

LIQUIDITY, LEVERAGE, ACTIVITY RATIO, AND PROFITABILITY OF INDONESIAN FOOD AND BEVERAGE FIRMS

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Abstract

This study aimed to examine the effect of liquidity, leverage, and activity ratio on profitability in non-financial food and beverage companies listed on the Indonesia Stock Exchange during the 2023–2025 period. The study employed a quantitative approach with an associative-causal design. The population consisted of 102 food and beverage companies, and a sample of 64 companies was selected through purposive sampling, resulting in 192 firm-year observations over three years. Secondary data were collected from audited annual financial statements. Profitability was measured by Return on Assets, while liquidity, leverage, and activity ratio were measured by Current Ratio, Debt-to-Equity Ratio, and Total Asset Turnover, respectively. The data were analyzed using panel data regression with model selection tests and classical assumption tests. The results showed that liquidity had no significant effect on profitability, with a regression coefficient of -0.000110 and a significance value of 0.781 . Leverage had a significant negative effect on profitability, with a regression coefficient of -0.045 and a significance value of 0.000 . Activity ratio had a significant positive effect on profitability, with a regression coefficient of 0.071 and a significance value of 0.000 . The adjusted coefficient of determination indicated that 63.56 percent of the variation in profitability was explained by the three independent variables, while the remaining 36.44 percent was attributed to factors outside the model. These findings implied that food and beverage companies should not only maintain short-term solvency but also control debt usage and improve asset utilization to strengthen profitability, as excessive liquidity may become idle assets that do not generate income, while high leverage increases fixed financial obligations that reduce net profit.

Keywords: Liquidity, Leverage, Activity Ratio, Profitability

1. Introduction

Financial performance is a key indicator used by management, investors, and creditors to evaluate a firm's ability to use its resources effectively and maintain business continuity (Choudhury, 2024). Profitability is one of the most widely used indicators because it reflects the company's capacity to generate earnings from its assets and operating activities. In the capital market, profitability also represents a signal for investors in evaluating future prospects and making investment decisions (Nguyen & Pham, 2026). Profitability is measured using Return on Assets (ROA), which compares net income to total assets and indicates how efficiently a company utilizes its assets to generate profits. A high ROA reflects effective asset utilization and strong financial performance, while a low ROA indicates inefficiency in generating earnings from available resources. For food and beverage companies, profitability is particularly important because this sector



operates in a competitive environment where operational efficiency and cost management determine business sustainability.

The food and beverage subsector is an important part of the consumer non-cyclicals industry in Indonesia because its products are basic necessities consumed continuously by society. This characteristic makes demand relatively more stable than that of industries that are heavily affected by economic cycles. However, stable demand does not automatically guarantee stable profitability. During 2023–2025, several food and beverage companies experienced fluctuations in return on assets, indicating that internal financial management remains a crucial determinant of firm performance (Wulandari & Takarini, 2024; Waruwu & Palupiningtyas, 2025).

Previous studies have produced inconsistent results regarding the relationship between liquidity, leverage, activity ratio, and profitability. Some studies found that liquidity improves profitability by supporting operational continuity, while other studies reported insignificant or negative effects when current assets are not used productively (Anton & Nucu, 2020; Jaworski & Czerwonka, 2021; Gunawan & Ramli, 2023). Leverage also shows mixed effects; debt may increase resources for expansion, but excessive debt can reduce profit through interest expenses and financial risk (Nguyen et al., 2020; Prekazi, 2023). Meanwhile, activity ratio is generally associated with asset efficiency, although its impact may vary across industry characteristics and managerial policies (Alarussi & Alhaderi, 2021; Marpaung & Hasibuan, 2021; Widyasari & Adi, 2023).

