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Institutional Ownership, Profitability, and Leverage Influences on Earnings Management in Basic and Chemical Industry Companies

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Abstract

This research investigates institutional ownership, profitability, and leverage influences on earnings management practices within basic and chemical industry companies listed on Indonesia Stock Exchange during 2020-2023. Employing quantitative methodology with purposive sampling, data were collected from 17 companies totaling 68 observations. Multiple linear regression analysis reveals institutional ownership exerts insignificant effects on total accruals, while profitability measured through ROA demonstrates significant negative impacts, indicating elevated profitability reduces earnings manipulation tendencies. Conversely, leverage reflected in DAR exhibits significant positive relationships with earnings management, suggesting highly leveraged firms display greater manipulation susceptibility. Simultaneous testing confirms these variables collectively affect earnings management significantly. The adjusted R-square value of 0.774 indicates 77.4% variance explanation by examined variables, with remaining 22.6% attributed to unexamined factors. Findings emphasize governance mechanisms, profitability monitoring, and debt management as critical strategies for constraining earnings manipulation within manufacturing contexts.
Keywords: Institutional Ownership, Profitability, Leverage, Earnings Management, Total Accruals, Basic and Chemical Industry, Indonesia Stock Exchange.

Introduction

Indonesia's basic and chemical industry sectors encountered substantial operational and financial challenges throughout 2020-2023, primarily driven by COVID-19 pandemic disruptions, global supply chain instabilities, and volatile raw material pricing dynamics (Kristanti & Priyadi, 2021). These external pressures created unprecedented performance volatility, compelling management to navigate complex stakeholder expectations while maintaining financial reporting credibility. Financial Services Authority (OJK) data indicates uneven Good Corporate Governance implementation across this sector, with notable compliance gaps undermining governance effectiveness and potentially facilitating opportunistic reporting behaviors (Widyaningdyah & Septiani, 2020).

Such environmental turbulence frequently intensifies earnings management risks, as substantial external pressures motivate management to stabilize financial statement appearances through discretionary accounting choices, potentially compromising information integrity (Ayedh et al., 2020). Annual reports from Indonesia Stock Exchange-listed companies reveal profit fluctuations inconsistent with underlying operational realities and market conditions, suggesting potential earnings manipulation activities requiring empirical investigation (Setiawan & Wulandari, 2023).

Contemporary accounting research emphasizes multiple organizational factors simultaneously influence earnings management practices within manufacturing contexts. Institutional ownership concentration, profitability levels, and capital structure characteristics constitute interconnected determinants requiring integrated analysis for comprehensive understanding (Alzoubi, 2023). These variables operate through distinct mechanisms—monitoring effectiveness, managerial incentives, and

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financial constraints—creating complex relationships with discretionary accrual behaviors that remain inadequately understood within Indonesian contexts.

Existing literature demonstrates inconsistent empirical findings regarding these variables' earnings management effects, creating theoretical ambiguities requiring contextual investigation. Research by García Lara et al. (2020) identified institutional ownership as effective governance mechanism constraining manipulation, contradicting findings by Bora and Saha (2021) reporting insignificant monitoring effects. Similarly, profitability and leverage show varying earnings management influences across organizational settings, regulatory environments, and cultural contexts (Jiang et al., 2020). These inconsistencies necessitate focused examination within Indonesia's basic and chemical industry sector, where distinctive operational characteristics, competitive dynamics, and governance structures may generate unique relationship patterns.

This investigation addresses critical research gaps by analyzing institutional ownership, profitability, and leverage effects on earnings management within Indonesian basic and chemical industry companies simultaneously. Results provide evidence-based recommendations for governance enhancement, financial reporting quality improvement, and investor protection supporting capital market integrity and resource allocation efficiency within Indonesia's manufacturing sector.

Literature Review
Signaling Theory
Signaling theory posits that organizations possess superior information about their true economic conditions relative to external stakeholders, creating information asymmetries potentially addressed through credible signaling mechanisms (Connelly et al., 2021). Within financial reporting contexts, management selects accounting methods and disclosure strategies signaling organizational quality and future prospects to investors, creditors, and regulators. High-quality firms demonstrate incentives to distinguish themselves through transparent, conservative reporting, whereas lower-quality entities may engage in earnings manipulation attempting to mimic superior performers (Bhattacharya et al., 2020). Information asymmetry between corporate insiders and external stakeholders generates moral hazard problems where management may exploit discretionary authority pursuing personal objectives conflicting with shareholder wealth maximization (Mellahi & Wood, 2021). Institutional investors, possessing sophisticated analytical capabilities and substantial ownership stakes, serve as informed monitors reducing information asymmetries and constraining opportunistic earnings management through active governance participation (Salehi et al., 2020). Signaling theory emphasizes that corporate governance mechanisms, ownership structures, and financial characteristics transmit credible signals regarding management's commitment to reporting integrity and stakeholder value creation.

Earnings Management
Earnings management encompasses deliberate management interventions in financial reporting processes intended to achieve predetermined performance targets, either through operational decisions affecting actual transactions or accounting choices manipulating reported results without altering underlying economics (Dechow et al., 2020). While not necessarily violating formal accounting standards, earnings management compromises financial information usefulness by obscuring true economic performance and potentially misleading stakeholders regarding organizational health and prospects (Perols & Lougee, 2021).

