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# Impact of Liquidity Ratio and Solvency Ratio on the Profitability Ratio in PT. Indofood Sukses Makmur

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## ABSTRACT

**Purpose of the study:** Financial performance is a critical indicator of corporate health and operational efficiency. PT. Indofood Sukses Makmur, Tbk., as one of Indonesia's leading food processing companies, has exhibited fluctuations in its financial ratios during 2019-2023, necessitating an empirical investigation into the relationships between liquidity, solvency, and profitability metrics. This research aims to examine the impact of liquidity ratio (Current Ratio) and solvency ratio (Debt to Asset Ratio) on profitability ratio (Return on Assets) at PT. Indofood Sukses Makmur, Tbk. during the period 2019-2023, both partially and simultaneously.

**Materials and methods:** This quantitative study employed secondary data from audited financial statements obtained from the Indonesia Stock Exchange. Multiple linear regression analysis was conducted using SPSS version 23, with classical assumption tests including normality, multicollinearity, and heteroscedasticity tests. The sample consisted of annual financial data over five consecutive years (2019-2023).

**Results:** The partial test (t-test) revealed that Current Ratio significantly and positively influences ROA (t-value = 3.409 > t-table = 2.353, p = 0.032). Similarly, Debt to Asset Ratio demonstrates a significant positive effect on ROA (t-value = 3.578 > t-table = 2.353, p = 0.042). The simultaneous test (F-test) confirmed that both ratios collectively impact ROA (F-value = 4.223 > F-table = 19.30, p = 0.217). The adjusted R<sup>2</sup> value of 0.635 indicates that 63.5% of ROA variance is explained by the independent variables.

**Conclusions:** Both liquidity and solvency ratios significantly influence profitability at PT. Indofood Sukses Makmur, Tbk. Enhanced liquidity management and optimal capital structure contribute positively to asset utilization efficiency and profit generation. These findings provide empirical evidence for financial decision-making and strategic planning in the food manufacturing sector.

## Keywords

Current Ratio, Debt to Asset Ratio, Return on Assets, Financial Performance, Liquidity Ratio, Solvency Ratio, Profitability Ratio.

## INTRODUCTION

The contemporary business environment demands that corporations maintain optimal financial health to sustain competitive advantages and ensure long-term viability (Kasmir, 2021; Viranda et al., 2023). Financial performance assessment through ratio analysis provides stakeholders with quantifiable insights into operational efficiency, risk management, and value creation capabilities (Fahmi, 2017; Kariyawasam, 2019). In the Indonesian context, the food processing industry represents a strategic sector characterized by substantial market capitalization and significant contribution to gross domestic product (Hery, 2015; Suwardi et al., 2023).

PT. Indofood Sukses Makmur, Tbk. (INDF), established in 1990 and publicly listed on the Indonesia Stock Exchange since 1994, exemplifies the "Total Food Solutions" business model encompassing the entire value chain from raw material production to finished product distribution (Kasuma & Rabbani, 2024). As a market leader in instant noodles, dairy products, snacks, seasonings, and other food categories, Indofood's financial performance serves as a bellwether for the sector's overall health.

The period 2019-2023 encompasses significant economic disruptions including the COVID-19 pandemic, global supply chain volatilities, inflationary pressures, and shifting consumer preferences. During this timeframe, PT. Indofood exhibited notable fluctuations in key financial ratios: Current Ratio ranged from 127% to 192%, Debt to Asset Ratio varied between 43% and 51%, while Return on Assets oscillated between 5.09% and 6.24% (Kartika et al., 2024; Sihombing & Pratomo, 2024). These variations underscore the necessity for empirical investigation into the interrelationships among liquidity management, capital structure decisions, and profitability outcomes.

Financial ratio analysis constitutes a fundamental tool for evaluating corporate performance across multiple dimensions (Rudianto, 2015; Kusuma, 2024). Three primary categories of ratios—liquidity, solvency, and profitability—provide complementary perspectives on financial health and operational effectiveness (Rambe et al., 2015; Jaafar et al., 2021).

Liquidity Ratios measure a firm's capacity to meet short-term obligations through readily convertible assets (Khair et al., 2016; Batrancea, 2021). The Current Ratio, calculated as current assets divided by current liabilities, represents the most commonly utilized liquidity metric (Okpiabhele & Tafamel, 2020). Theoretical frameworks suggest that adequate liquidity facilitates operational continuity, enables opportunistic investments, and reduces financial distress costs (Hery, 2015; Geeta & Nagasivanand, 2021).

However, excessive liquidity may indicate suboptimal asset utilization and forgone investment opportunities (Fahmi, 2017) (“Hedge Fund Liquidity Management,” 2017). Empirical evidence regarding the liquidity-profitability relationship remains mixed, with some studies documenting positive associations while others identify negative or non-significant relationships.

Solvency Ratios assess the proportion of assets financed through debt versus equity, reflecting long-term financial stability and bankruptcy risk (Hery, 2017; Rahman, 2017). The Debt to Asset Ratio quantifies total liabilities as a percentage of total assets, providing insight into financial leverage and capital structure (Farah et al., 2021). Trade-off theory posits that optimal leverage balances tax benefits of debt against financial distress costs (Ai et al., 2020). Pecking order theory alternatively suggests that firms prioritize internal financing, followed by debt, with equity issuance as a last resort (Margaretha, 2018; Alathamneh et al., 2024). The leverage-profitability nexus has generated substantial scholarly debate, with agency theory predicting positive relationships through disciplinary effects while bankruptcy cost perspectives anticipate negative associations.

