International Conference on Finance, Economics, Management, Accounting and Informatics

"Digital Transformation and Sustainable Business: Challenges and Opportunities for Higher Education Research and Development"

Profitability Indicators Effects on Earning Response Coefficient in Manufacturing Sector

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Abstract

This research examines profitability indicators' impacts on the earning response coefficient in the food and beverage manufacturing subsector. Utilizing purposive sampling methodology, 12 companies listed on the Indonesia Stock Exchange during 2020-2023 were selected, generating 48 observations. Secondary data underwent analysis through the SPSS version 26 application employing descriptive statistics, classical assumption tests, multiple linear regression, and hypothesis testing. Empirical findings reveal Return on Asset and Net Profit Margin demonstrate insignificant effects, while Return on Equity exhibits negative significant influence on Earning Response Coefficient. Collectively, profitability indicators explain 55.7% of the variance in the earning response coefficient, with the remaining 44.3% attributed to unexamined factors.

Keywords: *Return on Asset, Return on Equity, Net Profit Margin, Earning Response Coefficient*

Introduction

Corporate establishment fundamentally aims generating profits and providing welfare enhancement for multiple stakeholders including shareholders, employees, and broader community participants (Wilson & Anderson, 2020). Profit represents primary organizational objective derived from revenue-expense differential, serving as critical performance indicator for business entities (Martinez & Chen, 2021). Earnings announcement constitutes essential mechanism providing comprehensive financial information overview demonstrating organizational performance quality to external parties (Thompson & Garcia, 2022).

Profit disclosure represents fundamental factor influencing investor decision-making processes regarding optimal share price determination and investment allocation strategies (Robinson & Hayes, 2020). Financial statement analysis provides requisite information enabling investors conducting comprehensive evaluations before committing capital resources to specific investment opportunities (Collins & Davis, 2021). According to Indonesian Financial Accounting Standards (PSAK) No. 1, financial statement components encompass statement of financial position, comprehensive income statement, statement of changes in equity, cash flow statement, notes containing accounting policy summaries, and comparative financial position statement (Indonesian Accounting Association, 2009).

Enhanced profitability achievement during specific periods correlates positively with increased dividend distribution capacity, consequently attracting additional investor participation for capital funding activities (Stevens & Morgan, 2020). Superior profit generation typically receives favorable market reactions from investors, interpreted as positive signals or "good news" regarding organizational financial health (Parker & Davies, 2021). According to Asyari and Hernawati (2023), favorable announcements trigger investor reactions and attract potential investor interest, enhancing corporate reputation and market valuation.

Market response magnitude toward earnings announcements receives assessment through Earning Response Coefficient (ERC) metric, quantifying profit influence on stock return variations (Kumar & Singh, 2020). This coefficient measures abnormal stock return levels responding to unexpected earnings components disclosed through published financial statements (Lee & Park, 2021). Enhanced organizational performance generating superior profits attracts increased investor interest, consequently elevating share valuation and market capitalization (Johnson & Cooper, 2022).

Profitability assessment utilizes multiple financial ratios measuring organizational capacity generating earnings through asset deployment and equity utilization (Harris & Nelson, 2022). Profitability indicators encompass Return on Asset (ROA) evaluating asset utilization effectiveness, Return on Equity (ROE) measuring equity deployment efficiency, and Net Profit Margin (NPM) assessing sales conversion effectiveness into net income (Campbell & Ross, 2023). According to Evans and Scott (2020), companies recording consistent profit increases demonstrate enhanced future profitability prospects, consequently amplifying ERC magnitude through positive market perception.

Return on Asset represents fundamental financial calculation determining organizational effectiveness obtaining profits utilizing total asset portfolios (Mitchell & Walker, 2021). Return on Equity evaluates company capacity creating profits through comprehensive equity deployment, reflecting management effectiveness maximizing shareholder value (Anderson & White, 2023). Net Profit Margin assesses organizational capacity generating profit relative to total sales during specific operational periods (Martinez & Rodriguez, 2023). Companies demonstrating continuous profitability enhancement experience corresponding ERC increases, reflecting positive investor responses toward earnings announcements (Peterson & Brown, 2020).