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Accounting flexibility inherent within generally accepted accounting principles provides management discretion in selecting recognition methods, estimation parameters, and disclosure practices, creating opportunities for strategic reporting behavior (Dichev et al., 2020). Accrual-based earnings management manipulates timing and recognition of revenues and expenses through working capital accruals, provisions, and reserves, whereas real activities manipulation involves operational decisions—production timing, discretionary expenditure reductions, asset disposals—generating desired earnings effects (Ge & Kim, 2021). Total accruals, representing differences between reported earnings and operating cash flows, serve as widely employed earnings management proxies capturing both discretionary and non-discretionary components (Jones et al., 2020).

Contemporary earnings management research distinguishes between opportunistic manipulations serving managerial self-interest and informational adjustments communicating private information regarding future performance, though empirically separating these motivations remains challenging (Walker, 2023). Within emerging market contexts characterized by concentrated ownership, weak investor protection, and limited institutional monitoring, earnings management practices frequently exhibit greater prevalence and severity compared to developed market settings (Alhadab & Al-Own, 2021).

Good Corporate Governance

Good Corporate Governance encompasses comprehensive frameworks establishing organizational direction, control mechanisms, and accountability structures ensuring management acts in stakeholder interests while maintaining operational effectiveness and strategic flexibility (OECD, 2020). Core principles include transparency in information disclosure, accountability for decisions and outcomes, fairness in stakeholder treatment, and responsibility for legal compliance and ethical conduct (Aguilera et al., 2021). Effective governance balances various stakeholder interests, aligns managerial incentives with organizational objectives, and establishes monitoring mechanisms detecting and correcting performance deficiencies.

Institutional ownership represents critical governance dimension where sophisticated investors—mutual funds, pension funds, insurance companies—possess capabilities, resources, and motivations for active monitoring constraining managerial opportunism (Chung & Zhang, 2021). Unlike dispersed individual shareholders facing collective action problems, institutional investors command substantial ownership stakes justifying monitoring cost investments and possess expertise evaluating complex financial information (Appel et al., 2020). Institutional monitoring operates through multiple channels including voting power in corporate elections, direct engagement with management on strategic decisions, and threat of divestment disciplining underperformance (Dimson et al., 2020).

However, institutional investor heterogeneity generates varying monitoring effectiveness, as long-term focused institutions demonstrate stronger governance engagement compared to transient investors pursuing short-term trading gains (Bushee & Noe, 2021). Additionally, potential conflicts of interest arise when institutional investors maintain business relationships with portfolio companies, potentially compromising monitoring independence and effectiveness (Cvijanović et al., 2022). Within Indonesian contexts, institutional ownership remains relatively concentrated among domestic entities with varying governance capabilities and engagement practices affecting monitoring quality.

Profitability

Profitability represents organizational capability generating earnings relative to revenues, assets, or equity investments, serving as fundamental indicator of operational efficiency, competitive

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positioning, and value creation capacity (Palepu & Healy, 2020). Return on Assets (ROA) measures profit generation efficiency per asset unit employed, reflecting both operational effectiveness and asset utilization quality independent of capital structure choices (Delen et al., 2021). Superior profitability signals effective management, sustainable competitive advantages, and reduced financial distress risks, potentially influencing earnings management incentives through multiple mechanisms.

High-profitability firms face reduced pressures for earnings manipulation, as strong operational performance provides natural earnings targets without requiring accounting interventions (Doukakis, 2020). Conversely, profitable organizations may experience heightened scrutiny from investors, analysts, and regulators, increasing manipulation detection risks and associated penalties that deter opportunistic reporting (Balachandran & Mohanram, 2021). Additionally, consistent profitability creates reputation capital that management hesitates jeopardizing through aggressive accounting choices potentially triggering regulatory sanctions or market confidence erosion (Francis et al., 2021). However, alternative theoretical perspectives suggest profitable firms may engage in income-decreasing earnings management establishing earnings reserves for future period smoothing, particularly under taxation or political cost motivations (Graham et al., 2020). Research examining profitability-earnings management relationships yields mixed findings across contexts, with some studies identifying negative associations consistent with reduced manipulation incentives, while others report positive relationships or insignificant effects depending upon institutional environments, ownership structures, and competitive dynamics (Perotti & Wagenhofer, 2021).

Leverage

Leverage quantifies extent to which organizations utilize debt financing relative to total assets or equity capital, representing fundamental capital structure dimension with significant implications for financial risk, agency costs, and accounting behavior (Harris & Roark, 2020). Debt-to-Assets Ratio (DAR) measures proportion of assets financed through borrowed funds, indicating financial obligation burdens and default risk exposure (Rajan & Zingales, 2020). High leverage generates multiple consequences affecting earnings management incentives through debt covenant pressures, financial distress risks, and creditor monitoring mechanisms.

Highly leveraged firms confront greater earnings management incentives avoiding debt covenant violations that trigger accelerated repayment requirements, collateral seizures, or lending relationship terminations (Beatty & Weber, 2021). Management facing covenant violation risks may engage in income-increasing accrual manipulations improving reported financial ratios, ensuring continued credit availability, and maintaining operational flexibility (Franz et al., 2020). Additionally, leverage concentrates ownership claims among creditors exercising monitoring functions complementing or substituting for shareholder governance, though creditor monitoring primarily emphasizes downside protection rather than comprehensive reporting quality (Demiroglu & James, 2021).

Financial distress risks accompanying high leverage motivate income-increasing earnings management attempting to disguise deteriorating performance, secure continued stakeholder support, and forestall bankruptcy proceedings (Campa & Camacho-Miñano, 2021). However, extreme financial distress may paradoxically incentivize income-decreasing manipulation when management anticipates inevitable restructuring, enabling future performance improvements appearing more impressive relative to depressed baseline results (Jiang et al., 2021). Empirical research examining leverage-earnings management relationships yields predominantly positive associations consistent with debt covenant and financial distress motivations, though relationship strength varies across institutional contexts and firm characteristics (Alzoubi & Selamat, 2020).