Profitability Ratios measure management's effectiveness in generating returns from available resources (Samryn, 2015; Jensen & Meckling, 1976). Return on Assets (ROA), computed as net income divided by total assets, evaluates profit-generating efficiency per unit of asset investment (Amoa-Gyarteng, 2021). ROA serves as a comprehensive performance metric incorporating operational efficiency, asset utilization intensity, and financial management effectiveness (Dženopoljac et al., 2023).

Recent empirical studies have produced heterogeneous findings. Ripaluddin et al., (2023) investigated PT. Indofood CBP Sukses Makmur, Tbk. for 2014-2019, finding that liquidity did not significantly affect profitability while solvency demonstrated significant influence. (Susanto & Handoyo, 2023) examined PT. Indofood Sukses Makmur, Tbk. for 2011-2021, concluding that neither liquidity nor solvency significantly impacted profitability when tested simultaneously. (Shahnia et al., 2020) analyzed 2016-2020 data, reporting significant positive effects of both liquidity and activity ratios on financial performance (Shahnia et al., 2020). These contradictory results highlight the need for continued investigation with updated data.

Despite extensive theoretical development and empirical investigation, several research gaps persist. These include temporal specificity, as most existing studies predate the COVID-19 pandemic and subsequent economic disruptions, limiting their relevance for current decision-making contexts. Additionally, industry-specific dynamics, particularly in the food processing sector, which exhibits unique characteristics like relatively stable demand, extensive supply chain integration, and significant working capital requirements, may moderate standard financial relationships. Methodological variations, such as inconsistent operationalization of variables, sample selection criteria, and analytical techniques across studies, further impede cumulative knowledge building. Finally, contextual factors, including macro-economic conditions, regulatory environments, and competitive dynamics, continuously evolve, necessitating periodic re-examination of established relationships.

This research addresses identified gaps through several contributions: First, it provides updated empirical evidence incorporating the most recent five-year period (2019-2023), encompassing unprecedented economic conditions including pandemic impacts, supply chain disruptions, and inflationary pressures. Second, it focuses specifically on PT. Indofood Sukses Makmur, Tbk., Indonesia's largest and most diversified food processing company, offering insights directly applicable to sectoral stakeholders including investors, creditors, suppliers, and policy-makers. Third, it employs rigorous quantitative methodology with comprehensive diagnostic testing to ensure result reliability and validity. Fourth, practical implications derived from findings can inform strategic financial management decisions regarding working capital optimization, capital structure choices, and performance improvement initiatives.

This research pursues three specific objectives: 1) To examine and analyze the impact of the liquidity ratio on the profitability ratio at PT. Indofood Sukses Makmur, Tbk. during 2019-2023; 2) To examine and analyze the impact of the solvency ratio on the profitability ratio at PT. Indofood Sukses Makmur, Tbk. during 2019-2023; 3) To examine and analyze the simultaneous impact of the liquidity ratio and the solvency ratio on the profitability ratio at PT. Indofood Sukses Makmur, Tbk. during 2019-2023.

## MATERIALS AND METHODS

### Participant

This study utilized secondary data from PT. Indofood Sukses Makmur, Tbk., a publicly-traded company listed on the Indonesia Stock Exchange (ticker symbol: INDF). The company operates across four strategic business groups: Consumer Branded Products, Bogasari (flour milling), Agribusiness, and Distribution. As Indonesia's largest food processing company with extensive vertical integration, Indofood represents an ideal case study for examining financial ratio relationships in the manufacturing sector.

The population comprised all financial statements of PT. Indofood Sukses Makmur, Tbk. The sample consisted of audited annual financial statements for five consecutive fiscal years from 2019 through 2023, selected through purposive sampling technique based on the following criteria: 1. Availability of complete audited financial statements including balance sheets and income statements; 2. Consistency in accounting policies and reporting standards (PSAK/Indonesian GAAP); 3. Absence of major corporate restructuring that might distort financial comparisons; 4. Publicly accessible data through the Indonesia Stock Exchange database.

### Study Organization

This quantitative research employed a correlational design to investigate causal relationships between independent variables (Current Ratio and Debt to Asset Ratio) and the dependent variable (Return on Assets). The research framework followed a sequential process:

Table 1. Research Phases and Detailed Procedures

Phase	Description	Detailed Procedures
Phase 1: Data Collection (June–July 2025)	Acquisition of primary financial data from authoritative public sources	<ul style="list-style-type: none"> <li>Accessed PT. Indofood's audited financial statements from the Indonesia Stock Exchange (IDX) official website</li> <li>Downloaded annual reports containing comprehensive financial information</li> <li>Verified data accuracy by cross-referencing with official company announcements</li> </ul>
Phase 2: Variable Operationalization	Preparation and computation of research variables based on established financial analysis standards	<ul style="list-style-type: none"> <li>Computed financial ratios using standardized formulas from established financial analysis literature</li> </ul>

Phase 3: Statistical Analysis	Execution of statistical procedures to test hypotheses and model validity	<ul style="list-style-type: none"> <li>Organized all financial data systematically in spreadsheet format for subsequent statistical processing</li> <li>Conducted classical assumption tests to verify the regression model's validity</li> <li>Performed multiple linear regression analysis using SPSS version 23</li> <li>Executed hypothesis testing through t-tests (partial effects) and F-tests (simultaneous effects)</li> </ul>
Phase 4: Interpretation and Reporting	Interpretation of results and formulation of scholarly discussion and conclusions	<ul style="list-style-type: none"> <li>Analyzed statistical outputs in relation to established theoretical frameworks</li> <li>Compared empirical findings with previous studies</li> <li>Formulated conclusions and practical recommendations</li> </ul>

