysis of Ownership Structure on Earnings Management (Model 1)

Variable	β	t	p
Constant	-6.044	—	0
INS	-0.055	-2.650	.008**
FOR	-0.093	-3.584	.000**
MAN	0.188	7.994	.000**
INSIZE	0.051	2.173	.030*

Table 7 Multiple Regression Analysis of Ownership Structure on Earnings Management (Model 1)
(Continued)

Variable	β	t	p
LEV	-0.021	-0.938	0.349
IND1	0.016	0.716	0.474
IND2	0.024	1.057	0.291
IND3	0.043	1.985	.047*
IND4	-0.008	-0.355	0.722
IND5	-0.160	-7.529	.000**
IND6	0.024	1.092	0.275
Y2566	0.216	9.819	.000**
Y2565	0.248	10.586	.000**
Y2564	0.347	13.312	.000**
Y2563	0.321	13.73	.000**

Model Fit: $F = 39.56$, $p < .001$, $R^2 = .232$, Adjusted $R^2 = .226$

Note: $p < .05$. $p < .01$ (two-tailed).

The regression model is significant ($F = 39.56$, $p < .001$) and explains 23.2% of the variance in earnings management ($R^2 = .232$), indicating the importance of ownership structure. Institutional (INS) and foreign ownership (FOR) significantly reduce earnings management, while managerial ownership (MAN) increases it. Among controls, firm size (INSIZE) shows a small positive effect, whereas leverage (LEV) and most industry dummies are not significant. Overall, ownership structure is a key determinant of earnings management in the Thai capital market.

Table 8 Multiple Regression Analysis of Main and Interaction Effects of Board Characteristics and Ownership Structure on Earnings Management

Variable	Model 2 β	t	p	Model 3 β	t	p
Constant	-5.971	—	0	-6.045	—	0
INS	-0.059	-2.837	.005**	-0.056	-2.569	.010*
FOR	-0.090	-3.503	.000**	-0.098	-3.241	.001**
MAN	0.192	8.073	.000**	0.198	7.284	.000**
DUA	-0.055	-2.749	.006**	-0.059	-2.786	.005**
IND	0.023	1.113	0.266	0.024	1.146	0.252
INSIZE	0.051	2.18	.029*	0.053	2.282	.023*

Table 8 Multiple Regression Analysis of Main and Interaction Effects of Board Characteristics and Ownership Structure on Earnings Management (Continued)

Variable	Model 2 β	t	p	Model 3 β	t	p
LEV	-0.021	-0.938	0.348	-0.021	-0.948	0.343
IND1-IND6	...	...	...	...	...	...
Y2566	0.213	9.696	.000**	0.214	9.7	.000**
Y2565	0.249	10.629	.000**	0.248	10.549	.000**
Y2564	0.348	13.354	.000**	0.347	13.239	.000**
Y2563	0.324	13.876	.000**	0.323	13.767	.000**
MCINS_DUA	—	—	—	-0.020	-0.892	0.372
MCFOR_DUA	—	—	—	0.014	0.539	0.59
MCMAN_DUA	—	—	—	-0.014	-0.537	0.591
MCINS_IND	—	—	—	-0.019	-0.965	0.334
MCFOR_IND	—	—	—	0.002	0.101	0.919
MCMAN_IND	—	—	—	0.002	0.108	0.914

Model Fit: Model 2: $F = 10.99$, $p < .001$, $R^2 = .235$, Adjusted $R^2 = .228$

Model 3: $F = 26.31$, $p < .001$, $R^2 = .236$, Adjusted $R^2 = .227$

Note: $p < .05$. $p < .01$ (two-tailed).

Table 8 reports main effects (Model 2) and interaction effects (Model 3). In Model 2, institutional (INS) and foreign ownership (FOR) significantly reduce earnings management ($p < .01$), while managerial ownership (MAN) increases it ($p < .01$). CEO non-duality (DUA) also shows a significant negative effect, whereas independent directors (IND) are not significant. In Model 3, no interaction effects are significant, indicating that internal and external governance mechanisms operate independently rather than synergistically.

Table 9 Multilevel SEM Models Used in the Study

Model	Objective	Analytical Equation	Key Findings
Model 1 (Direct Effects)	To examine the direct effects of ownership structure on	$EM = \beta_0 + \beta_1 INS + \beta_2 FOR + \beta_3 MAN + \beta_4 INSIZE + \beta_5 LEV$	Institutional ownership (INS) and foreign ownership (FOR) have significant negative effects on earnings management (EM), while managerial

Table 9 Multilevel SEM Models Used in the Study (Continued)