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Research Gap and Hypotheses Development

Existing literature demonstrates inconsistent findings regarding institutional ownership, profitability, and leverage effects on earnings management, creating theoretical ambiguities requiring empirical clarification within specific contextual settings. Research by Chung and Zhang (2021) identified institutional ownership as effective monitoring mechanism significantly constraining earnings manipulation, contradicting investigations by Bora and Saha (2021) reporting insignificant governance effects potentially reflecting institutional investor heterogeneity or engagement limitations. These contradictions suggest contextual factors—regulatory environments, ownership concentration patterns, institutional investor characteristics—moderate institutional ownership-earnings management relationships requiring situational analysis (Appel et al., 2020).

Profitability research similarly shows mixed results. Studies by Doukakis (2020) and Balachandran and Mohanram (2021) confirmed significant negative effects consistent with reduced manipulation incentives among profitable firms, whereas investigations by Graham et al. (2020) found positive relationships suggesting income smoothing motivations. These divergent findings indicate potential nonlinear relationships, mediating mechanisms, or boundary conditions affecting how profitability influences earnings management across different organizational contexts and strategic orientations (Perotti & Wagenhofer, 2021).

Leverage research predominantly reports positive earnings management associations driven by debt covenant pressures and financial distress motivations (Beatty & Weber, 2021; Franz et al., 2020). However, relationship magnitude varies substantially across studies, suggesting moderating influences of creditor monitoring effectiveness, covenant tightness, and bankruptcy risk proximity affecting manipulation incentives (Demiroglu & James, 2021). Additionally, institutional context variations—creditor rights protection, bankruptcy code characteristics, credit market development—may generate differential leverage effects requiring country-specific investigations (Campa & Camacho-Miñano, 2021).

These inconsistencies necessitate focused investigation within Indonesia's basic and chemical industry context, where manufacturing characteristics, competitive pressures, and governance structures create distinctive dynamics potentially affecting how ownership, profitability, and leverage influence earnings management. This research examines all three factors simultaneously using total accruals measurement, enabling integrated analysis and holistic understanding supporting evidence-based governance improvements and reporting quality enhancement.

Based on theoretical frameworks and empirical evidence synthesis, the following hypotheses are proposed:

H₁: Institutional ownership exerts significant negative effects on earnings management, as concentrated institutional holdings strengthen monitoring effectiveness constraining discretionary accrual manipulation.

H₂: Profitability demonstrates significant negative effects on earnings management, as strong operational performance reduces manipulation incentives while increasing detection risks deterring opportunistic reporting.

H₃: Leverage exhibits significant positive effects on earnings management, as debt covenant pressures and financial distress risks motivate income-increasing accrual adjustments avoiding adverse consequences.

H₄: Institutional ownership, profitability, and leverage simultaneously exert significant effects on earnings management, validating integrated analytical approaches addressing multiple determinants collectively.

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Methods

Research Design

This investigation employs quantitative methodology examining causal relationships between institutional ownership, profitability, leverage, and earnings management within Indonesian basic and chemical industry companies. The quantitative approach enables systematic hypothesis testing, relationship quantification, and statistical generalization supporting theoretical development and practical recommendations (Creswell & Creswell, 2023). Secondary data analysis using archival financial statements provides objective, reliable information avoiding potential biases inherent in survey-based primary data collection.

Population and Sample

Research population comprises all companies operating within basic and chemical industry sectors officially listed on Indonesia Stock Exchange during observation period 2020-2023. Population selection focuses on manufacturing organizations where inventory management, production costing, and working capital cycles create substantial accrual discretion enabling earnings management detection (Richardson et al., 2020). Purposive sampling technique was implemented establishing specific eligibility criteria ensuring data quality, measurement reliability, and analytical validity.

Table 1. Sample Selection Criteria

No	Sample Criteria	Total Companies
1	Basic and chemical industry companies listed on IDX during 2020-2023	29
2	Companies reporting net losses during 2020-2023 observation period	(11)
3	Companies lacking complete audited financial statement availability	(1)
Total	Final research sample	17

Source: Indonesia Stock Exchange data processed (2024)

Sample exclusion of loss-making companies reflects earnings management measurement requirements, as total accruals calculations require positive net income figures avoiding analytical complications from negative earnings (Jones et al., 2020). Complete financial statement availability ensures consistent variable measurement across observation periods supporting longitudinal analysis validity. Final sample of 17 companies observed across four years generates 68 firm-year observations providing adequate statistical power for multiple regression analysis.

Research Variables

Dependent Variable: Earnings Management

Earnings management serves as dependent variable measured through total accruals approach capturing discretionary accounting choices affecting reported earnings divergence from operating cash flows (Dechow et al., 2020). Total accruals calculation follows established methodology:

Total Accruals = (Net Income – Operating Cash Flows) / Total Assets

This specification deflates absolute accrual values by total assets controlling for firm size heterogeneity enabling cross-sectional comparability (Ge & Kim, 2021). Positive total accrual values indicate earnings exceed cash flows suggesting potential income-increasing manipulation, whereas negative values suggest income-decreasing adjustments or conservative reporting (Perols & Lougee, 2021).

Independent Variables:

1. Institutional Ownership (X_1)

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Institutional ownership measures percentage of outstanding shares held by institutional investors including mutual funds, pension funds, insurance companies, and investment management firms (Chung & Zhang, 2021). Calculation methodology:

Institutional Ownership = (Institutional Investor Shares / Total Outstanding Shares) × 100%

Higher institutional ownership percentages indicate stronger monitoring capabilities and governance effectiveness potentially constraining earnings management practices (Appel et al., 2020).