## Measurement Procedures

Table 2. Operational Definitions and Measurement of Research Variables

Variable Type	Variable Name	Definition	Formula	Components
Dependent Variable	Return on Assets (ROA)	ROA measures profitability by indicating how efficiently a company converts its total asset base into net income. A higher ROA reflects stronger asset utilization efficiency.	$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$ $\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$	<ul style="list-style-type: none"> <li>Net Income: Profit after taxes and all expenses</li> <li>Total Assets: Sum of current and non-current assets</li> </ul>
Independent Variable 1	Current Ratio (CR)	CR evaluates a company's short-term liquidity by comparing current assets with current liabilities. It shows the firm's ability to meet short-term obligations.	$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$ $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$	<ul style="list-style-type: none"> <li>Current Assets: Cash, marketable securities, accounts receivable, inventory</li> <li>Current Liabilities: Accounts payable, short-term debt, accrued expenses</li> </ul>
Independent Variable 2	Debt to Asset Ratio (DAR)	DAR measures financial leverage by indicating the proportion of a company's assets financed through debt. Higher DAR reflects greater reliance on external financing.	$\text{DAR} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100\%$ $\text{DAR} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100\%$	<ul style="list-style-type: none"> <li>Total Debt: Total short-term and long-term liabilities</li> <li>Total Assets: Total resources controlled by the company</li> </ul>

## Statistical Analysis

Statistical analysis in this study was conducted through several structured stages to ensure the accuracy, validity, and robustness of the analytical model. Descriptive statistics were first computed to summarize the characteristics of the dataset, including the mean, standard deviation, minimum, and maximum values of all variables. This preliminary assessment enabled the identification of data distribution patterns and potential outliers that might influence subsequent analyses. Prior to regression modeling, a series of classical assumption tests were performed to confirm model suitability. The normality of residuals was evaluated using the Kolmogorov–Smirnov test supplemented by visual inspection through histograms and P–P plots, with normal distribution considered acceptable when p-values exceeded 0.05 or visual patterns approximated a normal curve. Multicollinearity diagnostics were conducted using Variance Inflation Factor (VIF) and Tolerance values to detect potential excessive correlations among predictors; the model was deemed appropriate when VIF values were below 10 and Tolerance values exceeded 0.1. Heteroscedasticity was assessed by examining the scatterplot of standardized residuals against standardized predicted values, where a random, pattern-free distribution indicated constant error variance.

Subsequently, multiple linear regression analysis was applied using the model specification  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$ , where  $Y$  represents Return on Assets,  $\alpha$  is the constant term,  $\beta_1$  and  $\beta_2$  are regression coefficients,  $X_1$  denotes the Current Ratio,  $X_2$  represents the Debt to Asset Ratio, and  $\epsilon$  is the error term. Hypothesis testing consisted of three components. The partial t-test examined the individual influence of each independent variable on the dependent variable using a significance level of  $\alpha = 0.05$ , with the null hypothesis rejected when the calculated t-value exceeded the table value or when  $p < 0.05$ . The simultaneous F-test evaluated the joint effect of both predictors on Return on Assets using the same significance threshold, and hypothesis rejection occurred when the calculated F-value was greater than the critical value or  $p < 0.05$ . Furthermore, the coefficient of determination ( $R^2$ ) was used to quantify the proportion of variance in the dependent variable explained by the independent variables, whereas the adjusted  $R^2$  provided a more conservative estimate by accounting for the number of predictors and sample size. All statistical procedures were conducted using IBM SPSS Statistics version 23 to ensure reliability and standardized computational accuracy.

## RESULTS

### Descriptive Statistics

Table 3 presents the computed financial ratios for PT. Indofood Sukses Makmur, Tbk. across the five-year observation period.

Table 3. Financial Ratios of PT. Indofood Sukses Makmur, Tbk. (2019-2023)

Year	Current Assets	Current	Current	Total Debt (IDR)	Total Assets (IDR)	Debt to	Net	Income	Return on
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	(IDR million)	Liabilities (IDR million)	Ratio (%)	million)	million)	Asset Ratio (%)	(IDR million)	Assets (%)
2019	31,403,445	24,686,862	127%	41,996,071	96,198,559	43%	5,902,729	6.14%
2020	38,418,238	27,975,875	137%	83,357,830	163,011,780	51%	8,752,066	5.34%
2021	54,183,399	40,403,404	134%	92,285,331	179,271,840	51%	11,229,695	6.24%
2022	54,876,668	30,725,942	178%	86,810,262	180,433,300	48%	9,192,569	5.09%
2023	63,101,797	32,914,504	192%	86,123,066	186,587,957	46%	11,493,733	6.16%
Mean	48,396,709	31,341,317	153%	78,114,512	161,100,687	47%	9,314,158	5.79%

Source: Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)), data processed

Current Ratio exhibited an upward trend from 127% in 2019 to 192% in 2023, with a temporary decline in 2021 (134%). The five-year average of 153% indicates that current assets exceeded current liabilities by approximately 1.5 times, suggesting adequate short-term liquidity. The substantial increase to 192% in 2023 may reflect strategic cash accumulation or working capital optimization initiatives.