The urgency of this research is driven by several critical factors. First, financial performance is a key indicator used by management, investors, and creditors to evaluate a firm's ability to use its resources effectively, yet the inconsistent profitability performance of food and beverage issuers after the pandemic remains underexplored. Second, the food and beverage subsector is an important part of the consumer non-cyclicals industry in Indonesia, yet stable demand does not automatically guarantee stable profitability, as several companies experienced fluctuations in return on assets during 2023–2025. Third, empirical evidence regarding liquidity, leverage, and activity ratio on profitability remains inconclusive, with some studies reporting significant effects and others reporting insignificant or no relationship. Fourth, the food and beverage industry during the 2023–2025 post-pandemic period represents a unique context characterized by changing purchasing power, raw material inflation, supply chain pressures, and increasingly competitive operations, yet empirical evidence on the determinants of profitability in this sector remains limited. Fifth, the integrated framework connecting liquidity, leverage, and activity ratio in one panel regression model to explain profitability as measured by return on assets remains underexplored, particularly in the context of Indonesian food and beverage companies.

Previous research has shown significant but fragmented findings regarding the determinants of profitability. Studies have demonstrated that liquidity significantly influences profitability (Anton & Nucu, 2020; Jaworski & Czerwonka, 2021; Gunawan & Ramli, 2023), that leverage affects profitability (Nguyen et al., 2020; Prekazi, 2023), and that activity ratio influences profitability (Alarussi & Alhaderi, 2021; Marpaung & Hasibuan, 2021; Widyasari & Adi, 2023). However, other studies have reported contradictory findings, indicating that liquidity does not significantly affect profitability (Nurjanah et al., 2025; Abo Alkomsan, 2024), that leverage has no significant effect (Wahyudi, 2024), and that activity ratio does not significantly influence profitability (Wulandari & Takarini, 2024). These inconsistencies suggest that the relationships

among liquidity, leverage, activity ratio, and profitability remain underexplored, particularly in the context of food and beverage companies in Indonesia.

The research gap in this study lies in the limited understanding of how liquidity, leverage, and activity ratio jointly influence profitability, particularly in the food and beverage sector in Indonesia. While individual studies have examined the direct effects of these factors on profitability, the integrated framework connecting these factors in a single panel regression model remains underexplored. Additionally, most previous studies have focused on various sectors or other periods, leaving a significant gap in knowledge regarding the dynamics of profitability in food and beverage companies during the 2023–2025 post-pandemic period. Furthermore, empirical evidence on the determinants of profitability in Indonesia remains limited, particularly in the context of changing purchasing power, raw material inflation, and supply chain pressures.

The novelty of this research lies in several aspects. First, this study focuses on non-financial food and beverage companies during the 2023–2025 post-pandemic period, representing a unique context characterized by changing purchasing power, raw material inflation, supply chain pressures, and increasingly competitive operations. Second, this study develops an integrative model that simultaneously examines the influence of liquidity, leverage, and activity ratio on profitability, providing a more comprehensive understanding of the determinants of profitability in the food and beverage sector. Third, this study contributes to the limited empirical evidence on profitability in the food and beverage sector, providing insights into how financial ratios collectively influence profitability. Fourth, this study extends the application of Trade-off Theory to the context of profitability in Indonesia, validating theoretical predictions in an under-researched institutional context. Fifth, this study provides actionable insights for investors, managers, and academics in designing effective strategies to enhance profitability and business sustainability.

The purpose of this study is to examine the effect of liquidity, leverage, and activity ratio on profitability in food and beverage companies listed on the Indonesia Stock Exchange during the 2023–2025 period. Specifically, this research aims to analyze the effect of liquidity on profitability, analyze the effect of leverage on profitability, and analyze the effect of activity ratio on profitability. The choice of this goal was driven by the limited understanding of how these factors collectively influence profitability and the need for empirical evidence that can inform investors, managers, and academics in designing effective strategies to enhance profitability and business sustainability.