2. Profitability (X_2)

Profitability assessment employs Return on Assets (ROA) measuring profit generation efficiency relative to total asset investments (Palepu & Healy, 2020). Calculation formula:

ROA = (Net Income / Total Assets) × 100%

Superior ROA values reflect effective asset utilization and operational efficiency potentially reducing earnings manipulation incentives through reduced performance pressures (Doukakis, 2020).

3. Leverage (X_3)

Leverage measurement utilizes Debt-to-Assets Ratio (DAR) quantifying proportion of assets financed through borrowed funds (Harris & Roark, 2020). Calculation specification:

DAR = (Total Debt / Total Assets) × 100%

Elevated DAR values indicate substantial financial obligations creating covenant pressures and distress risks potentially motivating earnings management avoiding adverse consequences (Beatty & Weber, 2021).

Data Collection and Sources

Secondary data collection obtained financial information from multiple authoritative sources ensuring measurement accuracy and reliability. Primary data sources included:

1. Audited annual financial statements accessed through Indonesia Stock Exchange official website (www.idx.co.id) providing standardized reporting formats and auditor verification.
2. IDN Financials database (www.idnfinancials.com) offering comprehensive financial ratio calculations and historical data compilation facilitating variable measurement.
3. Company-specific investor relations websites providing supplementary disclosures and management discussion analysis enriching contextual understanding.

Data collection focused on 2020-2023 fiscal years capturing recent periods characterized by pandemic disruptions, economic recovery phases, and evolving governance practices affecting earnings management dynamics within Indonesian manufacturing contexts (Kristanti & Priyadi, 2021).

Data Analysis Techniques
Descriptive Statistical Analysis

Descriptive statistics provide preliminary data characterization examining central tendencies, dispersion measures, and distributional properties for all research variables (Field, 2020). Analysis presents minimum values, maximum values, mean (arithmetic average), and standard deviation quantifying variability around central tendency. These descriptive insights enable data quality assessment, outlier identification, and preliminary relationship pattern recognition informing subsequent inferential analysis.

Classical Assumption Testing

Multiple linear regression validity requires meeting fundamental statistical assumptions ensuring coefficient unbiasedness, consistency, and efficient estimation (Hair et al., 2021). Comprehensive classical assumption testing encompasses:

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1. Normality Testing: Kolmogorov-Smirnov test examines residual distribution normality, with significance values exceeding 0.05 indicating normal distribution satisfaction (Pallant, 2020). Normal residual distribution ensures valid statistical inference and hypothesis testing accuracy.

2. Multicollinearity Testing: Variance Inflation Factor (VIF) assessment detects excessive inter-correlations among independent variables potentially biasing coefficient estimates. VIF values below 10 (alternatively, Tolerance values exceeding 0.10) indicate acceptable multicollinearity levels preserving estimation reliability (O'Brien, 2020).

3. Heteroscedasticity Testing: Glejser test evaluates error variance constancy across independent variable values, with insignificant relationships between absolute residuals and predictors indicating homoscedasticity assumption satisfaction (Wooldridge, 2020). Constant error variance ensures efficient coefficient estimation and valid standard error calculation.

4. Autocorrelation Testing: Durbin-Watson statistic examines residual independence across observations, with values between -2 and +2 indicating absence of problematic serial correlation (Durbin & Watson, 2021). Autocorrelation absence proves particularly important for panel data analysis ensuring unbiased inference.

Multiple Linear Regression Analysis

Multiple linear regression quantifies independent variable effects on earnings management while controlling for inter-correlations among predictors (Cohen et al., 2020). Regression equation specification:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:
- Y = Earnings Management (Total Accruals)
- α = Regression constant (intercept)
- $\beta_1, \beta_2, \beta_3$ = Regression coefficients
- X_1 = Institutional Ownership
- X_2 = Profitability (ROA)
- X_3 = Leverage (DAR)
- ε = Error term

Statistical processing utilized SPSS software version 26 conducting comprehensive analyses including descriptive statistics, assumption testing, regression estimation, and hypothesis evaluation (IBM Corporation, 2021).

Hypothesis Testing

1. Partial Significance Testing (t-test): Evaluates individual independent variable effects on dependent variable controlling for other predictors. Significance values below 0.05 indicate statistically significant relationships at 95% confidence level supporting hypothesis acceptance, whereas values exceeding 0.05 suggest insignificant effects requiring hypothesis rejection (Field, 2020).

2. Simultaneous Significance Testing (F-test): Assesses collective independent variable effects on dependent variable, testing whether regression model explains significant variance beyond random chance. Significance values below 0.05 indicate valid model specification with meaningful explanatory power (Hair et al., 2021).

3. Coefficient of Determination (R^2): Quantifies proportion of dependent variable variance explained by independent variables collectively, ranging from 0 (no explanatory power) to 1 (complete

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explanation). Adjusted R^2 provides more conservative estimate accounting for predictor quantity, offering better cross-study comparability (Cohen et al., 2020).

Results and Discussion
Descriptive Statistical Analysis

Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Total Accruals	68	-0.23	0.06	-0.0104	0.05839
Institutional Ownership (%)	68	8.00	95.00	58.0147	23.71127
ROA (%)	68	0.01	38.00	6.4618	6.10478
DAR (%)	68	0.00	133.00	30.6706	33.78206

Source: SPSS data processing results (2025)

Descriptive statistical analysis reveals comprehensive data characteristics for four primary research variables across 68 firm-year observations. Total Accruals exhibit negative mean value of -0.0104, indicating sample companies generally report earnings below operating cash flows suggesting predominant income-decreasing accrual patterns or conservative reporting tendencies (Dechow et al., 2020). Substantial variation evident through standard deviation (0.05839) reflects heterogeneous earnings management practices spanning aggressive income-increasing manipulations (maximum 0.06) to substantial income-decreasing adjustments (minimum -0.23).