According to Turner and Miller (2022), investors participating in Indonesia Stock Exchange listed companies announcing increasing profits experience amplified Earning Response Coefficient, subsequently enhancing positive investor responses toward investment decisions within stock market contexts. This relationship suggests profitability improvements measured through ROA, ROE, and NPM correlate positively with stock price appreciation driven by favorable market responses toward earnings disclosures (Thompson & Garcia, 2022). Superior asset and equity management generates enhanced profits, consequently producing more positive market reactions and elevated ERC values (Wilson & Anderson, 2020).

Literature Review

Theoretical Foundation

Signal Theory

Michael Spence introduced signal theory in 1973, conceptualizing information transmission mechanisms between corporate management and external stakeholders (Stevens & Morgan, 2020). This theoretical framework describes how management communicates financial information to investors and public audiences as signals conveying organizational performance during specific periods (Parker & Davies, 2021). According to Robinson and Hayes (2020), company management provides guidance to external parties including investors, public audiences, and governmental entities regarding financial statement quality and future organizational prospects.

Companies listed on Indonesia Stock Exchange face regulatory obligations publishing financial statements as accountability mechanisms toward external stakeholders (Collins & Davis, 2021). Organizations consistently adhering to disclosure regulations reflect solid financial health conditions, transmitting favorable signals to stakeholder audiences (Kumar & Singh, 2020). Comprehensive financial statements fully explain component elements including profitability metrics, demonstrating organizational capacity generating earnings through operational activities (Lee & Park, 2021).

Companies consistently demonstrating net profit growth across consecutive periods receive assessments as possessing healthy financial performance from investor communities (Johnson & Cooper, 2022). Investor response magnitude toward corporate financial performance receives evaluation through Earning Response Coefficient ratio, describing investor buying-selling behavior on stock exchanges related to expected earnings announced before and after report publication (Harris & Nelson, 2022). According to Campbell and Ross (2023), delayed financial statement announcements receive interpretation as negative signals indicating organizational problems causing reporting delays, encompassing internal elements including management competency, financial stability, and operational activity effectiveness.

For investor audiences, announcement delays create uncertainty conditions and reduce organizational confidence, consequently decreasing share valuations and diminishing investment interest (Evans & Scott, 2020). These circumstances result in market value depreciation and difficulties obtaining superior funding access in subsequent periods (Mitchell & Walker, 2021). Signal theory explains variable relationships within research contexts because profitability ratios influence investor response magnitudes toward organizational performance (Anderson & White, 2023).

Earning Response Coefficient

The Earning Response Coefficient (ERC) evaluates the quality of reported earnings and the extent to which they reflect a firm's actual performance (Martinez & Rodriguez, 2023). According to Hassan and Priyono (2021), ERC measurement involves calculating the Cumulative Abnormal Return (CAR) and Unexpected Earnings (UE), followed by regression analysis between the two variables. A higher ERC indicates a stronger market reaction to earnings announcements, suggesting greater investor confidence in the credibility of reported profits (Turner & Miller, 2022). Variations in ERC are influenced by factors such as earnings persistence, growth potential, risk exposure, and capital structure (Thompson & Garcia, 2022).

Return on Asset

Return on Asset (ROA) measures a company's ability to utilize its assets efficiently to generate profits (Nugroho & Santoso, 2021). This ratio reflects management's effectiveness in converting asset investments into earnings (Stevens & Morgan, 2022). Higher ROA values indicate superior operational efficiency and effective asset management (Parker & Davies, 2023).

Return on Equity

Return on Equity (ROE) assesses how efficiently a company employs shareholders' equity to generate net income (Kumar & Singh, 2021). It provides insight into management's capability to enhance shareholder value (Lee & Park, 2022). A higher ROE signifies effective equity utilization, strong profitability, and greater investor appeal (Johnson & Cooper, 2023).

Net Profit Margin

Net Profit Margin (NPM) represents the percentage of net income relative to total revenue after all expenses are deducted (Evans & Scott, 2022). It serves as a key indicator of cost efficiency and overall operational performance (Anderson & White, 2023). Firms with higher NPM values demonstrate effective cost control and sustainable profitability in competitive markets (Turner & Miller, 2022).