The contribution of this research is multifaceted. From a theoretical perspective, this research contributes to the enrichment of literature on financial management by proposing and testing an integrative model that links liquidity, leverage, and activity ratio with profitability, extending the application of Trade-off Theory to the context of profitability in Indonesia. The findings contribute to the understanding of how financial ratios influence profitability, providing a more nuanced theoretical framework for analyzing financial performance in the food and beverage sector. From a practical perspective, this study provides actionable insights for investors, managers, and academics in assessing and managing financial risk. For investors, the findings provide guidance on which factors should be considered in evaluating a company's profitability. For managers, the results offer insights into the importance of debt control and asset utilization in maintaining profitability. For academics, this study contributes to the growing body of literature on financial management, providing a foundation for future research on profitability.



2. Theoretical Background

2.1 Trade-off Theory

Trade-off theory explains that firms seek an optimal capital structure by balancing the benefits and costs of debt (Hackbarth et al., 2007). Debt provides potential tax advantages and additional funds for business development, but excessive debt increases interest expense, agency costs, and financial distress risk (Brigham & Houston, 2019; Ross et al., 2018). In this framework, leverage can improve profitability only when borrowed funds generate returns greater than their financing costs. In this study, liquidity, leverage, and activity ratio function as financial decisions that influence profitability through the balance between benefits and costs. Within the Trade-off Theory framework, liquidity reflects the firm's ability to meet short-term obligations without excessive idle assets, leverage reflects the optimal balance between debt benefits and financial distress costs, and activity ratio reflects the efficiency of asset utilization in generating sales. Accordingly, Trade-off Theory provides the theoretical foundation for this study by explaining how liquidity, leverage, and activity ratio influence profitability.

2.2 Liquidity

Liquidity refers to the firm's ability to meet short-term obligations using current assets (Hanafi & Halim, 2020). Adequate liquidity supports operating continuity and reduces default risk, but liquidity that is too high may indicate idle cash or inefficient working capital. Therefore, the effect of liquidity on profitability may be positive, negative, or insignificant depending on how effectively current assets are managed (Anton & Nucu, 2020; Jaworski & Czerwonka, 2021). From the perspective of Trade-off Theory, liquidity reflects the balance between the benefits of financial flexibility and the costs of idle assets (Hackbarth et al., 2007). In this study, liquidity is measured using the Current Ratio (CR), which compares current assets to current liabilities. Empirical studies also support this relationship, with studies by Gunawan and Ramli (2023) finding that liquidity significantly influences profitability.

2.3 Leverage

Leverage reflects the extent to which a company uses debt to finance its assets and operations (Nguyen et al., 2020). Debt can increase firm resources, but a high debt proportion may reduce profitability because interest expense absorbs operating income and limits managerial flexibility. Prior studies in non-financial and consumer goods firms have generally indicated a negative association between leverage and profitability (Gunawan & Ramli, 2023; Abo Alkomsan, 2024). From the perspective of Trade-off Theory, leverage reflects the optimal balance between debt benefits and financial distress costs (Hackbarth et al., 2007). In this study, leverage is measured using the Debt-to-Equity Ratio (DER), which compares total liabilities to total equity. Empirical studies also support this relationship, with studies by Nguyen et al. (2020) and Prekazi (2023) finding that leverage significantly influences profitability.

2.4 Activity Ratio

Activity ratio, proxied by total asset turnover, measures the effectiveness of asset utilization in generating sales (Alarussi & Alhaderi, 2021). Higher asset turnover indicates that management can convert assets into revenue more efficiently, which can increase profit generation. In food and beverage companies, efficient production, distribution, and inventory turnover are essential because products are related to daily



consumption and market competition (Marpaung & Hasibuan, 2021; Nurjanah et al., 2025). From the perspective of Trade-off Theory, activity ratio reflects the efficiency of asset utilization in generating returns that exceed the costs of financing (Hackbarth et al., 2007). In this study, activity ratio is measured using Total Asset Turnover (TATO), which compares net sales to total assets. Empirical studies also support this relationship, with studies by Widyasari and Adi (2023) finding that activity ratio significantly influences profitability.

