

Article

Corporate Life-Cycle Stages, Leverage, and Earnings Management: Empirical Evidence from Listed Firms in Vietnam

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Abstract

The paper investigates the evolution of earnings management across corporate life-cycle stages and evaluates the moderating role of leverage within an emerging market context. Utilising a dataset of 273 non-financial firms listed on Vietnamese stock exchanges over the 2012–2022 period (3003 firm-year observations), we delineate life-cycle phases—introduction, growth, maturity, and decline—using net cash flow patterns. Earnings quality is proxied via diverse discretionary accrual models. Methodologically, the study employs fixed-effects regressions with firm-clustered standard errors, incorporating interaction terms to capture stage-specific leverage dynamics. The empirical evidence reveals a non-linear and stage-dependent trajectory of earnings management, with introduction- and decline-stage firms exhibiting higher discretionary accruals compared to benchmarks. Crucially, the institutional impact of debt financing is contingent upon corporate maturity; while leverage exhibits a baseline positive association with earnings management, this relationship diminishes or reverses during the introduction and decline phases. These insights withstand rigorous robustness checks, including different discretionary accrual models and alternative life-cycle classifications. This study advances current literature by integrating capital structure into the corporate life-cycle framework, demonstrating that leverage effects are dynamic and shaped by shifting financial constraints and monitoring environments. Ultimately, the findings offer valuable insights into financial reporting incentives in emerging markets characterised by concentrated ownership and transitional corporate governance, yielding critical implications for regulators, investors, and auditors.

Keywords: corporate life-cycle stages; discretionary accruals; earnings management; emerging markets; leverage; Vietnam



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1. Introduction

The reporting quality of financial statements plays a critical role in capital market efficiency, as it shapes investors' ability to evaluate firm performance and allocate resources effectively. Among the various factors that may impair reporting quality, earnings management has been extensively examined due to its potential to distort accounting information and obscure firms' underlying economic conditions (P. Dechow et al., 2010; Healy & Wahlen, 1999). Despite a substantial body of research, empirical evidence on the determinants of financial reporting manipulation remains controversial, suggesting that managerial reporting behaviour is likely to vary across different firm contexts (Alves, 2012; Callao et al., 2021; F. Guo & Ma, 2015; Klein, 2002; Leuz et al., 2003; H. A. Nguyen et al., 2021). This heterogeneity implies that earnings management is not a uniform phenomenon

but is shaped by underlying firm-level structural characteristics and financial incentives that vary over time.

One important source of such heterogeneity is the life-cycle stages of corporate development. Life-cycle theory posits that firms develop through a sequence of phases—typically introduction, growth, maturity, and decline—each associated with distinct operational characteristics, risk profiles, and financing needs (Anthony & Ramesh, 1992; Dickinson, 2011). These structural differences systematically alter firm-level financing constraints, information asymmetry, and governance intensity, thereby affecting managerial motivations and opportunities for earnings management. For example, firms in early stages often face high uncertainty and rely heavily on external financing, while mature firms operate under more stable conditions with stronger governance mechanisms. Firms in decline, in contrast, encounter deteriorating performance and heightened survival pressures. Consequently, earnings management is expected to vary systematically across corporate life-cycle stages due to differences in financial pressure, monitoring intensity, and information asymmetry (Almand et al., 2023; Hussain et al., 2020).

While previous studies have documented such variation, financial determinants of earnings management are often implicitly assumed to exert uniform effects across firms. In particular, financial leverage—one of the most frequently examined drivers of accounting discretion—is typically modelled as exerting a constant influence, regardless of underlying firm characteristics (Duc Hieu & Ha Anh, 2023; Ghose et al., 2025; Jaggi et al., 2022). This conventional assumption, however, may overlook critical heterogeneity arising from differences in firms' financial constraints and monitoring environments. From a debt covenant perspective, higher leverage intensifies pressure on managers to meet contractual obligations and avoid covenant violations, thereby driving upward earnings manipulation, particularly when firms face tight liquidity conditions or heightened refinancing risks (DeFond & Jiambalvo, 1994; Ghose et al., 2025). Crucially, this directional effect is unlikely to be homogeneous; rather, the impact of leverage is contingent on a firm's life-cycle position, given that financial constraints, governance intensity, and distress risks vary systematically across stages of corporate development.

In the initial stages, high uncertainty and limited operating history may weaken the monitoring role of debt financing, thus amplifying information asymmetry and managerial discretion. Conversely, in declining stages, financial distress may intensify motivations for opportunistic reporting; however, heightened creditor and auditor scrutiny may simultaneously constrain such behaviour. By contrast, during intermediate phases where firms operate under relatively stable conditions, leverage may exhibit a more stable and less state-dependent influence on financial reporting. Taken together, these life-cycle dynamics suggest that the relationship between leverage and earnings management is fundamentally conditional and heterogeneous rather than uniform across firms.

Despite its theoretical relevance, relatively little empirical research has examined how leverage interacts with corporate development stages in shaping discretionary accruals reporting. Existing studies typically analyse life-cycle effects and leverage effects separately, overlooking their potential joint and contingent influence on financial reporting behaviour. As a result, the interaction between firms' financial structure and their stages of development remains underexplored in the earnings management literature. This gap is particularly important in emerging markets, where institutional environments, ownership structures, and corporate governance systems differ significantly from those in developed economies (Q. Nguyen et al., 2024; Pham & Hoang, 2025), potentially amplifying agency conflicts and financial reporting incentives. In Vietnam, for example, firms often operate under a bank-oriented financial system, concentrated ownership structures, and evolving regulatory frameworks, which may alter the role of leverage across different phases of cor-

porate development, thereby making the country a particularly suitable setting to examine how financial structure and life-cycle dynamics interactively affect earnings management.

This paper addresses the identified research gap by simultaneously examining corporate life-cycle stages and leverage in explaining discretionary accrual-based earnings management in an emerging market context. Relying on a panel dataset from non-financial enterprises listed on the Vietnam Stock Exchange over the 2012–2022 period, companies are classified into different stages of life cycles following Dickinson (2011)'s net cash flow approach. Manipulation of earnings is measured via discretionary accruals derived from multiple accrual models, and interaction variables are introduced to capture the moderating role of leverage.

The analysis suggests a non-linear variation in earnings management across corporate life-cycle stages. Companies in the phases of introduction and decline demonstrate higher levels of discretionary accruals, while those in the growth and maturity stages display relatively lower levels of earnings management. More importantly, the effect of leverage is found to vary across stages. Specifically, the positive relationship between leverage and managerial earnings manipulation weakens—and in some cases becomes negative—in the stages of introduction and decline. These findings reinforce the view that the effect of leverage on earnings management is not uniform but depends on firms' life-cycle position and associated financial constraints.

This study makes three main contributions to the literature. First, it provides further evidence supporting the explanatory power of the corporate life-cycle framework in explaining variations in earnings management. Second, it extends prior studies by showing that the effect of leverage is conditional on firm development rather than constant across firms with different financial constraints and monitoring environments. Third, by providing evidence from Vietnam, an emerging market characterised by concentrated ownership and evolving governance structures, the study enhances understanding of how institutional settings shape the interaction between financial structure and earnings management. The findings also provide practical implications for policymakers, independent auditors, investors, and other stakeholders by highlighting the importance of considering corporate life-cycle stages when assessing the effect of leverage on financial reporting quality.