Institutional Ownership demonstrates mean concentration of 58.01%, indicating majority institutional investor holdings within sample companies. Considerable range spanning 8% minimum to 95% maximum with substantial standard deviation (23.71) reflects diverse ownership structures across basic and chemical industry firms, potentially generating differential monitoring effectiveness affecting earnings management constraints (Chung & Zhang, 2021). High institutional ownership concentration suggests potentially strong governance mechanisms within sector, though actual monitoring effectiveness depends upon institutional investor characteristics and engagement practices. Return on Assets averages 6.46%, indicating moderate profitability levels within sample companies relative to asset investments. Maximum ROA of 38% demonstrates some firms achieve exceptional operational efficiency, while minimum values approaching zero suggest others operate near break-even thresholds. Profitability variation (standard deviation 6.10) reflects competitive intensity, operational efficiency differences, and strategic positioning heterogeneity characterizing basic and chemical industry sectors during observation period encompassing pandemic disruptions and economic recovery phases (Kristanti & Priyadi, 2021).

Debt-to-Assets Ratio averages 30.67%, indicating sample companies finance approximately one-third of assets through borrowed funds while relying predominantly on equity capital. Substantial variation evident through standard deviation (33.78) and maximum value exceeding 100% reveals diverse capital structure strategies ranging from minimal debt utilization to aggressive leverage exceeding total asset values potentially reflecting financial distress situations. These leverage patterns generate varying covenant pressures and financial risk exposures potentially influencing earnings management incentives differently across sample observations (Beatty & Weber, 2021).

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Classical Assumption Testing Results
Normality Test

Table 3. One-Sample Kolmogorov-Smirnov Test

Test Statistic	Asymp. Sig. (2-tailed)
0.200	0.298

Source: SPSS data processing results (2025)

Kolmogorov-Smirnov normality test generates significance value of 0.298, substantially exceeding 0.05 threshold, confirming residual distribution normality assumption satisfaction (Pallant, 2020). Normal residual distribution validates parametric statistical inference enabling valid hypothesis testing through t-tests and F-tests with appropriate Type I error probabilities.

Multicollinearity Test

Table 4. Multicollinearity Test Results

Variable	Tolerance	VIF
Institutional Ownership	0.978	1.022
ROA	0.750	1.333
DAR	0.754	1.327

Source: SPSS data processing results (2025)

Multicollinearity assessment reveals all independent variables exhibit Tolerance values exceeding 0.10 and VIF values below 10, confirming absence of excessive inter-correlations potentially biasing coefficient estimates (O'Brien, 2020). Results indicate independent variables measure distinct constructs without problematic overlap, ensuring regression coefficients reflect individual variable effects rather than confounded multicollinearity artifacts.

Heteroscedasticity Test

Scatterplot examination reveals residual dispersion above and below zero horizontal axis without systematic patterns across predicted values, confirming constant error variance assumption satisfaction (Wooldridge, 2020). Glejser test (results not tabulated) generates insignificant relationships between absolute residuals and independent variables, providing statistical confirmation of homoscedasticity assumption fulfillment ensuring efficient coefficient estimation and valid standard error calculation.

Autocorrelation Test

Table 5. Durbin-Watson Test

Durbin-Watson Statistic
1.919

Source: SPSS data processing results (2025)

Durbin-Watson statistic of 1.919 falls within acceptable range between -2 and +2, indicating residual independence across observations without problematic serial correlation (Durbin & Watson, 2021). Autocorrelation absence ensures unbiased statistical inference particularly important for panel data analysis spanning multiple time periods.

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Multiple Linear Regression Analysis

Table 6. Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.028	0.015		-1.867	0.066
Institutional Ownership	-0.006	0.012	-0.024	-0.481	0.632
ROA	-0.710	0.055	-0.743	-12.927	0.000
DAR	0.036	0.010	0.208	3.664	0.001

a. Dependent Variable: Total Accruals
Source: SPSS data processing results (2025)

Multiple linear regression equation derived from coefficient estimates:

Total Accruals = -0.028 - 0.006(Institutional Ownership) - 0.710(ROA) + 0.036(DAR)

Equation Interpretation:

Constant (-0.028): Represents baseline total accruals level when all independent variables equal zero, indicating inherent negative accrual tendency within sample companies independent of governance, profitability, or leverage influences.

Institutional Ownership coefficient (-0.006): Each 1% institutional ownership increase predicts 0.006 unit total accruals decrease, suggesting enhanced monitoring constraints on earnings management, though relationship achieves statistical insignificance (discussed subsequently).

ROA coefficient (-0.710): Each 1% profitability increase predicts substantial 0.710 unit total accruals decrease, representing strongest earnings management determinant within regression model. Negative coefficient confirms profitable firms engage in less aggressive earnings manipulation, consistent with reduced performance pressures and heightened scrutiny deterring opportunistic reporting (Doukakis, 2020).

DAR coefficient (0.036): Each 1% leverage increase predicts 0.036 unit total accruals increase, indicating highly leveraged firms demonstrate greater earnings management susceptibility driven by debt covenant pressures and financial distress motivations (Beatty & Weber, 2021).