2.5 Liquidity, Profitability

Liquidity refers to the firm's ability to meet short-term obligations using current assets (Hanafi & Halim, 2020). Adequate liquidity supports operating continuity and reduces default risk, but liquidity that is too high may indicate idle cash or inefficient working capital. Therefore, the effect of liquidity on profitability may be positive, negative, or insignificant depending on how effectively current assets are managed (Anton & Nucu, 2020; Jaworski & Czerwonka, 2021). From the perspective of Trade-off Theory, liquidity reflects the balance between the benefits of financial flexibility and the costs of idle assets (Hackbarth et al., 2007). In this study, liquidity is measured using the Current Ratio (CR), which compares current assets to current liabilities. Empirical evidence supports this relationship, with studies by Gunawan and Ramli (2023) finding that liquidity significantly influences profitability. However, other studies report contradictory findings, indicating that liquidity does not significantly affect profitability (Nurjanah et al., 2025; Abo Alkomsan, 2024). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H1: Liquidity has a significant effect on profitability.

2.6 Leverage, Profitability

Leverage reflects the extent to which a company uses debt to finance its assets and operations (Nguyen et al., 2020). Debt can increase firm resources, but a high debt proportion may reduce profitability because interest expense absorbs operating income and limits managerial flexibility. Prior studies in non-financial and consumer goods firms have generally indicated a negative association between leverage and profitability (Gunawan & Ramli, 2023; Abo Alkomsan, 2024). From the perspective of Trade-off Theory, leverage reflects the optimal balance between debt benefits and financial distress costs (Hackbarth et al., 2007). In this study, leverage is measured using the Debt-to-Equity Ratio (DER), which compares total liabilities to total equity. Empirical evidence supports this relationship, with studies by Nguyen et al. (2020) and Prekazi (2023) finding that leverage significantly influences profitability. However, other studies report contradictory findings, indicating that leverage has no significant effect on profitability (Wahyudi, 2024). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H2: Leverage has a significant effect on profitability.

2.7 Activity Ratio, Profitability

Activity ratio, proxied by total asset turnover, measures the effectiveness of asset utilization in generating sales (Alarussi & Alhaderi, 2021). Higher asset turnover indicates that management can convert assets into revenue more efficiently, which can increase profit generation. In food and beverage companies, efficient production, distribution, and inventory turnover are essential because products are related to daily



consumption and market competition (Marpaung & Hasibuan, 2021; Nurjanah et al., 2025). From the perspective of Trade-off Theory, activity ratio reflects the efficiency of asset utilization in generating returns that exceed the costs of financing (Hackbarth et al., 2007). In this study, activity ratio is measured using Total Asset Turnover (TATO), which compares net sales to total assets. Empirical evidence supports this relationship, with studies by Widyasari and Adi (2023) finding that activity ratio significantly influences profitability. However, other studies report contradictory findings, indicating that activity ratio does not significantly influence profitability (Wulandari & Takarini, 2024). Based on the theoretical explanation and empirical findings, the hypothesis proposed in this study is as follows:

H3: Activity ratio has a significant effect on profitability.

3. Methods

3.1 Research Design

This study used a quantitative causal-associative approach. The quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses using statistical analysis of numerical data derived from audited annual financial statements. The associative-causal research design enables the examination of causal relationships between independent variables (liquidity, leverage, and activity ratio) and the dependent variable (profitability). The object of the study was non-financial food and beverage companies listed on the Indonesia Stock Exchange. The observation period covered 2023–2025, so the data structure combined cross-section data from companies and time-series data from annual observations. For this reason, panel data regression was used as the main analytical technique (Gujarati & Porter, 2009).

3.2 Population and Sample

The population in this study consists of all food and beverage companies listed on the Indonesia Stock Exchange during the 2023–2025 period, totaling 102 companies. The sample was determined using purposive sampling with the following criteria: (1) companies listed in the food and beverage subsector on the Indonesia Stock Exchange; (2) companies that had not conducted an initial public offering after 2023; (3) companies that did not suffer losses during 2023–2025; and (4) companies that published complete audited annual financial statements consecutively during the observation period. Based on these criteria, 64 companies were selected, resulting in 192 firm-year observations (64 companies × 3 years), as presented in Table 1.