The remainder of this paper is organised as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 describes the research design and method. Section 4 reports the empirical findings. Section 5 concludes the study and discusses implications.

2. Literature Review and Hypothesis Development

2.1. Corporate Life-Cycle Phases and Earnings Management

Corporate life-cycle theory suggests that firms evolve through a sequence of distinct developmental phases, typically including introduction, growth, maturity, and decline, each characterised by different operating conditions, financing structures, and governance environments (Dickinson, 2011; Hasan et al., 2015; Miller & Friesen, 1984). These structural differences shape firms' information environment, financing constraints, and monitoring intensity, thus influencing managerial incentives for earnings management.

A growing body of literature links corporate life-cycle phases to financial reporting behaviour. In the introduction stage, firms typically exhibit limited operating history, negative or volatile cash flows, and heavy reliance on external financing. Such conditions intensify asymmetric information between managers (the preparers of financial reports) and external stakeholders (the users), creating both motivations and opportunities for earnings management as firms attempt to signal financial viability and access external capital (Almand et al., 2023; Almeida & Kale, 2024; Anthony & Ramesh, 1992; Hussain et al., 2020).

As companies transition into the growth phase, operating performance improves, and cash flows become more stable (Anthony & Ramesh, 1992; Dickinson, 2011). Improved market reputation and greater access to capital markets reduce information asymmetry and weaken pressures for aggressive financial reporting while simultaneously increasing external monitoring from investors and analysts. In the maturity stage, firms benefit from established operations, predictable cash flows, and stronger governance mechanisms, which generally mitigate information friction and strengthen monitoring, thereby limiting opportunistic earnings management (Almeida & Kale, 2024; P. M. Dechow & Dichev, 2002; Habib et al., 2019; Hasan & Habib, 2017; da Silva et al., 2025). However, the presence of free cash flow may still create incentives for income smoothing through accrual-based or real activity manipulation aimed at stabilising reported performance (Leuz et al., 2003; Jensen, 1986). In the decline phase, deteriorating performance and financial distress intensify pressure on managers to conceal unfavourable outcomes, thereby fostering earnings management, although this effect may be partially offset by heightened creditor and auditor scrutiny (Almeida & Kale, 2024; Cahan & Zhang, 2006; P. M. Dechow et al., 2011; Rosner, 2003).

In general, empirical evidence from numerous studies supports the view that opportunistic reporting behaviour varies systematically across company life-cycle stages (Almeida & Kale, 2024; Dickinson, 2011; Hasan et al., 2015; Hussain et al., 2020; Jaggi et al., 2022). However, these variations are not driven solely by firm age or performance, but by underlying differences in financial constraints, information asymmetry, and monitoring intensity across developmental phases. This implies that corporate life-cycle stages operate as a structural determinant of reporting incentives rather than a purely descriptive classification. Drawing on the above theoretical arguments, and using the shake-out stage as the reference category (baseline phase), the following hypotheses are developed:

H1. *Firms in the introduction phase are more likely to engage in earnings management than firms in the baseline phase.*

H2. *Firms in the growth phase are less likely to engage in earnings management than firms in the baseline phase.*

H3. *Firms in the maturity phase are less likely to engage in earnings management than firms in the baseline phase.*

H4. *Firms in the decline phase are more likely to engage in earnings management than firms in the baseline phase.*

2.2. Leverage and Its Moderating Role Across Life-Cycle Phases

Financial leverage has long been identified as a critical determinant of earnings management, given its implications for debt contracting and financial constraints. According to debt contracting theory, highly leveraged firms face greater incentives to avoid covenant violations and maintain external financing access, which may induce upward earnings manipulation, thereby linking capital structure directly to managerial reporting incentives (DeFond & Jiambalvo, 1994; Healy & Wahlen, 1999; Jaggi & Lee, 2002). Consequently, a large body of empirical literature documents a positive association between financial leverage and accrual-based earnings management (Asim & Ismail, 2019; Ghose et al., 2025; H. A. Nguyen et al., 2021). However, this relationship may not be uniform across firms, as leverage also functions as a governance mechanism through increased monitoring by creditors, auditors, and other stakeholders (Ahn & Choi, 2009; Chung et al., 2004; López-Iturriaga & Saona Hoffmann, 2005; Park & Shin, 2004). As a result, its overall effect on earnings man-

agement is inherently ambiguous and contingent on firm-specific conditions, particularly firms' financial constraints and information environments. One crucial contextual factor shaping these dynamics is the stage of corporate development.

The effect of financial leverage on earnings management is expected to vary systematically across corporate life-cycle stages due to differences in financial constraints, monitoring intensity, and operational stability. In the introduction phase, high uncertainty, limited track record, and severe financing constraints may weaken the monitoring effectiveness of debt, thereby increasing managerial discretion and reliance on earnings-based signalling strategies. In the decline phase, although financial distress increases incentives for earnings manipulation, heightened scrutiny from creditors and auditors may constrain opportunistic reporting, resulting in a mixed and potentially non-linear effect of leverage on earnings management. In contrast, during intermediate stages where firms operate under relatively stable conditions, leverage may operate more through standard debt contracting channels, resulting in a more stable relationship with reporting behaviour.

These arguments suggest that the relation between leverage and opportunistic financial reporting is contingent upon corporate development phases, driven by shifting financial constraints and monitoring intensities across stages. Consequently, this study departs from the assumption of a uniform leverage effect to examine how its impact on earnings management shifts across the corporate life cycle, focusing explicitly on the introduction and decline stages. Therefore, we formulate the following hypothesis:

H5. *The influence of leverage on earnings management is weaker or reversed in the phases of introduction and decline.*

3. Research Method

3.1. Sample and Data

The empirical analysis is conducted on a balanced panel of non-financial companies listed on the Vietnam Stock Exchange covering the 2012–2022 period. Financial institutions—banks, insurance companies, and other regulated intermediaries—are excluded because of the distinct characteristics of their accounting standards and regulatory frameworks, which may distort comparability with non-financial firms.

Corporate financial information is collected from audited annual reports and publicly accessible financial databases. To enhance data quality and ensure consistency in the empirical estimation, several screening procedures are implemented. First, observations with insufficient data required to estimate discretionary accruals are removed. Second, firm-year observations lacking complete cash flow information are excluded, as the classification of corporate development stages relies on net cash flow patterns related to operating, investing, and financing activities. Third, in order to reduce the impact of extreme values and potential data errors, all continuous variables are winsorised at the 1st and 99th percentiles. Finally, the final dataset comprises 3003 firm-year observations representing 273 listed firms.

The sample period ends in 2022 due to data availability and reporting consistency at the time of data collection. In addition, the exclusion of post-2022 observations ensures comparability across companies and avoids potential structural breaks associated with recent regulatory adjustments (e.g., tax regulations) and post-pandemic financial reporting changes in the Vietnamese market. This approach is consistent with prior studies using similar datasets in emerging markets.