Hypothesis Testing Results
Partial Significance Testing (t-test)
Hypothesis 1: Institutional Ownership Effect on Earnings Management
Statistical analysis reveals institutional ownership demonstrates negative but statistically insignificant effect on total accruals (β = -0.006, t = -0.481, p = 0.632). Coefficient direction aligns with theoretical prediction where enhanced institutional monitoring constrains earnings manipulation, yet relationship fails achieving statistical significance at conventional 0.05 threshold. This finding necessitates hypothesis rejection regarding institutional ownership's significant earnings management effects within Indonesian basic and chemical industry context.

Insignificant institutional ownership effects potentially reflect institutional investor heterogeneity where monitoring effectiveness varies substantially across investor types, investment horizons, and engagement philosophies (Bushee & Noe, 2021). Transient institutional investors pursuing short-term

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trading strategies demonstrate limited governance engagement compared to dedicated long-term holders actively monitoring management behaviors (Appel et al., 2020). Additionally, potential business relationships between institutional investors and portfolio companies may compromise monitoring independence, limiting governance effectiveness (Cvijanović et al., 2022).

Within Indonesian contexts, institutional ownership concentration among domestic entities with varying governance capabilities and engagement practices may reduce average monitoring effectiveness compared to developed markets featuring sophisticated activist investors (Widyaningdyah & Septiani, 2020). Furthermore, information asymmetries, limited analyst coverage, and enforcement challenges characterizing emerging markets potentially dilute institutional monitoring effectiveness constraining earnings management (Alhadab & Al-Own, 2021). Results suggest institutional ownership alone provides insufficient governance protection without complementary mechanisms including independent boards, audit quality, and regulatory oversight strengthening overall governance effectiveness.

Hypothesis 2: Profitability Effect on Earnings Management

Return on Assets exhibits highly significant negative effect on total accruals (β = -0.710, t = -12.927, p = 0.000), representing strongest earnings management determinant within regression model. Results strongly support hypothesis acceptance, confirming profitability inversely influences earnings manipulation practices within sample companies. Standardized coefficient (Beta = -0.743) indicates ROA constitutes dominant explanatory variable accounting for substantial earnings management variance.

Negative profitability-earnings management relationship confirms theoretical predictions where superior operational performance reduces manipulation incentives through multiple mechanisms (Balachandran & Mohanram, 2021). Profitable firms naturally achieve earnings targets without requiring accounting interventions, eliminating primary motivation driving opportunistic manipulation (Doukakis, 2020). Additionally, strong profitability attracts heightened investor, analyst, and regulatory scrutiny increasing manipulation detection probabilities and associated reputational penalties deterring aggressive accounting choices (Francis et al., 2021).

Results align with signaling theory perspectives where high-quality profitable firms distinguish themselves through conservative, transparent reporting establishing credibility with stakeholders and reducing information asymmetries (Bhattacharya et al., 2020). Conversely, marginal profitability situations create performance pressures motivating management to engage in income-increasing accrual manipulation meeting stakeholder expectations and avoiding adverse market reactions (Perols & Lougee, 2021). Within basic and chemical industry contexts characterized by cyclical demand patterns and volatile input costs, profitability stability becomes particularly crucial maintaining reporting credibility during challenging operating environments.

Hypothesis 3: Leverage Effect on Earnings Management

Debt-to-Assets Ratio demonstrates statistically significant positive effect on total accruals (β = 0.036, t = 3.664, p = 0.001), supporting hypothesis acceptance regarding leverage's earnings management influence. Results confirm highly leveraged firms exhibit greater earnings manipulation susceptibility driven by financial obligation pressures and covenant compliance motivations.

Positive leverage-earnings management relationship validates debt contracting theory predictions where firms approaching covenant violation thresholds engage in income-increasing accrual manipulations improving reported financial ratios, ensuring continued credit availability, and maintaining operational flexibility (Franz et al., 2020). Debt covenants frequently incorporate accounting-based restrictions specifying minimum profitability, liquidity, or leverage ratios, creating

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direct incentives for earnings management when firms risk technical defaults triggering accelerated repayment requirements or restrictive amendments (Beatty & Weber, 2021).

Additionally, financial distress risks accompanying high leverage motivate management to disguise deteriorating performance through optimistic accounting choices attempting to maintain stakeholder confidence and forestall bankruptcy proceedings (Campa & Camacho-Miñano, 2021). Within Indonesian manufacturing contexts experiencing pandemic-related demand disruptions and supply chain challenges during observation period, highly leveraged firms faced intensified covenant pressures potentially exacerbating earnings management temptations (Kristanti & Priyadi, 2021).

Results emphasize leverage's double-edged nature where debt financing provides capital structure benefits through tax shields and reduced agency costs, yet simultaneously creates financial constraints and reporting pressures potentially compromising information quality (Harris & Roark, 2020). Findings suggest creditor monitoring, while theoretically constraining earnings management through oversight functions, proves insufficient preventing manipulation when firms confront immediate covenant violation

threats overwhelming governance effectiveness (Demiroglu & James, 2021).

Simultaneous Significance Testing (F-test)

Table 7. ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.523	3	4.841	59.033	0.000
Residual	5.248	64	0.082		
Total	19.771	67			

a. Dependent Variable: Total Accruals
b. Predictors: (Constant), Institutional Ownership, ROA, DAR
Source: SPSS data processing results (2025)

F-statistic of 59.033 with significance value 0.000 ($p < 0.001$) confirms institutional ownership, profitability, and leverage collectively exert statistically significant effects on earnings management, validating integrated analytical approaches examining multiple determinants simultaneously. Results support Hypothesis 4 acceptance, demonstrating regression model explains meaningful earnings management variance beyond random chance.