Table 1. Sample Determination

No	Criteria	Quantity
1	Food and beverage companies listed on IDX, 2023–2025	102
2	Companies that conducted IPO after 2023	(18)
3	Companies that suffered losses during 2023–2025	(14)
4	Companies with incomplete audited financial statements	(6)
5	Number of sample companies	64
6	Observation period (3 years × 64 companies)	192

Source: Processed data (2026)

3.3 Data Collection Techniques

The data collection technique used in this study is documentation. Documentation was carried out by collecting and reviewing audited annual financial statement data related to



profitability, liquidity, leverage, and activity ratio. Secondary data were used because the data had been previously published and officially documented (Ghozali, 2021). The data collection procedure involved several sequential steps: (1) identification of food and beverage companies listed on the IDX during the 2023–2025 period; (2) selection of companies meeting the predetermined purposive sampling criteria; (3) collection of profitability data from financial statements, specifically net income and total assets; (4) collection of liquidity data from financial statements, specifically current assets and current liabilities; (5) collection of leverage data from financial statements, specifically total liabilities and total equity; (6) collection of activity ratio data from financial statements, specifically net sales and total assets; and (7) documentation of all extracted data systematically organized into a panel dataset suitable for statistical analysis.

3.4 Operational Definition of Variables

Table 2. Operational Definition and Measurement of Variables

Variable	Definition	Measurement	Scale	Source
Profitability (Y)	The company's capacity to generate earnings from its assets and operating activities (Choudhury, 2024)	$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$	Ratio	Choudhury (2024)
Liquidity (X ₁)	The firm's ability to meet short-term obligations using current assets (Hanafi & Halim, 2020)	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	Ratio	Hanafi & Halim (2020)
Leverage (X ₂)	The extent to which a company uses debt to finance its assets and operations (Nguyen et al., 2020)	$DER = \frac{\text{Total Liabilities}}{\text{Total Equity}}$	Ratio	Nguyen et al. (2020)
Activity Ratio (X ₃)	The effectiveness of asset utilization in generating sales (Alarussi & Alhaderi, 2021)	$TATO = \frac{\text{Net Sales}}{\text{Total Assets}}$	Ratio	Alarussi & Alhaderi (2021)

Source: Developed for this research (2026)

3.5 Data Analysis Techniques

Data analysis in this study was conducted using panel data regression with the assistance of EViews 13 statistical software. Panel data regression is used because the data combine cross-section data from companies and time-series data from the 2023–2025 period. The analysis stages included descriptive statistics, panel data regression



estimation (Chow test, Hausman test, and Lagrange Multiplier test), classical assumption tests, coefficient of determination analysis, simultaneous F-test, and partial t-test.

Descriptive statistics were employed to describe the characteristics of the research data, including minimum and maximum values, average, and standard deviation of both the independent and dependent variables. The panel data regression estimation was conducted to determine the most appropriate model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The Chow test was used to compare CEM and FEM, the Hausman test was used to compare FEM and REM, and the Lagrange Multiplier test was used to compare CEM and REM. The classical assumption tests included normality, multicollinearity, heteroscedasticity, and autocorrelation tests.

The panel regression model used in this study was formulated as follows:

$$ROA_{it} = \alpha + \beta_1 CR_{it} + \beta_2 DER_{it} + \beta_3 TATO_{it} + \varepsilon_{it}$$

Where:

ROA = Profitability

α = Constant

β_1 – β_3 = Regression coefficients

CR = Liquidity (Current Ratio)

DER = Leverage (Debt-to-Equity Ratio)

TATO = Activity Ratio (Total Asset Turnover)

ε = Error term

Hypothesis testing was conducted using several methods. The partial t-test was used to determine the individual effect of each independent variable on profitability. The simultaneous F-test was used to examine the collective effect of independent variables on profitability. The coefficient of determination (adjusted R^2) was used to determine the model's ability to explain variations in profitability. All hypothesis tests were conducted at a significance level of 5% ($p < 0.05$).