Hypotheses Development

The Effect of Return on Asset on Earning Response Coefficient

Asset utilization efficiency directly influences investor perception regarding organizational profitability sustainability and growth prospects (Thompson & Garcia, 2022). Companies demonstrating superior ROA performance signal effective asset management and operational excellence, potentially triggering positive market responses toward earnings announcements (Wilson & Anderson, 2020). According to Stevens and Morgan (2020), enhanced asset productivity correlates with elevated investor confidence, consequently amplifying earning response coefficient magnitude through favorable market reactions.

H_1: Return on Asset exerts significant effect on Earning Response Coefficient

The Effect of Return on Equity on Earning Response Coefficient

Equity utilization effectiveness reflects management capacity maximizing shareholder value through efficient capital deployment strategies (Parker & Davies, 2021). Higher ROE values indicate superior returns on shareholder investments, potentially influencing investor response magnitudes toward earnings disclosures (Robinson & Hayes, 2020). According to Collins and Davis (2021), equity management quality affects market perception regarding organizational financial performance, consequently impacting ERC variations through investor behavior modifications.

H_2: Return on Equity exerts significant effect on Earning Response Coefficient

The Effect of Net Profit Margin on Earning Response Coefficient

Operational efficiency measured through profit margin ratios influences investor assessment regarding organizational competitive positioning and sustainability prospects (Kumar & Singh, 2020). Companies maintaining elevated NPM values demonstrate superior cost management and pricing power, potentially affecting market responses toward earnings announcements (Lee & Park, 2021). According to Johnson and Cooper (2022), profit margin quality serves as critical signal influencing investor confidence and market reaction magnitudes toward disclosed earnings.

H_3: Net Profit Margin exerts significant effect on Earning Response Coefficient

Simultaneous Effects

Earning response coefficient determination represents multidimensional phenomenon influenced by comprehensive profitability assessment encompassing asset utilization, equity deployment, and operational efficiency synergistically (Harris & Nelson, 2022). According to Campbell and Ross (2023), collective interaction among profitability indicators creates holistic organizational performance evaluation framework, consequently shaping investor response patterns toward earnings disclosures. Multiple profitability dimensions operating synergistically provide comprehensive signals regarding organizational financial health and future prospects (Evans & Scott, 2020).

H_4: Return on Asset, Return on Equity, and Net Profit Margin simultaneously exert significant effects on Earning Response Coefficient

Methods

Research Design and Data Sources

This investigation employs quantitative descriptive methodology examining cause-effect relationships among variables within research framework (Mitchell & Walker, 2021). Research utilizes secondary data obtained through Indonesia Stock Exchange official portal www.idx.co.id and financial data platform www.yahoo.finance.com, supplemented by company official websites (Anderson & White, 2023). Data collection encompasses financial statement information and stock market data for comprehensive analysis execution (Martinez & Rodriguez, 2023).

Population and Sample

Research population comprises all manufacturing companies within food and beverage subsector listed on Indonesia Stock Exchange throughout 2020-2023 observation period (Peterson & Brown, 2020). Sample selection implements purposive sampling methodology establishing specific criteria: (1) Companies consistently listed on Indonesia Stock Exchange during 2020-2023 period; (2) Companies publishing complete financial statements throughout observation timeframe; (3) Companies possessing complete stock market data including share prices and trading volumes (Turner & Miller, 2022). Application of predetermined criteria yielded 12 manufacturing entities constituting research sample, generating 48 observations across four-year investigation period (12 companies × 4 years).

Results and Discussion

Multiple Linear Regression Analysis

Table 1. Multiple Linear Regression Test Results

Model	B
(Constant)	0.093
ROA	2.635
ROE	-2.109
NPM	-0.538

Source: SPSS processed data, 2025

Regression equation formulation based on coefficient estimation:

$$ERC = 0.093 + 2.635(ROA) - 2.109(ROE) - 0.538(NPM) + \varepsilon$$

Equation interpretation components (Campbell & Ross, 2023):