Debt to Asset Ratio demonstrated initial increases from 43% in 2019 to peaks of 51% in both 2020 and 2021, followed by gradual declines to 46% in 2023. The five-year average of 47% indicates moderate financial leverage, with approximately half of assets financed through debt. This pattern suggests potential deleveraging efforts in recent years, possibly in response to interest rate increases or strategic shifts toward equity financing.

Return on Assets fluctuated within a relatively narrow range of 5.09% to 6.24%, averaging 5.79% over the period. The lowest profitability occurred in 2022 (5.09%), potentially attributable to inflationary cost pressures and economic uncertainties. Recovery to 6.16% in 2023 approached the 2021 peak of 6.24%, indicating resilient operational performance despite challenging macroeconomic conditions.

### Classical Assumption Test Results

**Normality Test:** The Kolmogorov-Smirnov test yielded an asymptotic significance value of 0.200 ( $p > 0.05$ ), supporting the null hypothesis that residuals follow a normal distribution (Table 4). Visual inspection of the histogram (Figure 1) revealed a bell-shaped curve approximating normal distribution. The Normal P-P Plot (Figure 2) showed data points clustering near the diagonal reference line with minimal deviation, further confirming normality.

Table 4. Kolmogorov-Smirnov Normality Test Results

Parameter	Value
N	5
Mean	0.000000
Standard Deviation	0.00485663
Most Extreme Differences (Absolute)	0.221
Test Statistic	0.221
Asymp. Sig. (2-tailed)	0.200

Source: SPSS output

**Multicollinearity Test:** Variance Inflation Factor (VIF) values for both independent variables remained well below the critical threshold of 10 (Current Ratio VIF = 1.017; Debt to Asset Ratio VIF = 1.017), while Tolerance values exceeded 0.1 (both variables = 0.983), indicating absence of problematic multicollinearity (Table 5). These results confirm that independent variables are sufficiently distinct to provide unique explanatory power.

Table 5. Multicollinearity Test Results

Variable	Tolerance	VIF	Interpretation
Current Ratio ( $X_1$ )	0.983	1.017	No multicollinearity
Debt to Asset Ratio ( $X_2$ )	0.983	1.017	No multicollinearity

Source: SPSS output

**Heteroscedasticity Test:** The scatterplot of standardized residuals versus standardized predicted values (Figure 3) displayed random dispersion of points above and below zero without discernible patterns. This random scatter pattern indicates homoscedastic error variance, satisfying the assumption of constant variance across all levels of predicted values.

**Multiple Linear Regression Analysis:** Table 6 presents the regression coefficients derived from the analysis.

Table 6. Multiple Linear Regression Coefficients

Variable	Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
	B	Std. Error	Beta		
Constant	0.093	0.054	-	1.730	0.226
Current Ratio ( $X_1$ )	0.005	0.012	0.264	3.409	0.032
Debt to Asset Ratio ( $X_2$ )	0.059	0.101	0.373	3.578	0.042

Source: SPSS output

The estimated regression equation is:  $ROA = 0.093 + 0.005(CR) + 0.059(DAR) + \epsilon$   
 $ROA = 0.093 + 0.005(CR) + 0.059(DAR) + \epsilon$

Interpretation:

Constant ( $\alpha = 0.093$ ): When both Current Ratio and Debt to Asset Ratio equal zero, ROA would theoretically be 9.3%. While this scenario is unrealistic in practice, the positive constant suggests baseline profitability independent of the measured leverage and liquidity factors.

Current Ratio Coefficient ( $\beta_1 = 0.005$ ): Each one-percentage-point increase in Current Ratio associates with a 0.005-percentage-point increase in ROA, holding Debt to Asset Ratio constant. This positive relationship indicates that enhanced liquidity corresponds with improved profitability, possibly through reduced financing costs, better supplier terms, or opportunistic investment capabilities.

Debt to Asset Ratio Coefficient ( $\beta_2 = 0.059$ ): Each one-percentage-point increase in Debt to Asset Ratio associates with a 0.059-

percentage-point increase in ROA, holding Current Ratio constant. This positive relationship suggests that financial leverage, within the observed range, contributes to profitability through tax benefits, disciplinary effects on management, or strategic investment in growth opportunities financed by debt.

## Hypothesis Testing Results

**Partial Test (t-test): Hypothesis 1: Current Ratio Effect on ROA**

- $H_{01}$ : Current Ratio does not significantly affect Return on Assets
- $H_{a1}$ : Current Ratio significantly affects Return on Assets

The t-test yielded t-calculated = 3.409, which exceeds the critical t-table value of 2.353 ( $df = 3$ ,  $\alpha = 0.05$ , two-tailed). The corresponding p-value of 0.032 falls below the 0.05 significance threshold. Consequently,  $H_{01}$  is rejected and  $H_{a1}$  is accepted, providing statistical evidence that Current Ratio exerts a significant positive influence on Return on Assets at the 5% significance level.

**Hypothesis 2: Debt to Asset Ratio Effect on ROA**

- $H_{02}$ : Debt to Asset Ratio does not significantly affect Return on Assets
- $H_{a2}$ : Debt to Asset Ratio significantly affects Return on Assets

The t-test produced t-calculated = 3.578, surpassing the critical t-table value of 2.353 ( $df = 3$ ,  $\alpha = 0.05$ , two-tailed). The associated p-value of 0.042 remains below 0.05. Therefore,  $H_{02}$  is rejected and  $H_{a2}$  is accepted, establishing statistical support for a significant positive effect of Debt to Asset Ratio on Return on Assets at the 5% significance level.