4. Results and Discussion

4.1 Descriptive Statistics

Table 3. Descriptive Statistics of Research Variables

Statistic	CR	DER	TATO	ROA
Mean	3.226159	0.807099	0.994756	0.044527
Median	2.244517	0.822016	0.973587	0.044369
Maximum	48.31936	1.492165	2.222776	0.151465
Minimum	0.529477	0.012059	0.077323	−0.035480
Std. Dev.	4.286224	0.443678	0.286876	0.032959
Observations	192	192	192	192

Source: Processed data from EViews 13 (2026)

Table 3 presents the descriptive statistics for all research variables based on 192 observations from 64 companies across three years (2023–2025). The average profitability measured by ROA was 0.044527, with a minimum value of −0.035480 and a maximum value of 0.151465. The average CR was 3.226159, indicating relatively high liquidity in the sample. The mean DER was 0.807099, while the mean TATO was 0.994756. These statistics indicate that food and beverage firms had heterogeneous liquidity conditions, moderate debt composition, and relatively stable asset turnover during the observation period.



4.2 Panel Data Regression Estimation

Table 4. Panel Data Model Selection Results

Test	Comparison	Probability	Selected Model
Chow Test	CEM vs FEM	0.0008	Fixed Effect Model
Hausman Test	FEM vs REM	0.2609	Random Effect Model
Lagrange Multiplier Test	CEM vs REM	0.0016	Random Effect Model

Source: Processed data from EViews 13 (2026)

Table 4 presents the panel data model selection results. The Chow test initially indicated that the fixed effect model was preferable to the common effect model, with a probability value of 0.0008, which is less than 0.05. However, the Hausman test produced a probability value of 0.2609, which is greater than 0.05, suggesting that the random effect model was more appropriate than the fixed effect model. The Lagrange Multiplier test further confirmed that the random effect model was superior to the common effect model, with a probability value of 0.0016, which is less than 0.05. Based on these three tests, the study determines that the Random Effect Model (REM) is the most suitable for further analysis.

4.3 Classical Assumption Tests

Table 5. Classical Assumption Tests Conclusion

Test	P-Value	Significance Value	Conclusion
Normality	0.185	> 0.05	Normally Distributed
Multicollinearity	VIF < 10	< 10	No Multicollinearity
Heteroscedasticity	0.312	> 0.05	No Heteroscedasticity
Autocorrelation	DW = 1.945	du < DW < 4-du	No Autocorrelation

Source: Processed data from EViews 13 (2026)

Table 5 shows the classical assumption test results. The normality test's probability value of 0.185 is greater than 0.05, indicating that the residuals are normally distributed. The multicollinearity test's VIF values are all less than 10, indicating no multicollinearity among the independent variables. The heteroscedasticity test's probability value of 0.312 is greater than 0.05, indicating no heteroscedasticity in the regression model. The autocorrelation test's Durbin-Watson statistic of 1.945 falls between du and 4-du, indicating no autocorrelation. These results confirm that the regression model meets the classical assumptions required for panel data regression analysis.

4.4 Coefficient of Determination Testing (R²)

Table 6. R² Test Result

R-squared	0.641376
Adjusted R-squared	0.635653

Source: Processed data from EViews 13 (2026)

Table 6 shows the coefficient of determination results. The adjusted R-squared value of 0.635653 indicates that 63.56 percent of the variation in profitability (ROA) can be explained by liquidity, leverage, and activity ratio. The remaining 36.44 percent is attributed to factors outside the model, such as firm size, sales growth, raw material prices, inflation, and managerial efficiency.



4.5 Simultaneous Test (F-Test)

Table 7. F-Test Result

F-statistic	112.0752
Prob(F-statistic)	0.0000

Source: Processed data from EViews 13 (2026)

Table 7 shows the simultaneous test results. The F-test findings indicate an F-statistic of 112.0752 and a probability of 0.0000, which is below 0.05. This illustrates that liquidity, leverage, and activity ratio simultaneously influence profitability. Therefore, the panel data regression model is considered feasible for estimation.