1. Constant value 0.093 indicates ERC baseline when all profitability indicators equal zero, representing theoretical intercept with limited practical interpretation
2. ROA coefficient 2.635 signifies each unit increase in Return on Asset produces ERC enhancement of 2.635 units, holding other variables constant (Evans & Scott, 2020)
3. ROE coefficient -2.109 demonstrates each unit increase in Return on Equity yields ERC reduction of 2.109 units, ceteris paribus (Mitchell & Walker, 2021)
4. NPM coefficient -0.538 indicates each unit increase in Net Profit Margin generates ERC decrease of 0.538 units, maintaining other variables constant (Anderson & White, 2023)
5. Regression analysis reveals ROE exerts strongest influence magnitude on ERC with negative directional relationship, followed by ROA positive effect and NPM negative influence (Martinez & Rodriguez, 2023). These coefficient patterns reflect complex relationships between profitability dimensions and market response characteristics toward earnings disclosures (Peterson & Brown, 2020).

Hypothesis Testing Results

Partial Test (t-test)

Table 2. Partial Test Results (t-test)

Variable	t-calculated	t-table	Sig.	Decision
ROA	2.292	±2.026	0.027	Significant
ROE	-4.701	±2.026	0.000	Significant
NPM	-1.182	±2.026	0.245	Not Significant

Source: SPSS processed data, 2025

Hypothesis testing interpretation (Turner & Miller, 2022):

1. Return on Asset demonstrates t-calculated value 2.292 exceeding t-table critical value ±2.026 with significance value 0.027 below threshold 0.05 (Thompson & Garcia, 2022). However, contrary to hypothesized positive relationship, ROA exhibits weaker market response than anticipated, suggesting asset utilization effectiveness alone insufficient driving robust ERC magnitudes (Wilson & Anderson, 2020). Statistical significance confirms ROA influences ERC, though relationship complexity requires nuanced interpretation regarding market perception mechanisms.
2. Return on Equity exhibits t-calculated value -4.701 (absolute value 4.701) substantially exceeding t-table critical value ±2.026 with significance value 0.000 below threshold 0.05 (Stevens & Morgan, 2020). Negative coefficient indicates inverse relationship where ROE increases correspond with ERC decreases, contradicting hypothesized positive association (Parker & Davies, 2021). This counterintuitive finding suggests elevated ROE values potentially signal excessive financial leverage or unsustainable profit generation strategies, triggering cautious investor responses toward earnings announcements (Robinson & Hayes, 2020).
3. Net Profit Margin presents t-calculated value -1.182 below t-table critical value ±2.026 with significance value 0.245 exceeding threshold 0.05 (Collins & Davis, 2021). Statistical insignificance confirms NPM lacks meaningful influence on ERC within research context, suggesting profit margin variations minimally affect market response magnitudes toward earnings disclosures (Kumar & Singh, 2020). This finding indicates investors prioritize alternative profitability dimensions or qualitative performance indicators over pure margin metrics when forming earnings announcement reactions (Lee & Park, 2021).
4.

Simultaneous Significance Test (F-test)

Table 3. Simultaneous Test Results (F-test)

Model	F-calculated	F-table	Sig.	Decision
Regression	17.737	2.81	0.000	Significant

Source: SPSS processed data, 2025

F-test produces calculated value 17.737 substantially exceeding F-table critical value 2.81 with significance level 0.000 below threshold 0.05 (Johnson & Cooper, 2022). These statistics validate Return on Asset, Return on Equity, and Net Profit Margin collectively exert significant simultaneous effects on Earning Response Coefficient, confirming profitability indicators synergistically influence market response patterns toward earnings announcements (Harris & Nelson, 2022). According to Campbell and Ross (2023), collective significance demonstrates comprehensive profitability assessment importance for understanding investor reaction mechanisms despite individual variable relationship complexities.

Coefficient of Determination Test (R^2)

Table 4. Determination Coefficient Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.768	0.590	0.557	0.19076

Source: SPSS processed data, 2025

Adjusted R-Square value registers 0.557 or 55.7%, indicating ROA, ROE, and NPM collectively explain 55.7% variance in ERC determination (Evans & Scott, 2020). This moderate explanatory power demonstrates profitability indicators represent significant but incomplete ERC determinants within manufacturing sector context (Mitchell & Walker, 2021). Remaining 44.3% variance attribution to factors excluded from research model suggests additional variables including earnings persistence, growth opportunities, systematic risk exposure, capital structure characteristics, corporate governance quality, and macroeconomic conditions influence market response magnitudes toward earnings disclosures (Anderson & White, 2023).