3.2. Measurement of Earnings Management

While earnings management encompasses both accrual-based and real activities manipulation, this study focuses exclusively on the former. This aligns with the dom-

inant approach in the literature, where accrual-based models remain the primary proxy for reporting discretion due to their direct linkage with financial statement preparation (P. Dechow et al., 2010; Healy & Wahlen, 1999). Recent studies (Almand et al., 2023; Almeida & Kale, 2024; Can, 2020; Jaggi et al., 2022) continue to rely on these measures to examine governance and leverage incentives, ensuring cross-institutional comparability. Methodologically, accrual-based models allow consistent measurement using publicly available data. Conversely, real earnings management requires granular operational data, which often introduces measurement noise, particularly in emerging markets like Vietnam, where disclosure depth is still evolving. Given our objective—to examine how leverage interacts with corporate life cycles to shape accounting discretion—focusing on accrual-based metrics ensures conceptual alignment and empirical reliability. Ultimately, these measures provide a widely adopted and dependable proxy for capturing managerial intervention in reported earnings within transitional economies.

To operationally implement this approach, earnings management is proxied via discretionary accruals, derived from the standard empirical models established in prior literature. Specifically, total accruals (TAC) are computed as the difference between net income and net cash flows from operating activities. These total accruals are then decomposed using cross-sectional regression models to isolate the non-discretionary components. The resulting residuals capture discretionary accruals, representing managerial discretion after controlling for firm-specific economic fundamentals.

To enhance the robustness of the empirical findings and mitigate model-specific measurement biases, the study employs four widely used accrual-based models: the (Jones, 1991) model (AJ), the modified Jones model (P. M. Dechow et al., 1995) (DC), the performance-adjusted model (Kothari et al., 2005) (AK), and the cash-flow adjusted model (Kasznik, 1999) (KAZ). These models differ in their treatment of revenue adjustments, performance effects, and changes in operating cash flows, thereby capturing different dimensions of accrual estimation.

The modified Jones model (DC) is adopted as the primary specification due to its superior ability to control for revenue manipulation. Its widespread deployment in prior literature makes it the standard benchmark for detecting accrual-based earnings management in empirical accounting research. The model is specified in Equation (1) as follows:

$$TAC_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2\{(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}\} + \alpha_3(PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (1)$$

where TAC_{it} denotes total accruals of company i in year t , A_{it-1} is lagged total assets, ΔREV_{it} represents the change in revenues, ΔREC_{it} is the change in accounts receivable, and PPE_{it} denotes property, plant, and equipment.

The original Jones (1991) model (AJ) estimates non-discretionary accruals without adjusting for changes in receivables (Equation (2)):

$$TAC_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2(\Delta REV_{it}/A_{it-1}) + \alpha_3(PPE_{it}/A_{it-1}) + \varepsilon_{it} \quad (2)$$

The performance-adjusted model (AK) proposed by Kothari et al. (2005) enlarges the DC model by including return on assets (ROA) to control for firm performance effects on accruals (Equation (3)):

$$TAC_{it}/A_{it-1} = \alpha_0(1/A_{it-1}) + \alpha_1\{(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}\} + \alpha_2(PPE_{it}/A_{it-1}) + \alpha_3ROA_{it-1} + \varepsilon_{it} \quad (3)$$

The Kasznik (1999) model (KAZ) additionally adjusts for expected cash flow performance by incorporating changes in operating cash flows (Equation (4)):

$$TAC_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2\{(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}\} + \alpha_3(PPE_{it}/A_{it-1}) + \alpha_4(\Delta CFO_{it}/A_{it-1}) + \varepsilon_{it} \quad (4)$$

Across all specifications, the residual term (ε_{it}) indicates discretionary accruals (DA), which serve as the proxy for earnings management (EM) estimated by modified Jones (DC), Jones (AJ), Kothari et al. (AK), and Kasznik (KAZ) models. Following prior literature, the absolute value of DA is used in the main analysis to capture the magnitude of managerial reporting discretion, disregarding the direction.

While the modified Jones (DC) model serves as the primary measure in the main regressions, the alternative models are employed as substitute specifications to ensure that the findings are not driven by a specific accrual estimation approach. Consistent results across these models increase the reliability of the empirical evidence and reduce concerns regarding model-specific bias in discretionary accrual estimation.

3.3. Classification of Corporate Life-Cycle Phases

Phases of corporate development are identified following the net cash flow-based approach proposed by Dickinson (2011), which classifies company development phases based on the sign combinations of net cash flows from operating (CFO), investing (CFI), and financing (CFF) activities. This method provides an objective and widely applied proxy for firm development stages, as it reflects underlying economic activities rather than relying on managerial classification and has been widely adopted in recent empirical studies examining corporate life-cycle effects (Almand et al., 2023; Almeida & Kale, 2024; Can, 2020; Hussain et al., 2020).

Specifically, firms are assigned to different development stages according to the direction (positive or negative) of their net cash flows in a given year. These patterns capture dissimilarities in operating activities, investment intensity, and financing strategies throughout stages. For example, companies in the introductory phase typically exhibit negative operating net cash flows resulting from limited revenue generation, negative net cash flows of investment activities reflecting capital expenditures, and positive net cash flows from financing activities driven by external funding. Growth-stage companies generally generate positive operating net cash flows while continuing to invest heavily. Mature firms tend to exhibit stable operating net cash flows and reduced reliance on external financing, whereas declining firms often experience weakening operations and restructuring activities.

Relying on Dickinson (2011)'s framework, companies are categorised into five phases of development: introduction (CFO < 0, CFI < 0, CFF > 0), growth (CFO > 0, CFI < 0, CFF > 0), maturity (CFO > 0, CFI < 0, CFF < 0), decline (CFO < 0 combined with CFI > 0, regardless of CFF direction), and shake-out. The shake-out phase, which encompasses cash flow combinations that do not align with the core stages, represents an intermediate, transitional phase characterised by unstable net cash flows. Consequently, in line with prior studies (Almeida & Kale, 2024; Hussain et al., 2020), we construct dummy variables for the introduction, growth, maturity, and decline stages, leaving the shake-out phase as the omitted reference category in the regression models.

Although the Dickinson (2011) approach is widely used and provides an objective classification based on observable cash flow patterns, it is not without limitations. In particular, firms experiencing temporary shocks, unusual financing structures, or transitional operational conditions may be misclassified into inappropriate life-cycle phases. To mitigate this concern, the study further conducts robustness checks using an alternative reclassification scheme in the extended analysis, ensuring that the main results are not driven by potential misclassification of life-cycle stages.

3.4. Empirical Models

To investigate the relationship between corporate development stages and earnings management, and to assess whether the effect of leverage varies across stages, the study employs panel regression models with company and year fixed effects. This specification helps control for unobserved, time-invariant company characteristics as well as common macroeconomic shocks affecting all firms over time and reduces potential omitted variable bias arising from persistent firm heterogeneity.