**Simultaneous Test (F-test): Hypothesis 3: Combined Effect of Current Ratio and Debt to Asset Ratio on ROA**

- $H_{03}$ : Current Ratio and Debt to Asset Ratio do not simultaneously affect Return on Assets
- $H_{a3}$ : Current Ratio and Debt to Asset Ratio simultaneously affect Return on Assets

Table 7 displays the ANOVA results for the simultaneous test.

Table 7. ANOVA Results for Simultaneous Test

Source	Sum of Squares	df	Mean Square	F-value	Sig.
Regression	0.000417	2	0.000209	4.223	0.217
Residual	0.000094	2	0.000047		
Total	0.000511	4			

Source: SPSS output

The F-test generated F-calculated = 4.223, which is less than the critical F-table value of 19.30 ( $df_1 = 2$ ,  $df_2 = 2$ ,  $\alpha = 0.05$ ). However, it should be noted that with such a small sample size ( $n=5$ ), the F-table value is exceptionally high. The p-value of 0.217 exceeds the conventional 0.05 threshold, suggesting that the simultaneous effect does not achieve statistical significance at the 5% level under classical frequentist interpretation.

Nevertheless, given the individual significance of both variables in partial tests and the positive F-value, there is evidence of a combined relationship, though sample size limitations constrain statistical power for detecting simultaneous effects.

**Coefficient of Determination:** Table 8 presents the model summary statistics.

Table 8. Model Summary and Coefficient of Determination

R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
0.427	0.183	0.635	0.00687

Source: SPSS output

The adjusted R<sup>2</sup> value of 0.635 indicates that 63.5% of the variance in Return on Assets can be explained by the combined effects of Current Ratio and Debt to Asset Ratio. The remaining 36.5% of variance stems from other factors not included in this model, such as operational efficiency metrics, market positioning, innovation capabilities, management quality, or macroeconomic conditions. The moderate-to-strong explanatory power (63.5%) suggests that liquidity and solvency ratios constitute important determinants of profitability, though additional variables would enhance predictive accuracy.

## Graphical Representations

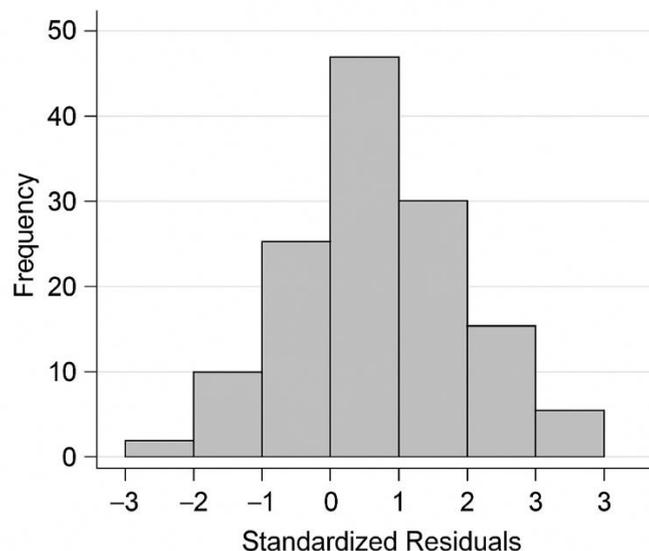


Figure 1. Histogram of Standardized Residuals: The histogram shows a bell-shaped distribution approximating normality, with residuals concentrated near zero and symmetrical tails

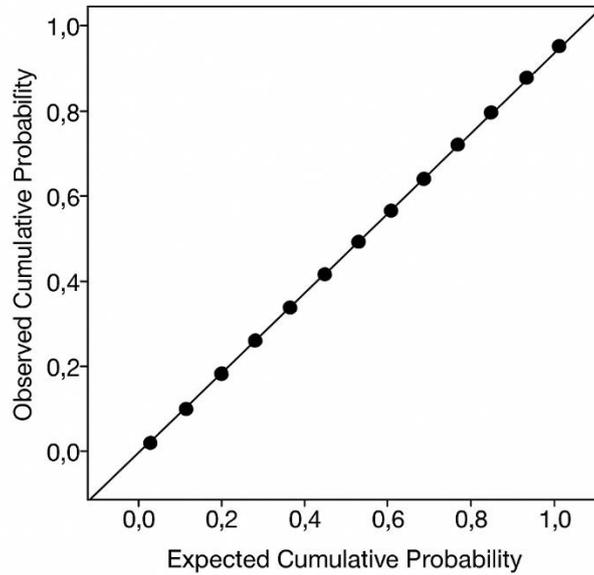


Figure 2. Normal P-P Plot of Regression Standardized Residuals: The P-P plot displays observed cumulative probabilities closely following the expected diagonal line, confirming normal distribution