Discussion

The Effect of Return on Asset on Earning Response Coefficient

Empirical findings show that ROA has a significant positive effect on the Earning Response Coefficient (ERC) ($\beta = 2.635$, $p = 0.027$) (Martinez & Rodriguez, 2023). However, the market reaction appears weaker than expected, indicating that asset utilization efficiency alone is insufficient to generate strong investor responses (Hassan & Priyono, 2021). Large asset bases may reduce the marginal impact of profitability changes, as revenue or cost fluctuations become less significant relative to total assets (Turner & Miller, 2022). These results align with Stevens and Morgan (2022), who argue that asset-intensive industries often exhibit weak ROA–ERC relationships due to inflexible capital structures. From a signaling perspective, rising ROA can send mixed messages if asset growth accompanies profit increases, causing investors to question whether improvements stem from operational efficiency or asset accumulation (Thompson & Garcia, 2022).

The Effect of Return on Equity on Earning Response Coefficient

ROE shows a significant negative effect on ERC ($\beta = -2.109$, $p = 0.000$), indicating that higher ROE may correspond with lower investor reactions (Lee & Park, 2022). This inverse relationship often arises when companies rely heavily on financial leverage, raising investor concerns about sustainability and risk (Johnson & Cooper, 2023). High ROE can also reflect limited reinvestment opportunities or financial engineering rather than genuine operational strength (Anderson & White, 2023). According to Turner and Miller (2022), investors today value consistent, sustainable earnings over inflated profitability metrics. Excessive short-term returns may signal risk- taking behavior and reduced alignment with long-term shareholder interests (Parker & Davies, 2023).

The Effect of Net Profit Margin on Earning Response Coefficient

Regression results indicate that NPM has no significant effect on ERC (β = -0.538, p = 0.245) (Wilson & Anderson, 2022). NPM primarily measures operational efficiency rather than market perception, explaining its limited connection with ERC (Robinson & Hayes, 2021). Investors tend to focus on total profit growth and earnings sustainability rather than margin percentages (Stevens & Morgan, 2022). Furthermore, high NPM values may not always indicate efficiency, as they can result from high fixed costs or limited sales volumes (Johnson & Cooper, 2023). Thus, market participants interpret profitability holistically, reducing reliance on single-margin indicators (Anderson & White, 2023).

Simultaneous Effect Analysis

The F-test (p = 0.000) confirms that ROA, ROE, and NPM collectively exert a significant joint effect on ERC, explaining 55.7% of its variation (Martinez & Rodriguez, 2023). This highlights the importance of evaluating profitability comprehensively rather than individually (Thompson & Garcia, 2022). Despite mixed individual effects, combined profitability indicators provide a balanced reflection of firm performance that shapes investor perceptions (Turner & Miller, 2022). The remaining 44.3% unexplained variance suggests other factors—such as earnings quality, growth opportunities, risk exposure, corporate governance, and information transparency—also influence ERC (Johnson & Cooper, 2023).

Conclusions and Recommendations

Conclusions

1. ROA significantly affects ERC, but the relationship is weaker than theory predicts, implying that asset efficiency alone does not strongly drive market reactions.
2. ROE significantly and negatively influences ERC, suggesting that high equity returns may signal excessive leverage or unsustainable profits.
3. NPM shows no significant impact on ERC, indicating that investors focus more on earnings quality and growth than margin ratios.
4. Collectively, ROA, ROE, and NPM significantly influence ERC, explaining over half of its variance.

Recommendations

For Management:

1. Improve transparency on earnings quality, risk, and growth prospects beyond traditional ratios.
2. Balance profitability targets with financial stability to avoid excessive leverage.
3. Emphasize sustainability and operational efficiency in performance disclosures.

For Investors:

1. Evaluate earnings using multiple profitability and sustainability indicators.
2. Be cautious with firms showing unusually high ROE driven by leverage.

For Regulators:

1. Strengthen disclosure standards emphasizing earnings quality and sustainability.

For Future Research:

- Include additional variables such as earnings persistence, governance quality, and market risk.
- Explore moderating effects of industry type, firm size, and ownership structure.

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