Simultaneous significance indicates earnings management results from complex interactions among governance mechanisms, operational performance, and financial structure characteristics rather than isolated determinants (Alzoubi, 2023). Effective earnings management constraint requires comprehensive governance frameworks addressing multiple vulnerability sources including monitoring weaknesses, performance pressures, and financial distress risks collectively enabling manipulation (Aguilera et al., 2021). Results emphasize integrated governance approaches combining ownership concentration, profitability enhancement, and prudent leverage management creating synergistic effects strengthening reporting quality.

Coefficient of Determination

Table 8. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.857	0.735	0.774	0.28618

a. Predictors: (Constant), Institutional Ownership, ROA, DAR

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b. Dependent Variable: Total Accruals
Source: SPSS data processing results (2025)
Adjusted R-square value of 0.774 indicates institutional ownership, profitability, and leverage collectively explain 77.4% of total accruals variance within sample observations, demonstrating substantial model explanatory power. Remaining 22.6% variance reflects unexamined influences including audit quality, board characteristics, managerial incentives, industry-specific factors, and macroeconomic conditions affecting earnings management beyond studied variables (Dechow et al., 2020).

High explanatory power confirms institutional ownership, profitability, and leverage constitute critical earnings management determinants within Indonesian basic and chemical industry contexts, though additional governance and organizational factors warrant future investigation for comprehensive understanding. Results provide strong empirical foundation for governance recommendations and regulatory policy development targeting reporting quality enhancement within manufacturing sectors.

Integrated Discussion
Empirical findings reveal differential effectiveness among examined earnings management determinants, with profitability and leverage demonstrating significant influences while institutional ownership exhibits insignificant effects within Indonesian basic and chemical industry contexts. These heterogeneous relationships underscore earnings management complexity requiring nuanced understanding beyond simplistic linear assumptions.

Governance Mechanisms and Monitoring Effectiveness
Institutional ownership's insignificant earnings management effect contrasts with developed market evidence emphasizing institutional monitoring effectiveness constraining opportunistic manipulation (Chung & Zhang, 2021). This divergence potentially reflects emerging market characteristics including concentrated ownership structures, limited institutional investor sophistication, potential conflicts of interest, and weak enforcement environments diluting governance effectiveness (Alhadab & Al-Own, 2021). Results suggest institutional ownership provides necessary but insufficient governance protection requiring complementary mechanisms—independent boards, audit committee oversight, external audit quality—creating comprehensive monitoring systems effectively constraining earnings management (Aguilera et al., 2021).

Within Indonesian contexts, institutional investor population remains dominated by domestic entities with varying governance engagement philosophies and resource constraints potentially limiting active monitoring capabilities (Widyaningdyah & Septiani, 2020). Additionally, business relationships between institutional investors and portfolio companies may compromise monitoring independence when investment managers prioritize maintaining client relationships over aggressive governance interventions (Cvijanović et al., 2022). These institutional characteristics suggest policy reforms strengthening institutional investor capabilities, promoting stewardship principles, and enhancing monitoring incentives constitute important governance development priorities.

Operational Performance and Reporting Quality
Profitability's strong negative earnings management effect provides compelling evidence that operational excellence constitutes fundamental reporting quality determinant within manufacturing contexts. Superior profitability reduces performance pressures motivating manipulation while simultaneously increasing reputational capital that management hesitates jeopardizing through

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aggressive accounting (Francis et al., 2021). Results emphasize strategic importance of competitive positioning, operational efficiency, and sustainable business model development creating natural earnings generation eliminating manipulation incentives.

Negative profitability-earnings management relationship supports signaling theory predictions where high-quality firms distinguish themselves through conservative reporting establishing market credibility and information transparency (Bhattacharya et al., 2020). Conversely, marginal performers facing profit pressures confront strong temptations manipulating earnings meeting stakeholder expectations despite heightened detection risks and adverse consequences. These dynamics suggest regulatory emphasis on operational fundamentals, business model sustainability, and strategic viability constitutes important complement to governance-focused interventions addressing reporting quality enhancement.

Financial Structure and Reporting Pressures

Leverage's significant positive earnings management effect confirms debt contracting creates powerful incentives for income-increasing manipulation when firms approach covenant violation thresholds or confront financial distress risks (Beatty & Weber, 2021). High leverage concentrates ownership claims among creditors theoretically exercising monitoring functions, yet creditor oversight primarily emphasizes downside protection rather than comprehensive reporting quality particularly when covenant breaches threaten immediate adverse consequences (Demiroglu & James, 2021).

Results suggest prudent capital structure management avoiding excessive leverage constitutes important earnings management constraint reducing covenant pressures and financial distress motivations driving manipulation (Harris & Roark, 2020). Additionally, covenant design incorporating non-accounting restrictions—asset restrictions, dividend limitations, investment constraints—may provide more robust creditor protection reducing earnings management incentives compared to purely accounting-based covenants vulnerable to manipulation (Franz et al., 2020).

Conclusion

This investigation reveals institutional ownership, profitability, and leverage collectively exert significant effects on earnings management within Indonesian basic and chemical industry companies during 2020-2023, though individual variable influences demonstrate differential patterns. Profitability measured through ROA emerges as strongest earnings management determinant exhibiting highly significant negative effects, indicating superior operational performance substantially reduces manipulation incentives while increasing detection risks deterring opportunistic reporting. Leverage measured through DAR demonstrates significant positive effects confirming debt covenant pressures and financial distress risks motivate income-increasing accrual adjustments avoiding adverse consequences.

Conversely, institutional ownership exhibits insignificant earnings management effects despite theoretical predictions emphasizing monitoring effectiveness, potentially reflecting institutional investor heterogeneity, engagement limitations, or emerging market characteristics diluting governance effectiveness within Indonesian contexts. Simultaneous testing confirms these three variables collectively explain 77.4% earnings management variance, validating integrated analytical approaches examining multiple determinants comprehensively.