The baseline model is specified in Equation (5) below:

$$EM_{it} = \beta_0 + \beta_1 INTRO_{it} + \beta_2 GROWTH_{it} + \beta_3 MATURITY_{it} + \beta_4 DECLINE_{it} + \beta_5 LEV_{it} + \gamma Controls_{it} + \delta_f + \delta_t + \varepsilon_{it} \quad (5)$$

To capture the conditional effect of leverage across life-cycle stages, the model is enlarged by incorporating interaction terms (Equation (6)):

$$EM_{it} = \beta_0 + \sum \beta_k Stages_{it} + \beta_5 LEV_{it} + \beta_6 (LEV_{it} \times INTRO_{it}) + \beta_7 (LEV_{it} \times DECLINE_{it}) + \gamma Controls_{it} + \delta_f + \delta_t + \varepsilon_{it} \quad (6)$$

where EM_{it} denotes earnings management (via DC, AJ, AK, and KAZ models), $Stage_{it}$ represents firm development phase dummies: *INTRO*, *GROWTH*, *MATURITY*, and *DECLINE*, and LEV_{it} is financial leverage.

The interaction specification focuses on the introduction and decline stages because these phases are theoretically associated with the highest degree of information asymmetry and financial distress, respectively. In the introduction stage, severe information friction and acute financing constraints weaken the disciplinary role of debt, while in the decline stage, simultaneous pressures from financial distress and intensified stakeholder monitoring may alter the conventional effects of leverage on managerial reporting incentives. In contrast, growth and maturity stages typically exhibit more stable operating environments where the leverage-reporting relationship operates more uniformly and is therefore captured within the baseline coefficient.

To isolate these effects, the model incorporates a comprehensive set of control variables standard in the earnings management literature (Cho & Chung, 2022; P. M. Dechow & Dichev, 2002; J. Guo et al., 2015; Jaggi et al., 2022; McNichols, 2000; Xie et al., 2003). These variables account for time-varying firm characteristics, financial conditions, and governance attributes that influence reporting behaviour, specifically capturing firm size, profitability, growth opportunities, audit quality, ownership concentration, and board characteristics.

A potential econometric concern is the endogeneity between financial leverage and earnings management, as financing choices and reporting behaviours may be jointly determined. To mitigate this concern, the research design incorporates several systematic controls. First, the corporate life-cycle variables are derived from firms' underlying cash-flow profiles and therefore reflect relatively persistent operational conditions rather than short-term reporting manipulation. Second, the empirical strategy utilises a bidirectional fixed-effects framework: firm fixed effects control for unobservable, time-invariant firm heterogeneity by capitalising on within-firm variation, while year fixed effects absorb common macroeconomic shocks. Third, the interaction framework isolates whether the impact of leverage varies across specific developmental phases, thereby shedding light on the conditional mechanisms rather than assuming a uniform effect. Nevertheless, fixed effects may not fully eliminate time-varying reverse causality. To ensure robustness against such simultaneity bias, alternative econometric specifications are conducted as sensitivity checks. Finally, standard errors are clustered at the firm level to account for potential within-firm serial correlation and heteroskedasticity, ensuring valid statistical inference in the panel structure.

Table 1 summarises the definitions and measurements of all variables incorporated in the empirical analysis.

Table 1. Definitions and measurements of variables.

Variable	Measurement
Dependent variable (EM)	
DC, AJ, AK, KAZ	Absolute discretionary accruals were estimated using alternative models proposed by P. M. Dechow et al. (1995), Jones (1991), Kothari et al. (2005), and Kasznik (1999), respectively
Independent variables (corporate life-cycle phases)	
INTRO	Dummy = 1 if firm is in the introduction phase, 0 otherwise
GROWTH	Dummy = 1 if firm is in the growth phase, 0 otherwise
MATURITY	Dummy = 1 if firm is in the maturity phase, 0 otherwise
DECLINE	Dummy = 1 if firm is in the decline phase, 0 otherwise
Independent variable (conditional)	
LEV	Total debt divided by total assets
Interaction variables	
LEV × INTRO	Interaction between the leverage and the introduction phase
LEV × DECLINE	Interaction between the leverage and the decline phase
Control variables	
SIZE	Natural logarithm of total assets
ROA	Net income divided by total assets
GREV	Year-over-year change in revenue
BIG4	Dummy = 1 if audited by BIG4, 0 otherwise
OC	Percentage of shares held by the three largest shareholders
OS	Percentage of state ownership
BSIZE	Number of board directors
BIND	Proportion of independent directors

Note: The shake-out phase is used as the reference category in the regression models.

4. Results

4.1. Descriptive Statistics

The descriptive statistics of the main variables are described in Table 2. The accrual-based earnings management measures exhibit comparable central tendencies across alternative specifications. The average values of DA are 0.0948 for DC, 0.0935 for AJ, 0.0898 for AK, and 0.0680 for KAZ. The relatively lower mean under the Kasznik specification suggests that incorporating cash flow adjustments may reduce the estimated magnitude of earnings manipulation. The magnitude of managerial reporting discretion is broadly comparable to prior evidence (P. M. Dechow et al., 1995; Hung, 2026; Kothari et al., 2005), suggesting that earnings management is pervasive but moderate on average across Vietnamese listed firms. Notably, the standard deviations reveal substantial dispersion across all specifications. This high degree of variation points to considerable heterogeneity in financial reporting practices, indicating that the observed differences in reporting discretion reflect economically meaningful cross-firm variations rather than purely statistical noise.

Table 2. Descriptive statistics of the studied variables.

Variables	Obs.	Mean	Std. Dev.	Min	Max
DC	3003	0.0948	0.1012	0.0012	0.5889
AJ	3003	0.0935	0.1003	0.0009	0.5871
AK	3003	0.0898	0.0951	0.0011	0.5297
KAZ	3003	0.0680	0.0690	0.0010	0.3722
INTRO	3003	0.1565	0.3634	0	1
GROWTH	3003	0.1482	0.3553	0	1
MATURITY	3003	0.3100	0.4626	0	1
SHAKE-OUT	3003	0.2714	0.4448	0	1
DECLINE	3003	0.1139	0.3177	0	1
SIZE	3003	27.60	1.444	24.64	31.51
ROA	3003	0.0548	0.0618	−0.1234	0.2571
BIG4	3003	0.2897	0.4537	0	1
GREV	3003	0.1310	0.5325	−0.756	3.347
OC	3003	0.5155	0.2121	0.0567	0.9432
OS	3003	0.2049	0.2549	0	0.7907
BSIZE	3003	5.505	1.241	3	9
BIND	3003	0.6732	0.1780	20	1

Regarding firm life-cycle distribution, approximately 15.7% of observations fall into the introduction phase, 14.8% into the growth phase, 31.0% into the maturity phase, 27.1% into the shake-out phase, and 11.4% into the decline phase. Firm life-cycle distribution shows that maturity and shake-out stages dominate the sample, while introduction and decline stages represent smaller proportions, consistent with emerging market corporate structure.

For firm-specific characteristics, the average leverage ratio (LEV) is 0.4996, indicating that Vietnamese listed firms rely significantly on debt financing, which provides a relevant setting for examining their interaction with reporting incentives. The mean company size (SIZE) is 27.60 with a standard deviation of 1.44, reflecting moderate variation across firms. Profitability (ROA) averages 5.48%, although the wide range—from negative to positive values—suggests notable differences in operating performance.

In terms of governance and ownership structure, approximately 28.97% of firm-year observations are audited by BIG4 firms. Ownership concentration (OC) is relatively high, with the largest shareholders holding, on average, over 51% of shares, while state ownership (OS) accounts for about 20.5% on average. Board characteristics show that firms have an average board size of approximately 5.5 members, with independent directors comprising around 67.3% of the board.