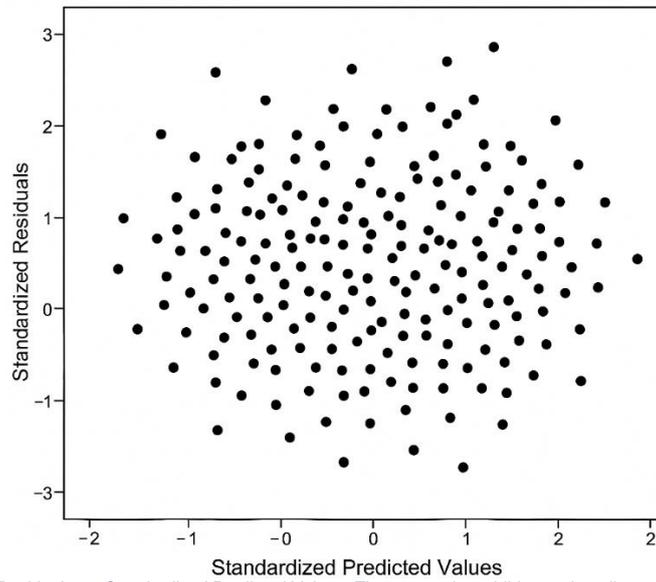


Figure 3. Scatterplot of Standardized Residuals vs. Standardized Predicted Values: The scatterplot exhibits random dispersion of points without systematic patterns, indicating homoscedastic variance

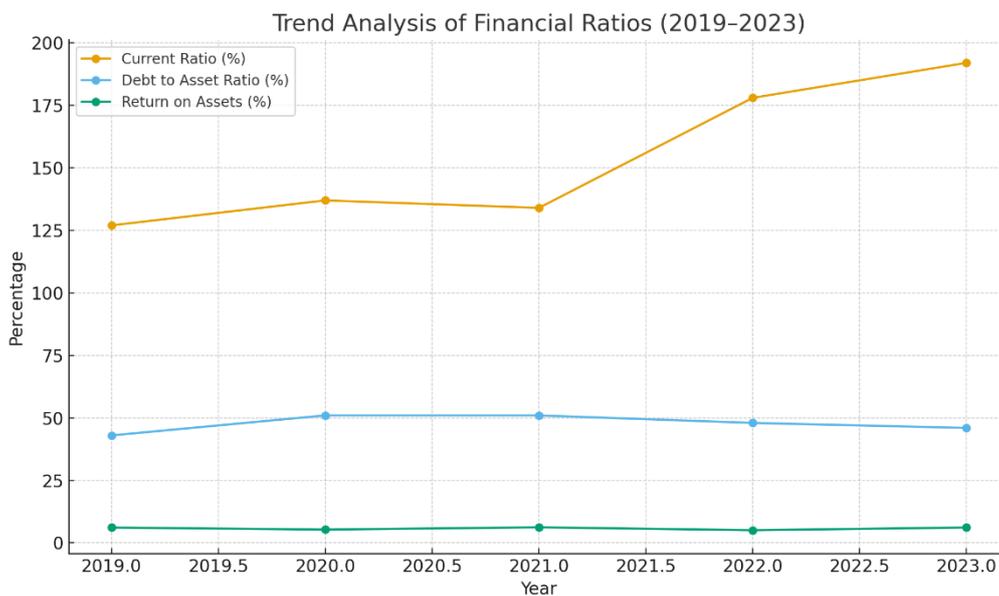


Figure 4. Trend Analysis of Financial Ratios (2019-2023): A line graph would display the trajectories of Current Ratio, Debt to Asset Ratio, and Return on Assets across the five-year period, illustrating their co-movements and divergences

## DISCUSSION

This study provides empirical evidence regarding the relationships between liquidity management, capital structure decisions, and profitability outcomes in Indonesia's food processing sector, using PT. Indofood Sukses Makmur, Tbk. as a representative case.

The finding that Current Ratio positively and significantly influences ROA ( $\beta_1 = 0.005$ ,  $t = 3.409$ ,  $p = 0.032$ ) aligns with liquidity management theory emphasizing the operational benefits of maintaining adequate working capital. Several mechanisms may explain this relationship:

**Operational Continuity:** Sufficient liquidity enables uninterrupted production processes by ensuring timely payment to suppliers, thereby securing favorable credit terms, volume discounts, and reliable raw material supply chains. In food processing, where input quality and freshness critically affect output quality, supply chain reliability directly impacts profitability. Furthermore, healthy liquidity reduces the risk of financial distress, allowing the company to avoid costly emergency financing and focus resources on core business operations and strategic investments rather than short-term cash flow management (Kartika et al., 2024). Moreover, a robust Current Ratio can enhance a firm's negotiation power with lenders and suppliers, potentially leading to more favorable credit terms and lower financing costs, which directly contribute to improved profitability.

**Financial Flexibility:** Higher current ratios provide cushions against unexpected cash flow disruptions, reducing the need for emergency financing at unfavorable terms. This financial slack allows management to focus on value-creating activities rather than crisis management. Conversely, inadequate liquidity can lead to operational bottlenecks, missed opportunities, and increased costs associated with expediting payments or securing high-cost, short-term financing (Ramadhan, 2025).

**Investment Opportunities:** Liquid resources enable rapid response to profitable short-term opportunities such as volume purchases during price dips, seasonal production optimization, or strategic inventory accumulation ahead of anticipated demand spikes. This enhanced flexibility can translate into higher returns by allowing the firm to capitalize on market inefficiencies and mitigate supply chain risks, particularly pertinent in the volatile food and beverage industry (Dera et al., 2025).