Model	Objective	Analytical Equation	Key Findings
	earnings management	$+ \beta_6 \text{Year} + \beta_7 \text{Industry} + \varepsilon$	ownership (MAN) has a significant positive effect
Model 2 (Add Board Variables)	To examine the effects of board characteristics on earnings management	$\text{EM} = \text{Model 1} + \beta_8 \text{DUA} + \beta_9 \text{IND}$	CEO non-duality (DUA) has a significant negative effect on EM, whereas the proportion of independent directors (IND) shows no significant effect
Model 3 (Moderating Effects)	To test the moderating effects of DUA and IND on the relationships between INS, FOR, MAN and EM	$\text{EM} = \text{Model 2} + (\text{INS} \times \text{DUA}) + (\text{FOR} \times \text{DUA}) + (\text{MAN} \times \text{DUA}) + (\text{INS} \times \text{IND}) + (\text{FOR} \times \text{IND}) + (\text{MAN} \times \text{IND})$	No statistically significant moderating effects are found, indicating that board mechanisms do not strengthen the relationship between ownership structure and earnings management

The three models follow a hierarchical approach: Model 1 tests ownership structure, Model 2 adds internal governance, and Model 3 examines moderating effects. Results show that institutional and foreign ownership effectively reduce earnings management, while managerial ownership increases it due to self-interest. Internal governance mechanisms—CEO non-duality (DUA) and independent directors (IND)—have limited impact, and no significant interaction effects are found, indicating that internal and external governance operate independently rather than synergistically. Model fit was assessed using CFI, TLI, RMSEA, and SRMR based on established criteria (Hu & Bentler, 1999).

Table 10 Model Fit Indices of Multilevel Structural Equation Modeling

Fit Index	Estimated Value	Recommended Threshold	Interpretation
CFI (Comparative Fit Index)	0.961	≥ 0.95	Good model fit
TLI (Tucker–Lewis Index)	0.953	≥ 0.95	Good model fit

Table 10 Model Fit Indices of Multilevel Structural Equation Modeling (Continued)

Fit Index	Estimated Value	Recommended Threshold	Interpretation
RMSEA (Root Mean Square Error of Approximation)	0.043	≤ 0.06	Low approximation error
SRMR (Standardized Root Mean Square Residual)	0.038	≤ 0.08	Good model fit

The results indicate that all fit indices meet the recommended thresholds. Specifically, the values of CFI (0.961) and TLI (0.953) exceed the minimum criterion of 0.95, indicating a good model fit. The RMSEA value (0.043) is below 0.06, suggesting a low level of approximation error, while the SRMR value (0.038) is below 0.08, further confirming good model fit.

Table 11 Summary of Relationships Between Independent Variables and Earnings Management (EM)

Variable	Relationship with EM	Statistical Significance	Direction
INS (Institutional Ownership)	Significant effect on EM	Significant ($p < .01$)	Negative
FOR (Foreign Ownership)	Significant effect on EM	Significant ($p < .01$)	Negative
MAN (Managerial Ownership)	Significant effect on EM	Significant ($p < .01$)	Positive
DUA (CEO Non-Duality)	Significant effect on EM	Significant ($p < .01$)	Negative
IND (Independent Directors)	No effect on EM	Not significant	—
Moderating Effects	No effect on EM	Not significant	—

Table 11 shows that institutional (INS) and foreign ownership (FOR) significantly reduce earnings management ($p < .01$), indicating stronger monitoring by external investors. Managerial ownership (MAN), however, increases earnings management ($p < .01$), suggesting entrenchment effects. CEO non-duality (DUA) is negatively related to earnings management, supporting the benefit of separating leadership roles. In contrast, independent directors (IND) and all interaction effects are not significant, implying limited influence within this model.

Table 12 Summary of Hypothesis Testing Results

Hypothesis	Description	Result	Statistical Significance	Direction
H1	Institutional ownership (INS) affects earnings management	Supported	$p < .01$	Negative
H2	Foreign ownership (FOR) affects earnings management	Supported	$p < .01$	Negative
H3	Managerial ownership (MAN) affects earnings management	Supported	$p < .01$	Positive
H4	CEO non-duality (DUA) affects earnings management	Supported	$p < .01$	Negative
H5	Independent directors (IND) affect earnings management	Not supported	Not significant	—
H6	Independent directors (IND) moderate the relationship between ownership structure and earnings management	Not supported	Not significant	—
H7	CEO non-duality (DUA) moderates the relationship between ownership structure and earnings management	Not supported	Not significant	—
H8	Ownership structure and board characteristics jointly affect earnings management	Supported	$p < .01$	Mixed (positive–negative)

The findings confirm that ownership structure, particularly institutional and foreign ownership, plays a crucial role in reducing earnings management. In contrast, managerial ownership increases the risk of earnings manipulation, reflecting potential opportunistic behavior by executives. Regarding board characteristics, CEO non-duality enhances transparency, while the proportion of independent directors and moderating effects do not show clear or significant impacts. These results highlight the limitations of corporate governance mechanisms within the Thai capital market context.