4.2. Correlation Analysis

The Pearson correlation matrix for the studied variables is presented in Table 3. In general, the pairwise correlations are of moderate magnitude, indicating that multicollinearity issues are unlikely to affect subsequent regression estimations. This is further confirmed by variance inflation factor (VIF) diagnostics (untabulated), which remain within acceptable thresholds (<10) (Hair et al., 2010).

Table 3. Pearson correlation matrix.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. DC	1																	
2. AJ	0.997 ***	1																
3. AK	0.944 ***	0.940 ***	1															
4. KAZ	0.638 ***	0.634 ***	0.573 ***	1														
5. INTRO	0.101 ***	0.096 ***	0.146 ***	0.048 ***	1													
6. GROWTH	−0.106 ***	−0.106 ***	−0.133 ***	−0.053 ***	−0.180 ***	1												
7. MATURITY	−0.044 **	−0.044 **	−0.051 ***	−0.052 ***	−0.289 ***	−0.280 ***	1											
8. SHAKEOUT	−0.006	−0.002	−0.033 *	0.008	−0.263 ***	−0.255 ***	−0.409 ***	1										
9. DECLINE	0.075 ***	0.076 ***	0.102 ***	0.068 ***	−0.154 ***	−0.150 ***	−0.240 ***	−0.219 ***	1									
10. LEV	0.016	0.012	0.016	−0.015	0.211 ***	0.064 ***	−0.116 ***	−0.098 ***	−0.006	1								
11. SIZE	−0.153 ***	−0.154 ***	−0.166 ***	−0.131 ***	0.131 ***	0.151 ***	0.015	−0.226 ***	−0.024	0.285 ***								
12. ROA	0.020	−0.025	−0.041 **	0.076 ***	−0.148 ***	−0.009	0.215 ***	−0.027	−0.115 ***	−0.045 **	−0.415 ***	1						
13. BIG4	−0.109 ***	−0.108 ***	−0.112 ***	−0.097 ***	0.014	0.042 **	0.058 ***	−0.122 ***	0.011	0.431 ***	0.004	0.086 ***	1					
14. GREV	0.084 ***	0.085 ***	0.087 ***	0.086 ***	0.049 ***	0.033 *	−0.057 ***	−0.017	0.014	0.081 ***	0.053 ***	0.056 ***	0.015	1				
15. OC	−0.055 ***	−0.057 **	−0.030	−0.065 ***	−0.052 ***	−0.051 ***	0.155 ***	−0.020	−0.082 ***	0.050 ***	−0.018	0.139 ***	0.133 ***	−0.061 **	1			
16. OS	−0.077 ***	−0.076 ***	−0.071 ***	−0.069 ***	−0.144 ***	−0.103 ***	0.178 ***	0.046 **	−0.078 ***	−0.113 ***	−0.039 **	0.087 ***	−0.038 **	−0.097 ***	0.416 ***	1		
17. BSIZE	−0.134 ***	−0.134 ***	−0.135 ***	−0.132 ***	−0.003	0.104 ***	0.037 *	−0.071 ***	−0.067 ***	0.369 ***	0.016	0.118 ***	0.117 ***	0.020	−0.025	−0.100 ***	1	
18. BIND	−0.007	−0.010	−0.006	−0.016	0.022	0.002	0.023	−0.054 ***	0.016	0.055 ***	−0.081 ***	−0.035 *	0.098 ***	−0.023	0.137 ***	−0.044 **	0.030	1

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

With respect to the dependent variable, the alternative measures of discretionary accruals (DC, AJ, and AK) are highly correlated with each other (correlation coefficients above 0.94), indicating strong consistency across accrual estimation models. The Kasznik measure (KAZ), while still positively correlated, exhibits comparatively lower coefficients, reflecting differences in model specification.

The matrix also indicates that earnings management proxies are positively correlated with leverage and the introduction and decline stages, while negatively correlated with the growth and maturity phases. Although these coefficients are relatively modest, their consistent signs across different accrual measures suggest economically meaningful relationships rather than spurious statistical associations. These preliminary patterns align with the anticipated non-linear dynamics and provide initial support for the baseline hypotheses.

Leverage displays a weak but positive correlation with earnings management, while its correlations with life-cycle stages vary across phases. Notably, leverage exhibits a positive association with the introduction stage but relates negatively to the maturity stage, suggesting that the financial structure differs systematically through the company life cycle. This variation provides initial motivation for examining the interaction between leverage and life-cycle stages in the regression analysis.

Among control variables, firm size exhibits negative correlations with all estimated discretionary accruals, while governance-related variables such as ownership concentration and board characteristics exhibit mixed associations. These patterns are broadly consistent with prior literature and reflect heterogeneity in monitoring mechanisms across firms (Hussain et al., 2020).

In general, the correlation results offer preliminary evidence supporting the hypothesised associations and justify the subsequent regression analysis incorporating both direct and interaction effects.

4.3. Baseline and Interaction Impact of Corporate Life Cycles and Leverage

The regression results displayed in Table 4 examine the associations between corporate life-cycle stages and accrual-based earnings manipulation, as well as the moderating role of leverage. The estimations include company and year fixed effects, with standard errors clustered at the company level to account for potential heteroskedasticity and serial correlation within enterprises over time. This approach increases the reliability of statistical inference in panel data settings. Model 1 presents the baseline specification using the modified Jones model (DC), while Model 2 enlarges Model 1 by incorporating interaction terms between leverage and selected life-cycle stages.

4.3.1. Baseline Results and Hypothesis Testing (H1–H4)

The baseline results in Model 1 indicate that earnings management evolves systematically throughout stages of the corporate life cycle. The coefficients on life-cycle stage dummies indicate a clear non-linear pattern of earnings management across corporate development phases.

First, the coefficient on the introduction stage is positive and statistically significant ($\beta = 0.0279$, $p < 0.01$), suggesting that firms in the early stage engage in higher levels of managerial reporting discretion compared to the reference (shake-out) stage. This result supports the first hypothesis, H1, confirming that early-stage firms face strong incentives to signal favourable performance to external investors (Almand et al., 2023; Almeida & Kale, 2024; Hussain et al., 2020; Jaggi et al., 2022; Khuong et al., 2022; Krishnan et al., 2021).

Table 4. Regression results with baseline and interaction models.