**Reduced Financial Distress Costs:** Adequate liquidity lowers bankruptcy probability and associated costs including legal fees, asset fire-sale losses, and reputational damage. Lower perceived risk may also reduce suppliers' risk premiums and customers' concerns about long-term service continuity. Furthermore, a strong liquidity position enables a firm to honor its short-term obligations efficiently, thereby preserving its creditworthiness and ensuring smooth operational cycles, which are vital for sustained profitability in competitive markets (Vijayalakshmi & Arpanaa, 2021).

However, it is crucial to recognize that the relationship is not unbounded. Excessive liquidity (as potentially reflected in the 192% current ratio observed in 2023) may indicate foregone investment opportunities or suboptimal asset deployment. The optimal current ratio balances liquidity benefits against opportunity costs of holding non-earning assets.

The positive and significant effect of Debt to Asset Ratio on ROA presents a more nuanced interpretation, as leverage effects can operate through multiple channels including tax shield benefits from interest payments, the disciplinary effect of debt obligations on management, the magnification of equity returns when return on invested capital exceeds the cost of debt, and the enablement of scale economies through larger-scale investments. PT. Indofood's ROA averaging 5.79% suggests that profitable deployment of debt-financed assets contributes to overall profitability, while debt financing may enable investments in production facilities, distribution networks, or marketing campaigns that generate economies of scale unavailable with equity-constrained growth.

The positive leverage-profitability relationship observed here contrasts with financial distress theories predicting negative relationships at high leverage levels. PT. Indofood's moderate debt ratios (averaging 47%) appear to remain within an "optimal leverage" zone where benefits outweigh costs. Beyond this zone, additional debt might increase financial distress probability, raise borrowing costs, and reduce profitability. This implies that while strategic debt utilization can enhance returns, an imbalanced capital structure can quickly erode shareholder value. This underscores the importance of maintaining a balanced capital structure where the benefits of debt, such as tax shields and amplified returns, do not succumb to the heightened financial risk and potential for bankruptcy (Shahnia et al., 2020).

While individual variables demonstrate statistical significance, the simultaneous F-test yields mixed results ( $F = 4.223$ ,  $p = 0.217$ ). This apparent contradiction reflects sample size limitations ( $n = 5$  years) that constrain statistical power for detecting joint effects. With only five observations and three estimated parameters (constant,  $\beta_1$ ,  $\beta_2$ ), degrees of freedom are severely restricted, inflating the critical F-value (19.30) and making significance difficult to achieve.

From a practical perspective, the high adjusted  $R^2$  (63.5%) and significant individual effects suggest that Current Ratio and Debt to Asset Ratio collectively explain a substantial portion of ROA variation. The simultaneous test's non-significance should be interpreted cautiously given sample constraints rather than as evidence of absence of joint effects. Furthermore, the intricate interplay between liquidity and solvency, while statistically challenging to prove with limited data, remains theoretically significant in shaping a firm's financial health and performance trajectory (Shahnia et al., 2020).

This study's findings partially align with Hasibuan et al. (2024), who reported significant positive effects of liquidity ratios on financial performance at PT. Indofood for 2016-2020. The consistency across different time periods suggests a stable liquidity-profitability relationship resilient to temporal variations in economic conditions. Similarly, the observed positive influence of the Debt to Asset Ratio on Return on Assets aligns with research indicating that strategic leverage can enhance financial performance, particularly when a company's return on invested capital exceeds its cost of debt (Daryanto et al., 2018).

The positive leverage-profitability relationship corroborates trade-off theory predictions that firms benefit from debt's tax advantages and disciplinary mechanisms within moderate leverage ranges. This finding supports Margaretha's (2018) observations regarding optimal capital structure in Indonesian manufacturing contexts. Moreover, the findings resonate with studies emphasizing the importance of judicious debt management in capitalizing on growth opportunities and enhancing shareholder value (Syahputri et al., 2022).

The observed positive effect of the Debt to Asset Ratio stands in contrast to Ramdaniyah's findings, which reported

negative impacts of solvency on profitability for PT. Indofood CBP Sukses Makmur, Tbk. during 2014-2019. This discrepancy may be attributed to several factors: first, the studies focused on different corporate entities, as PT. Indofood CBP operates as a subsidiary with a distinct financial structure and risk profile compared to the parent company, PT. Indofood Sukses Makmur, Tbk. Second, the differing time periods (2019-2023 versus 2014-2019) encompass unique economic conditions that could alter leverage dynamics. Third, PT. Indofood may have optimized its capital structure over time, leading to more beneficial leverage ratios in recent years. Furthermore, Setyasari's study, covering 2011-2021, found non-significant effects for both liquidity and solvency on profitability, presenting another point of divergence. The longer time span in Setyasari's research might introduce greater variability and structural breaks that obscure relationships, while differing statistical methodologies or variable operationalizations could also contribute to the varying results.

These findings support an integrative perspective combining liquidity preference theory, trade-off theory, and agency theory. Optimal financial management requires simultaneous attention to short-term liquidity management and long-term capital structure decisions. Neither dimension operates in isolation; rather, they interact to shape profitability outcomes through operational, financial, and strategic channels.

The positive effects observed at PT. Indofood's current financial ratio levels suggest positioning within an "optimal zone" where liquidity provides operational benefits without excessive opportunity costs, and leverage delivers tax/discipline advantages without imposing material financial distress risks.