4.6 Partial Test (t-Test)

Table 8. Partial Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.010217	0.006298	1.622198	0.1064
CR	-0.000110	0.000376	-0.278340	0.7811
DER	-0.045020	0.003208	-14.033600	0.0000
TATO	0.071353	0.005379	13.263890	0.0000

Source: Processed data from EViews 13 (2026)

Table 8 presents the partial test results. Based on the t-test results, it can be concluded that liquidity (CR) has a probability value of 0.7811, which is higher than 0.05, indicating that liquidity has no significant effect on profitability. Leverage (DER) has a probability value of 0.0000, which is lower than 0.05, with a regression coefficient of -0.045, indicating that leverage has a significant negative effect on profitability. Activity ratio (TATO) has a probability value of 0.0000, which is lower than 0.05, with a regression coefficient of 0.071, indicating that activity ratio has a significant positive effect on profitability.

4.7 Hypothesis Testing Summary

Table 9. Hypothesis Testing Summary

Hypothesis	Statement	Result
H1	Liquidity affects profitability	Rejected
H2	Leverage affects profitability	Accepted
H3	Activity ratio affects profitability	Accepted

Source: Processed data (2026)

Table 9 presents the hypothesis testing summary. Based on the partial test results, H1 is rejected because liquidity has no significant effect on profitability, with a probability value of 0.7811. H2 is accepted because leverage has a significant negative effect on profitability, with a probability value of 0.0000 and a regression coefficient of -0.045. H3 is accepted because activity ratio has a significant positive effect on profitability, with a probability value of 0.0000 and a regression coefficient of 0.071.

4.8 Discussion

4.8.1 The Effect of Liquidity on Profitability

The results show that liquidity has no significant effect on profitability ($B = -0.000110$; $p = 0.781$), indicating that the ability to meet short-term liabilities did not directly determine profitability. This finding is consistent with Nurjanah et al. (2025) and Abo Alkomsan (2024), who also concluded that liquidity does not significantly affect profitability. From the perspective of Trade-off Theory, high liquidity may protect firms



from short-term risk, but excessive current assets can also become idle assets that do not generate income (Hackbarth et al., 2007). The finding implies that in the food and beverage sector, liquidity is not a primary determinant of profitability, as the availability of current assets alone does not directly increase profit unless those assets are managed productively. This result differs from Gunawan and Ramli (2023), who found a significant relationship between liquidity and profitability.

4.8.2 The Effect of Leverage on Profitability

The results show that leverage has a significant negative effect on profitability ($B = -0.045$; $p = 0.000$), indicating that higher reliance on debt reduced the ability of food and beverage companies to generate returns on assets. This finding supports Trade-off Theory because debt beyond the optimal level increases fixed financial obligations and interest expenses, thereby reducing net profit (Hackbarth et al., 2007). This result is in line with Nguyen et al. (2020), Gunawan and Ramli (2023), and Waruwu and Palupiningtyas (2025), who also emphasized the adverse effect of high debt on profitability. The finding implies that in the food and beverage sector, excessive debt usage can reduce earnings through higher financial burdens, highlighting the importance of maintaining an optimal capital structure that balances the benefits and costs of debt.

4.8.3 The Effect of Activity Ratio on Profitability

The results show that activity ratio has a significant positive effect on profitability ($B = 0.071$; $p = 0.000$), indicating that firms with better asset turnover were more capable of generating profit. In the food and beverage industry, efficient use of assets reflects the ability to convert production capacity, inventory, and distribution networks into sales. This finding is consistent with Alarussi and Alhaderi (2021), Marpaung and Hasibuan (2021), and Nurjanah et al. (2025), who concluded that effective asset utilization contributes to higher profitability. From the perspective of Trade-off Theory, activity ratio reflects the efficiency of asset utilization in generating returns that exceed the costs of financing (Hackbarth et al., 2007). The finding implies that in the food and beverage sector, improving asset turnover through efficient production and distribution can enhance profitability and business sustainability.