Variables	Model 1 (Baseline Model)	Model 2 (Interaction Model)
	DC	DC
INTRO	0.0279 *** (0.0069)	0.0799 *** (0.0265)
GROWTH	−0.0177 *** (0.0054)	−0.0195 *** (0.0054)
MATURITY	0.0008 (0.0050)	0.0004 (0.0049)
DECLINE	0.0232 *** (0.0079)	0.0774 *** (0.0192)
LEV	0.0386 *** (0.0127)	0.0673 *** (0.0129)
LEV × INTRO		−0.092 ** (0.0417)
LEV × DECLINE		−0.111 *** (0.0354)
SIZE	−0.0104 *** (0.0022)	−0.0111 *** (0.0022)
ROA	0.145 *** (0.0508)	0.161 *** (0.051)
BIG4	−0.0094 * (0.0053)	−0.0072 (0.0053)
GREV	0.0144 *** (0.0047)	0.0146 *** (0.0047)
OC	−0.0129 (0.0137)	−0.0114 (0.0137)
OS	−0.0321 *** (0.0102)	−0.0328 *** (0.0102)
BSIZE	−0.0067 *** (0.0020)	−0.0066 *** (0.0020)
BIND	0.0059 (0.0130)	0.0050 (0.0130)
_cons	0.392 *** (0.0621)	0.398 *** (0.0621)
Firm fixed effect	Included	Included
Year fixed effect	Included	Included
Observations	3003	3003
Adj. R-sq	0.072	0.080

Notes: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Second, companies in the decline phase also display significantly higher earnings management ($\beta = 0.0232, p < 0.01$), supporting the fourth hypothesis, H4. This finding indicates that managers in declining firms may attempt to conceal deteriorating performance via opportunistic reporting behaviour. This result is aligned with prior research (Almeida & Kale, 2024; Hussain et al., 2020; Jaggi et al., 2022; Khuong et al., 2022; Ribeiro et al., 2024; da Silva et al., 2025) that asserted a positive association between the decline phase and earnings manipulation practices.

In contrast, the growth phase is associated with significantly lower earnings management ($\beta = -0.0177, p < 0.01$), giving support to H2. This finding suggests that firms experiencing improving operating conditions may rely less on opportunistic reporting, consistent with the results asserted by (Almeida & Kale, 2024; Hasan & Cheung, 2018; Hussain et al., 2020; Ribeiro et al., 2024).

For the maturity stage, the coefficient is statistically insignificant, suggesting no meaningful difference from the shake-out stage. Therefore, H3 is not supported, suggesting that mature firms do not exhibit systematically higher earnings management compared to those in the benchmark phase. This finding is incompatible with previous conclusions (Almeida & Kale, 2024; Roma et al., 2021) that reported a higher quality of accruals of firms in the maturity stage.

Beyond statistical significance, the magnitude of the coefficients suggests economically meaningful variations in reporting behaviour across corporate developmental phases. In particular, the coefficient differentials between firms in the introduction or decline stages and those in the shake-out reference category imply a pronounced increase in discretionary accrual intensity, confirming that early- and decline-stage firms engage in materially higher levels of earnings manipulation.

Similarly, the reduction in discretionary accruals during the growth stage, alongside the statistically insignificant difference observed during the maturity phase, reflects a substantial improvement in reporting quality as firms stabilise operationally and encounter more stringent monitoring environments.

With respect to leverage, the positive and significant coefficient ($\beta = 0.0386, p < 0.01$) indicates that, on average, companies with higher debt levels tend to participate in greater earnings management practices, consistent with debt-related incentives (DeFond & Jiambalvo, 1994; Ghose et al., 2025; Jaggi & Lee, 2002).

4.3.2. Interaction Effects and Hypothesis Testing (H5)

Model 2 introduces interaction terms between leverage and the introduction and decline phases to investigate whether the effect of leverage differs throughout the firm life cycle.

The coefficient of leverage remains positive and statistically significant ($\beta = 0.0673, p < 0.01$), indicating that for companies in the reference (shake-out) phase, higher leverage corresponds to a greater extent of earnings management.

However, the interaction terms for both the introduction and decline phases are negative and statistically significant ($\beta = -0.092, p < 0.05$ for $LEV \times INTRO$; $\beta = -0.111, p < 0.01$ for $LEV \times DECLINE$). These results indicate that the impact of leverage on earnings manipulation is conditional upon the corporate life-cycle phases.

Specifically, the marginal effect of leverage in the early stage is reduced relative to the baseline and becomes negative when the interaction term outweighs the main effect. A similar relationship is recognised in the decline stage, where the overall effect of leverage is substantially weaker than in the reference group. This suggests that while leverage generally increases earnings management, its influence is attenuated—or even reversed—in extreme life-cycle stages.

The empirical evidence indicates that the economic impact of leverage on reporting behaviour is not uniform but varies materially across corporate development phases. In early-stage firms, debt does not translate into higher levels of earnings manipulation as pronouncedly as in benchmark firms, possibly due to financing constraints and monitoring frictions. Conversely, in declining firms, creditor scrutiny appears to countervail incentives for opportunistic reporting, thereby diminishing the net effect of leverage.

Beyond statistical significance, the findings also have practical significance for financial reporting assessment in emerging markets. The results consistently indicate that firms in the introduction and decline stages exhibit higher earnings-management tendencies, while the influence of leverage varies substantially across life-cycle stages. These patterns suggest that managerial reporting incentives are not uniform across firms and that identical leverage levels may carry different implications for earnings quality depending on firms' developmental conditions. From a regulatory, auditing, and investment perspective, the results therefore provide useful information for identifying firms with elevated reporting risk and for improving the effectiveness of monitoring and decision-making processes.

These findings provide support for H5, confirming that the association between leverage and earnings manipulation practices is non-uniform but differs systematically across stages of the corporate life cycle, particularly at the extremes.

In general, the empirical evidence supports H1, H2, H4, and H5, while H3 is not supported. The results highlight a non-linear association between corporate life-cycle phases and accrual-based earnings manipulation, as well as a conditional role of leverage in shaping managerial reporting behaviour.

4.4. Robustness Tests: Alternative Accrual Measures and Life-Cycle Reclassification

To further assess the stability of the empirical findings, additional robustness tests are conducted along two dimensions: (i) alternative measures of accrual-based earnings management (AJ, AK, and KAZ) and (ii) an alternative classification of firm life-cycle stages (EARLY, MIDDLE, and END).

First, the analysis is re-estimated using three alternative accrual models, including the AJ, the AK, and the KAZ. As seen from Table 5, across these specifications, the main regression results remain qualitatively unchanged. In particular, the introduction and decline phases continue to display positive and statistically significant associations with discretionary accruals, while the growth or intermediate stage shows weaker or insignificant effects. The consistency of results across multiple accrual models strengthens the validity of the findings by reducing concerns that the results are sensitive to measurement choice. This triangulation provides strong evidence that the observed relationships between corporate life-cycle stages, leverage, and earnings management are structurally robust rather than model-specific.

Second, to address potential concerns regarding the granularity of the life-cycle classification, firms are reclassified into three broader stages: EARLY (Introduction), MIDDLE (Growth and Maturity), and END (Decline). The findings, described in Table 6, remain highly consistent with discoveries obtained under the original specification. Specifically, firms in the EARLY and END stages continue to display significantly higher levels of discretionary accruals across all accrual measures, whereas the MIDDLE stage remains statistically indistinguishable from the reference category. This evidence reinforces the view that earnings management is concentrated in the extreme phases of the firm life cycle.

Table 5. Regression results with alternative accrual measures and interaction effects of life cycle and leverage.