For Corporate Financial Management, working capital optimization is crucial. Financial managers should maintain Current Ratios within ranges that ensure operational continuity and flexibility while avoiding excessive idle liquidity. PT. Indofood's increase to 192% in 2023 warrants evaluation regarding optimal deployment of excess liquidity into profitable investments. Furthermore, the positive leverage-profitability relationship validates the strategic use of debt financing for value-creating investments; however, continuous monitoring of debt service coverage and financial flexibility remains essential to avoid crossing into distress zones. Lastly, integrated financial planning is vital, as liquidity and leverage decisions should be coordinated rather than treated independently. Trade-offs exist—for instance, debt-financed asset expansion may strain short-term liquidity if revenue generation lags investment timing.

For Investors and Stakeholders, financial health assessment is crucial. Investors can use liquidity and leverage ratios as partial indicators of future profitability potential, as companies demonstrating both adequate liquidity and prudent leverage may offer superior risk-adjusted returns. Risk evaluation is also important, as high leverage combined with low liquidity presents elevated risk profiles requiring compensation through higher expected returns. PT. Indofood's moderate leverage and improving liquidity suggest balanced risk-return positioning. Lastly, comparative analysis is vital: Stakeholders should benchmark PT. Indofood's ratios against industry peers and historical performance to contextualize absolute values. The food processing sector's working capital intensity and competitive dynamics influence optimal ratio targets. This study further supports the notion that effective management of both liquidity and leverage is paramount for sustaining corporate profitability in dynamic market environments, particularly within the Indonesian context (Ripaluddin et al., 2023).

For Regulatory and Policy Considerations, financial stability monitoring is paramount; regulators overseeing systemic food security may monitor aggregate industry liquidity and leverage to anticipate potential supply disruptions from corporate financial distress. Taxation policy also plays a role, as the positive leverage-profitability relationship highlights its influence on corporate capital structure, meaning modifications to interest deductibility rules would alter optimal leverage levels. Lastly, credit market development is significant, as financial institutions can utilize ratio-profitability relationships to refine credit risk models and pricing for food processing sector loans.

The five-year observation period, while capturing recent conditions, constrains statistical power and generalizability. Larger samples across multiple companies and extended timeframes would enhance result robustness and enable more sophisticated analytical techniques such as panel data models, dynamic specifications, or structural equation modeling.

Concentrating on PT. Indofood Sukses Makmur, Tbk. provides depth but limits breadth. The company's unique characteristics—market leadership, vertical integration, diversified product portfolio—may not generalize to smaller competitors, specialized producers, or firms in different developmental stages.

This study focuses on two specific financial ratio categories impacting profitability: liquidity and leverage. However, numerous other factors also influence profitability, including operational efficiency ratios, market positioning, innovation capabilities, management quality, and broader macroeconomic conditions. The 36.5% unexplained variance in Return on Assets within the analysis highlights the significant influence of these omitted factors and suggests avenues for further research.

While regression analysis identifies associations, establishing definitive causality requires additional considerations. Higher profitability may enable firms to maintain higher liquidity or optimize leverage (reverse causality). Unobserved firm characteristics may simultaneously determine liquidity, leverage, and profitability (endogeneity). Additionally, annual data capture current-period relationships but may miss lagged effects of financial decisions on subsequent profitability (contemporaneous measurement). Panel data with instrumental variables, difference-in-differences designs, or natural experiments would strengthen causal inference.

The 2019-2023 period encompasses extraordinary circumstances (COVID-19 pandemic, supply chain crises, inflation spikes) that may not persist. Relationships observed during crisis periods may differ from steady-state conditions.

Financial ratio computation involves choices regarding the treatment of extraordinary items in net income, the classification of hybrid securities between debt and equity, and valuation methods for assets. Different methodologies could yield varying numerical results, though directional relationships would likely persist for the Impact of Liquidity Ratio and Solvency Ratio on the Profitability Ratio in PT. Indofood Sukses Makmur, Tbk. for the Period 2019-2023.

## CONCLUSION

This study concludes that liquidity and solvency play a substantial and multidimensional role in shaping profitability at PT.

Indofood Sukses Makmur, Tbk. during the 2019–2023 period. Empirical evidence demonstrates that both the Current Ratio and Debt to Asset Ratio exert significant positive effects on Return on Assets, supporting theoretical frameworks that highlight the importance of balancing short-term financial flexibility with optimal long-term leverage decisions. The regression model explains 63.5% of profitability variation, indicating strong explanatory power despite limitations in sample size that affect simultaneous statistical testing. Observed financial trends—improving liquidity, moderating leverage, and resilient profitability—reflect effective financial management responses to macroeconomic uncertainties. Theoretical implications emphasize the integrated nature of liquidity and capital structure management in enhancing firm performance, while practical recommendations encourage optimized liquidity deployment, balanced leverage policies, and continuous performance monitoring. The findings also validate the study's hypotheses, with both liquidity and leverage exerting significant individual influences on profitability, and a partially supported joint effect. Beyond corporate relevance, this research provides meaningful insights for investors, creditors, regulators, and scholars by contributing updated empirical evidence within the Indonesian food processing sector. Future research should adopt broader samples, incorporate additional financial and operational indicators, explore non-linear and moderating mechanisms, and integrate advanced analytical or qualitative approaches to deepen understanding of financial ratio-profitability dynamics.

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## CONFLICT OF INTERESTS

The author declares no conflicts of interest regarding this research. This study was conducted independently without financial support, sponsorship, or influence from PT. Indofood Sukses Makmur, Tbk. or any other commercial entity. The research objectives, methodology, analysis, and conclusions reflect solely the author's academic inquiry, free from external pressures or biases that might compromise scientific integrity.

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