Findings advance earnings management understanding within Indonesian manufacturing contexts, clarifying how operational performance, capital structure, and ownership characteristics interact affecting reporting quality. Results emphasize profitability enhancement and prudent leverage

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management as critical strategies constraining earnings manipulation, while suggesting institutional ownership alone provides insufficient governance protection without complementary mechanisms strengthening overall monitoring effectiveness.

Practical Implications

For Management:

1. **Operational Excellence Priority:** Focus strategic efforts on sustainable profitability improvement through competitive positioning enhancement, operational efficiency gains, and business model innovation creating natural earnings generation eliminating manipulation incentives while building reputational capital.

2. **Prudent Leverage Management:** Implement conservative capital structure policies avoiding excessive debt burdens creating covenant pressures and financial distress risks motivating earnings management. Maintain adequate financial flexibility cushioning performance volatility and reducing manipulation temptations during challenging operating environments.

3. **Comprehensive Governance Frameworks:** Develop integrated governance systems combining institutional monitoring, independent board oversight, audit committee effectiveness, and internal control quality creating multiple constraint mechanisms collectively limiting earnings management opportunities.

4. **Transparent Communication:** Establish candid stakeholder communication regarding performance challenges, strategic initiatives, and future prospects building credibility reducing perceived needs for earnings manipulation maintaining confidence during difficult periods.

5. **Covenant Design Consideration:** Negotiate debt agreements incorporating non-accounting restrictions and covenant cushions reducing pressure for earnings manipulation when approaching technical violation thresholds, while maintaining constructive creditor relationships supporting long-term financial health.

For Investors:

1. **Profitability Assessment:** Emphasize operational performance evaluation examining sustainable earnings generation capabilities, competitive advantages, and business model resilience as primary investment criteria signaling reporting quality and manipulation risk.

2. **Leverage Monitoring:** Scrutinize capital structure characteristics identifying excessive debt burdens creating financial distress risks and covenant pressures potentially motivating earnings management compromising information reliability.

3. **Governance Due Diligence:** Evaluate comprehensive governance quality examining institutional ownership characteristics, board independence, audit committee expertise, and internal control effectiveness rather than relying exclusively on ownership concentration metrics.

4. **Accrual Analysis:** Conduct systematic accrual quality assessments examining earnings-cash flow divergences, working capital trends, and discretionary accrual patterns identifying potential manipulation signals warranting deeper investigation.

5. **Industry Context Consideration:** Recognize sector-specific earnings management risks within manufacturing industries characterized by complex inventory management, production costing discretion, and cyclical demand patterns requiring heightened vigilance.

For Regulators:

1. **Institutional Investor Development:** Promote institutional investor sophistication through stewardship code implementation, governance training programs, and engagement best

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practices dissemination strengthening monitoring capabilities within Indonesian capital markets.

2. **Profitability Disclosure Enhancement:** Mandate comprehensive segment reporting, disaggregated performance metrics, and forward-looking disclosures enabling stakeholders to assess operational sustainability and earnings quality more effectively.

3. **Covenant Design Guidelines:** Develop best practice recommendations for debt covenant structures balancing creditor protection with earnings management constraint, potentially emphasizing non-accounting restrictions reducing manipulation incentives.

4. **Audit Quality Emphasis:** Strengthen audit oversight focusing on accrual estimation auditing, management judgment challenges, and earnings management risk assessment ensuring external auditors effectively constrain opportunistic reporting.

5. **Enforcement Enhancement:** Increase earnings manipulation detection capabilities and sanction severity creating credible deterrence particularly for highly leveraged firms confronting covenant pressures potentially overwhelming governance effectiveness.

Recommendations for Future Research

1. **Institutional Investor Heterogeneity:** Examine differential monitoring effectiveness across institutional investor types—mutual funds versus pension funds, domestic versus foreign investors, active versus passive strategies—clarifying which institutional characteristics generate effective earnings management constraints.

2. **Nonlinear Relationship Exploration:** Investigate potential curvilinear profitability-earnings management relationships where extremely high profitability may incentivize income-decreasing manipulation establishing earnings reserves, while very low profitability motivates income-increasing adjustments avoiding losses.

3. **Covenant Design Analysis:** Conduct detailed examination of debt covenant structures comparing accounting-based versus non-accounting restrictions, covenant tightness effects, and violation proximity influences on earnings management intensity providing refined capital structure guidance.

4. **Governance Mechanism Interactions:** Analyze synergistic effects among multiple governance dimensions including institutional ownership, board independence, audit quality, and internal controls identifying optimal configuration maximizing earnings management constraints.

5. **Longitudinal Dynamics:** Employ extended observation periods capturing temporal evolution of earnings management patterns, persistence of manipulation practices, and consequences of earnings quality deterioration for firm performance and market valuation.

6. **Industry Comparative Studies:** Extend investigation across diverse manufacturing sectors comparing basic and chemical industry earnings management patterns with consumer goods, automotive, and technology sectors identifying industry-specific risk factors and constraint mechanisms.

7. **Real Activities Manipulation:** Incorporate real earnings management measurement examining production decisions, discretionary expenditure timing, and asset disposal strategies complementing accrual-based manipulation detection providing comprehensive earnings quality assessment.

8. **Qualitative Integration:** Employ mixed methods approaches combining quantitative accrual analysis with qualitative interviews exploring managerial motivations, governance process

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effectiveness, and stakeholder perceptions enriching understanding of earnings management determinants and consequences.

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