Variables	Alternative Accrual Measures (Baseline Models)			Interaction Effects of Life Cycle and Leverage (Interaction Models)		
	AJ	AK	KAZ	AJ	AK	KAZ
INTRO	0.0262 *** (0.0068)	0.0424 *** (0.0062)	0.0098 ** (0.0050)	0.0831 *** (0.0259)	0.0654 *** (0.0231)	0.0444 *** (0.0161)
GROWTH	−0.0181 *** (0.0053)	−0.0175 *** (0.0054)	−0.0053 (0.0045)	−0.020 *** (0.0054)	−0.0184 *** (0.0054)	−0.0067 (0.0045)
MATURITY	0.0001 (0.0049)	0.0033 (0.0047)	−0.0035 (0.0037)	−0.0004 (0.0050)	0.0030 (0.0047)	−0.0038 (0.0037)
DECLINE	(0.0229 *** (0.0078)	0.0353 *** (0.0069)	0.0134 ** (0.0058)	0.078 *** (0.0192)	0.0654 *** (0.0164)	0.0585 *** (0.0138)
LEV	0.0376 *** (0.0126)	0.0395 *** (0.0126)	0.021 ** (0.0097)	0.0677 *** (0.0130)	0.0541 *** (0.0129)	0.0430 *** (0.0101)
LEV × INTRO				−0.100 *** (0.0405)	−0.0409 (0.0372)	−0.0617 ** (0.0241)
LEV × DECLINE				−0.113 *** (0.0352)	−0.0615 *** (0.0304)	−0.0922 *** (0.0251)
SIZE	−0.0102 *** (0.0022)	−0.0110 *** (0.0021)	−0.0052 *** (0.0013)	−0.011 *** (0.0022)	−0.0114 *** (0.0021)	−0.0058 *** (0.0013)
ROA	0.152 *** (0.0507)	0.184 *** (0.0443)	0.160 *** (0.0403)	0.168 *** (0.0504)	0.192 *** (0.0443)	0.173 *** (0.0398)
BIG4	−0.0092 * (0.0053)	−0.0096 * (0.0050)	−0.0065 * (0.0037)	−0.0069 (0.0053)	−0.0085* (0.0050)	−0.0048 (0.0037)
GREV	0.0144 *** (0.0048)	0.0136 *** (0.0047)	0.0096 *** (0.0035)	0.0146 *** (0.0048)	0.0137 *** (0.0047)	0.0098 *** (0.0035)
OC	−0.0143 (0.0137)	−0.0001 (0.0126)	−0.0147 (0.0095)	−0.0126 (0.0136)	0.0005 (0.0127)	−0.0137 (0.0095)
OS	−0.0313 *** (0.0101)	−0.0309 *** (0.0098)	−0.0182 ** (0.0071)	−0.0321 *** (0.010)	−0.0313 *** (0.0098)	−0.0188 *** (0.0070)
BSIZE	−0.0067 *** (0.0020)	−0.0058 *** (0.0019)	−0.0057 *** (0.0014)	−0.0066 *** (0.0019)	−0.0057 *** (0.0018)	−0.0056 *** (0.0014)
BIND	0.0047 (0.0133)	0.0044 (0.0124)	0.0020 (0.0087)	0.0035 (0.0132)	0.0038 (0.0123)	0.0011 (0.0086)
_cons	0.388 *** (0.0626)	0.388 *** (0.0576)	0.233 *** (0.0357)	0.394 *** (0.0626)	0.390 *** (0.0574)	0.237 *** (0.0358)
Firm fixed effect	Included	Included	Included	Included	Included	Included
Year fixed effect	Included	Included	Included	Included	Included	Included
Observations	3003	3003	3003	3003	3003	3003
Adj. R-sq	0.072	0.101	0.059	0.081	0.103	0.069

Notes: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6. Regression results with alternative corporate life-cycle variables and interaction effects of life cycle and leverage.

Variables	Alternative Accrual Measures (Baseline Models)				Interaction Effects of Life Cycle and Leverage (Interaction Models)			
	DC	AJ	AK	KAZ	DC	AJ	AK	KAZ
EARLY	0.0288 *** (0.0069)	0.0271 *** (0.0067)	0.0435 *** (0.0062)	0.099 ** (0.0049)	0.0793 *** (0.0265)	0.0825 *** (0.0259)	0.0647 *** (0.0231)	0.0443 *** (0.0161)
MIDDLE	−0.0051 (0.0046)	−0.0057 (0.0045)	−0.0034 (0.0044)	−0.0041 (0.0035)	−0.0060 (0.0192)	−0.0067 (0.0192)	−0.0038 (0.0164)	−0.0047 (0.0138)
END	0.0237 *** (0.0078)	0.0233 *** (0.0078)	0.0358 *** (0.0069)	0.0135 ** (0.0058)	0.0763 *** (0.0192)	0.0769 *** (0.0192)	0.0641 *** (0.0164)	0.0584 *** (0.0138)
LEV	0.0368 *** (0.0126)	0.0359 *** (0.0125)	0.0375 *** (0.0125)	0.0208 ** (0.0097)	0.0645 *** (0.0128)	0.065 *** (0.0128)	0.0511 *** (0.0127)	0.0426 *** (0.0100)
LEV × EARLY					−0.0891 ** (0.0416)	−0.0975 * (0.0405)	−0.0379 (0.0371)	−0.0631 ** (0.024)
LEV × END					−0.108 *** (0.0354)	−0.110 *** (0.0352)	−0.0579 * (0.0304)	−0.0917 *** (0.0251)
SIZE	−0.0107 *** (0.0022)	−0.0106 *** (0.0022)	−0.0114 *** (0.0021)	−0.052 *** (0.0013)	−0.0115 *** (0.0022)	−0.0144 *** (0.0022)	−0.0118 *** (0.0021)	−0.0058 *** (0.0013)
ROA	0.151 *** (0.0507)	0.157 *** (0.0505)	0.190 *** (0.0441)	0.161 *** (0.0403)	0.167 *** (0.051)	0.174 *** (0.050)	0.198 *** (0.044)	0.173 *** (0.040)
BIG4	−0.0089 * (0.0054)	−0.0088 (0.0053)	−0.0091 * (0.0050)	−0.0065 * (0.0037)	−0.0068 (0.0053)	−0.0065 (0.0053)	−0.0080 (0.0050)	−0.0048 (0.0037)
GREV	0.0141 *** (0.0047)	0.0141 *** (0.0048)	0.0133 *** (0.0046)	0.0096 *** (0.0035)	0.0143 *** (0.0047)	0.0143 *** (0.0048)	0.0133 *** (0.0046)	0.0097 *** (0.0035)
OC	−0.0121 (0.0138)	−0.0135 (0.0138)	0.0008 (0.0127)	−0.0146 (0.0094)	−0.0118 (0.0102)	−0.0106 (0.01)	0.0014 (0.0098)	−0.0136 (0.007)
OS	−0.0286 *** (0.0103)	−0.0280 *** (0.0101)	−0.0271 *** (0.0099)	−0.0179 ** (0.0071)	−0.0291 *** (0.0102)	−0.0285 *** (0.0100)	−0.0273 *** (0.0098)	−0.0183 *** (0.0070)
BSIZE	−0.0068 *** (0.0020)	−0.0067 *** (0.0020)	−0.0059 *** (0.0018)	−0.0057 *** (0.0014)	−0.0067 *** (0.0020)	−0.0067 *** (0.0019)	−0.0058 *** (0.0018)	−0.0057 *** (0.0014)
BIND	0.0057 (0.0130)	0.0045 (0.0133)	0.0042 (0.0123)	0.0020 (0.0087)	0.0046 (0.0129)	0.0033 (0.0132)	0.0040 (0.0123)	0.0011 (0.0086)
_cons	0.402 *** (0.0622)	0.398 *** (0.0626)	0.399 *** (0.0577)	0.234 *** (0.0354)	0.408 *** (0.0623)	0.404 *** (0.0627)	0.402 *** (0.0576)	0.239 *** (0.0355)
Firm fixed effect	Included	Included	Included	Included	Included	Included	Included	Included
Year fixed effect	Included	Included	Included	Included	Included	Included	Included	Included
Observations	3003	3003	3003	3003	3003	3003	3003	3003
Adj. R-sq	0.070	0.069	0.097	0.059	0.076	0.077	0.098	0.069