5. Conclusion

This study aimed to examine the effect of liquidity, leverage, and activity ratio on profitability in non-financial food and beverage companies listed on the Indonesia Stock Exchange during the 2023–2025 period. Using a quantitative approach with panel data regression on 192 firm-year observations from 64 companies selected through purposive sampling, the study successfully tested the proposed hypotheses.

The results indicate that liquidity has no significant effect on profitability, with a regression coefficient of -0.000110 and a significance value of 0.781 , indicating that H1 is not supported. This result implies that the availability of current assets alone does not directly increase profit unless those assets are managed productively. Leverage has a significant negative effect on profitability, with a regression coefficient of -0.045 and a significance value of 0.000 , indicating that H2 is supported. Excessive debt usage can reduce earnings through higher financial burdens, as interest expenses absorb operating income and limit managerial flexibility.

Activity ratio has a significant positive effect on profitability, with a regression coefficient of 0.071 and a significance value of 0.000 , indicating that H3 is supported.



More efficient asset utilization improves the ability of companies to generate income, as efficient use of assets reflects the ability to convert production capacity, inventory, and distribution networks into sales. The simultaneous test using the F-test showed a significance value of 0.000, indicating that liquidity, leverage, and activity ratio collectively have a significant effect on profitability. The adjusted coefficient of determination indicated that 63.56 percent of the variation in profitability was explained by the model, while the remaining 36.44 percent was attributed to factors outside the model.

The theoretical implications of this study extend the application of Trade-off Theory to the context of profitability in Indonesia. The finding that liquidity does not significantly influence profitability suggests that the availability of current assets alone does not directly increase profit unless those assets are managed productively. The finding that leverage significantly influences profitability supports Trade-off Theory's emphasis on the optimal balance between debt benefits and financial distress costs. The finding that activity ratio significantly influences profitability supports the argument that efficient asset utilization contributes to higher profitability. This study also contributes to the limited empirical evidence on the determinants of profitability in the food and beverage sector, providing insights into how financial ratios collectively influence profitability.

Based on these findings, several recommendations can be proposed. For investors, the findings suggest that leverage and activity ratio should be considered as important indicators when evaluating a company's profitability. For managers, the results suggest that maintaining adequate liquidity while avoiding idle current assets, controlling the level of debt to prevent excessive financing costs, and improving asset turnover through efficient production and distribution can enhance profitability. For academics, this study contributes to the growing body of literature on financial management, providing a foundation for future research on profitability.

This study has several limitations that should be acknowledged. First, the study focuses only on non-financial food and beverage companies listed on the Indonesia Stock Exchange, which may limit the generalizability of the findings to other sectors or industries. Second, the study uses a three-year observation period (2023–2025), which may not capture long-term changes in profitability. Third, the sample size is relatively limited (64 companies, 192 observations) due to strict sampling criteria, which may limit the statistical power of the analysis. Fourth, the study examines only a limited set of financial variables, without considering other potential determinants of profitability such as firm size, sales growth, or macroeconomic factors. Fifth, the model's explanatory power is moderate, with an adjusted R-squared value of 0.636, indicating that other factors not included in the model may still influence profitability.

For future research, it is recommended to expand the scope of study by involving other sectors or industries to improve the generalizability of the findings. Future studies may also extend the observation period to capture long-term changes in profitability and increase the sample size to enhance statistical power. Additionally, future research may incorporate additional variables, such as firm size, sales growth, inflation, operating cost efficiency, or macroeconomic indicators, to provide a more comprehensive understanding of the determinants of profitability. Researchers should also consider employing qualitative or mixed-method approaches to gain deeper insights into the challenges and effectiveness of financial management practices in the food and beverage sector.

In conclusion, this study contributes to the growing body of literature on financial management by providing empirical evidence on the determinants of profitability in food



and beverage companies in Indonesia. The findings suggest that leverage and activity ratio significantly influence profitability, while liquidity does not. As Indonesia continues to strengthen its capital market and financial management practices, understanding these factors becomes increasingly important for developing effective strategies to enhance profitability and business sustainability.

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