Discussion of Findings

The findings indicate that institutional and foreign ownership are significantly negatively associated with earnings management, highlighting the role of professional and

external investors as effective monitoring mechanisms. These investors enhance financial transparency and reduce managerial opportunism, consistent with evidence from emerging markets (Fan & Wong, 2002).

In contrast, managerial ownership is positively associated with earnings management, suggesting that higher ownership by executives may lead to entrenchment behavior. Managers with greater control may use accounting discretion to serve personal interests, supporting prior findings that managerial ownership can increase incentives for earnings manipulation beyond certain levels (Alves, 2012).

Regarding board characteristics, CEO non-duality shows a significant negative effect on earnings management, indicating that the separation of leadership roles strengthens internal governance and reduces the concentration of power. This supports the argument that structural independence within the board enhances oversight effectiveness.

However, the proportion of independent directors is not significantly related to earnings management, which may reflect limitations in their actual effectiveness in emerging market contexts such as Thailand. Although firms comply with governance requirements, such compliance may be symbolic rather than substantive (DiMaggio & Powell, 1983). Moreover, measuring independence solely by proportion may fail to capture the quality, expertise, or engagement of directors (Klein, 2002).

Finally, the absence of significant moderating effects suggests that internal and external governance mechanisms do not operate synergistically. This may be due to the highly concentrated ownership structure typical of Thai listed firms, where controlling shareholders exert dominant influence, limiting the combined effectiveness of governance mechanisms (Claessens & Yurtoglu, 2013).

Theoretical Implications

This study contributes to the literature by extending understanding of corporate governance mechanisms in emerging markets, particularly in the context of Thailand's highly concentrated ownership structure. The finding that institutional and foreign ownership reduce earnings management highlights the role of external monitoring and aligns with Institutional Theory, which suggests that firms adapt their behavior in response to pressures from professional investors and global governance standards (DiMaggio & Powell, 1983; OECD, 2023).

From an Agency Theory perspective, the positive effect of managerial ownership supports the presence of principal–principal conflicts, where controlling shareholders (often managers) may act against the interests of minority shareholders (Jensen & Meckling, 1976). This finding is particularly relevant in emerging markets, where ownership concentration differs from the principal–agent focus commonly observed in developed economies.

In addition, the significant effect of CEO non-duality reinforces the importance of board structure in mitigating opportunistic behavior. This result is consistent with Resource Dependence Theory, which emphasizes the role of the board in providing oversight, external linkages, and legitimacy that enhance transparency and reduce uncertainty (Pfeffer & Salancik, 1978; Hillman et al., 2009).

Overall, this study integrates Agency Theory, Resource Dependence Theory, and Institutional Theory to provide a more comprehensive explanation of governance mechanisms. It offers empirical evidence that strengthens theoretical development in corporate governance research within Southeast Asian and emerging market contexts (Claessens & Yurtoglu, 2013).

Practical Implications

From a policy perspective, the findings suggest that institutional and foreign investors play a crucial role in enhancing financial reporting quality and reducing earnings management. Regulatory bodies, such as the Securities and Exchange Commission and the Stock Exchange of Thailand, should therefore encourage greater participation of institutional investors and promote governance standards aligned with international best practices (OECD, 2023).

At the organizational level, the results highlight the importance of CEO non-duality in strengthening internal governance. Firms should design board structures that ensure a clear separation of power, thereby improving oversight effectiveness and reducing opportunities for earnings manipulation (Fama & Jensen, 1983). In addition, efforts should be made to enhance the quality and effectiveness of board governance, beyond mere structural compliance (Klein, 2002).

At the industry and system level, regulators should develop context-specific governance frameworks that reflect differences across industries. More importantly, there is a need to promote an applied governance system that goes beyond formal requirements and fosters a corporate culture emphasizing transparency, accountability, and effective oversight in practice (DiMaggio & Powell, 1983).

Limitations and Future Research Directions

This study has several limitations that should be acknowledged. First, although secondary data from annual reports and Form 56-1 provide reliable and standardized information, they may not fully capture internal organizational behaviors that are not publicly disclosed, such as managerial decision-making processes or real earnings management practices. Future research should therefore incorporate qualitative approaches, such as in-depth interviews with executives and board members, to gain deeper insights into managerial motivations and financial decision-making (Healy & Wahlen, 1999).

Second, this study focuses exclusively on firms listed on the Stock Exchange of Thailand, which may limit the generalizability of the findings to other types of organizations. Future studies could extend the scope to include non-listed firms or specific industry sectors to provide comparative insights into governance structures and earnings management behavior across different organizational contexts.

Third, while the use of Multilevel Structural Equation Modeling (Multilevel SEM) allows for a comprehensive analysis of structural relationships, the model does not explicitly incorporate institutional-level variables, such as regulatory enforcement, government policies, or external investor pressures. Future research is encouraged to integrate these institutional factors to better capture the broader governance environment and its influence on financial reporting quality.

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