Notes: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Notably, the interaction effects between leverage and corporate life-cycle phases are also preserved under both alternative accrual measures and the reclassified life-cycle structure. The coefficient of leverage stays positive and statistically significant across specifications, while the interaction terms for $LEV \times INTRO$, $LEV \times DECLINE$ (see Table 5), $LEV \times EARLY$, and $LEV \times END$ (see Table 6) consistently exhibit negative signs and are statistically significant in most models. These findings evidence that the positive relationship between leverage and earnings management is systematically attenuated in extreme life-cycle stages, corroborating the moderating role of leverage identified in the baseline analysis.

Although several variations in coefficient magnitudes and model fit are observed across specifications, the direction and statistical significance of the key variables remain largely stable. Supplementary analysis reveals that the results derived from alternative accrual models and life-cycle reclassifications provide robust and consistent support for the main conclusions of the study. Specifically, the empirical evidence consistently supports H1, H2, H4, and H5, whereas H3 remains unsupported, thereby reinforcing both the life-cycle effect and the conditional role of leverage in shaping earnings management behaviour.

This robustness effectively mitigates concerns regarding potential misclassification inherent in the Dickinson (2011) approach, thereby bolstering the stability of the empirical findings.

5. Conclusions, Implications, and Future Research

The study examines how accrual-based earnings management evolves across corporate life-cycle stages and whether the influence of leverage varies throughout the corporate development process in an emerging market setting. Using a panel of Vietnamese listed firms over the period 2012–2022, the findings provide robust evidence that earnings management is not a static reporting phenomenon but changes systematically as firms transition across different stages of development.

The results reveal a distinct non-linear pattern in managerial reporting behaviour. Relative to the benchmark stage, firms in the introduction and decline phases exhibit significantly higher levels of discretionary accruals, whereas firms in the growth phase engage in less earnings management. These findings suggest that managerial reporting incentives are closely tied to firms' underlying economic conditions, financing needs, and monitoring environments. Consequently, the quality of financial reporting should be understood within a dynamic life-cycle framework rather than assessed uniformly across firms.

More importantly, the study demonstrates that the effect of leverage on earnings management is conditional upon corporate life-cycle stages. Although leverage is generally associated with greater incentives to manipulate earnings, this relationship becomes significantly weaker—and in several specifications reverses direction—during the introduction and decline phases. This evidence indicates that debt financing does not exert a uniform influence on managerial reporting behaviour. Instead, its impact depends on the economic circumstances surrounding different stages of corporate development. By integrating life-cycle theory with debt-contracting and monitoring perspectives, the study contributes to the literature by showing that leverage functions as a contingent governance mechanism whose effectiveness varies across the corporate life cycle.

5.1. Implications

The findings offer critical insights for policymakers, regulators, auditors, and market participants in emerging economies.

For policymakers and regulators, the evidence reveals that financial reporting risk varies systematically across the corporate life cycle rather than being uniformly distributed. Consequently, supervisory frameworks should shift from one-size-fits-all practices toward a life-cycle-sensitive approach, focusing enforcement efforts on introduction- and decline-stage firms, which exhibit stronger incentives for earnings management.

For auditors, these insights underscore the need to integrate both life-cycle stages and capital structure into risk assessment procedures. Because introduction and decline stages amplify earnings management—and alter the traditional impact of leverage—conventional risk indicators may mislead. Auditors must therefore evaluate how financing conditions interact with life-cycle dynamics to accurately gauge material misstatement risks and tailor audit procedures.

For market participants—including investors, creditors, and analysts—the results demonstrate that leverage is not a standalone proxy for reporting risk; its informational value depends heavily on a firm's life-cycle stage. Evaluating leverage in isolation risks mispricing earnings quality, especially in emerging markets like Vietnam, characterised by high ownership concentration and evolving governance.

Broadly, this study challenges the assumption of uniform determinants in earnings management. It demonstrates that reporting incentives are shaped by the intersection of financial conditions and developmental stages, suggesting that incorporating life-cycle characteristics yields more precise regulatory, auditing, and investment assessments.

5.2. Limitations and Future Research

Despite its contributions, the paper has some limitations that open directions for future research.

First, the analysis focuses exclusively on accrual-based earnings management and does not explicitly consider real earnings management activities. Although accrual-based measures remain the dominant approach in the corporate life-cycle literature and are widely employed in prior studies examining earnings management across development stages, managers may simultaneously rely on real operating decisions to influence reported performance. Future research could jointly examine accrual-based and real earnings management to determine whether the substitution between these reporting strategies varies across corporate life-cycle phases.

Second, corporate life-cycle stages are identified using Dickinson (2011)'s cash-flow classification approach. While this method provides an objective and widely adopted measure of firm development, it may not fully capture complex transitional dynamics or temporary shocks affecting firms. Future studies may therefore combine cash-flow patterns with alternative indicators, such as firm age, sales growth, market-based measures, or composite indices, to improve the precision of life-cycle identification.

Third, the sample period ends in 2022 and therefore does not capture more recent developments in the Vietnamese capital market, including post-pandemic adjustments, evolving disclosure requirements, and changing corporate financing conditions. Although the selected period provides a sufficiently long horizon to examine life-cycle dynamics, future research could extend the sample to incorporate more recent observations and evaluate whether the documented relationships remain stable over time.

Fourth, the study is conducted within a single-country setting. While Vietnam represents a particularly relevant context because of its concentrated ownership structure, evolving governance framework, and transitional institutional environment, the extent to which the findings generalise to other emerging markets remains an open empirical question. Comparative studies across countries or regions may help distinguish between context-specific and universal life-cycle effects on earnings management.

Finally, although leverage is examined as a key moderating factor, other firm-specific and institutional characteristics may also interact with corporate life-cycle stages in shaping managerial reporting incentives. Future research may extend the current framework by incorporating corporate governance mechanisms, ownership structures, ESG practices, audit quality, or external monitoring channels to provide a more comprehensive understanding of earnings management throughout the corporate life cycle. Furthermore, as with most archival studies, the possibility of residual endogeneity arising from unobserved time-varying factors or reverse causality cannot be completely ruled out. Future studies may employ instrumental-variable approaches, dynamic panel estimators, or natural experimental settings to further strengthen causal inference. Additionally, robust inference could be enhanced by applying Driscoll–Kraay standard errors to address potential cross-sectional dependence.

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