

Analysis of Liquidity, Asset Growth, and Tangibility on Profitability with Capital Structure Mediation

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Abstract

This study is meticulously crafted to examine the influence of liquidity, asset growth, and tangibility on profitability within food and beverage companies listed on the Indonesia Stock Exchange from 2019 to 2022, with capital structure acting as a mediating variable. Through the application of quantitative data analysis, the research explores the intricate relationships among these variables. The findings indicate that liquidity has a significant positive effect on profitability, with asset growth also contributing favorably. Conversely, the effect of tangibility on profitability appears to be inconsistent and context-dependent. Furthermore, capital structure is recognized as a mediating factor that connects the independent variables to profitability, highlighting the essential role of effective capital structure management in enhancing financial performance. Ultimately, this research seeks to provide valuable insights for academics, industry practitioners, and investors, thereby aiding informed decision-making within the food and beverage sector.

Keywords: asset growth, capital structure, liquidity, profitability, tangibility.

Abstraks

Penelitian ini mengkaji pengaruh likuiditas, pertumbuhan aset, dan tangibilitas terhadap profitabilitas, dengan struktur modal berfungsi sebagai variabel mediasi, pada perusahaan makanan dan minuman yang terdaftar di Bursa Efek Indonesia selama periode 2019 hingga 2022. Dalam penelitian ini, pendekatan kuantitatif diterapkan untuk menganalisis hubungan yang ada antara variabel-variabel tersebut. Hasil analisis menunjukkan bahwa likuiditas memiliki pengaruh positif yang signifikan terhadap profitabilitas, sementara pertumbuhan aset juga berkontribusi secara positif. Namun, pengaruh tangibilitas terhadap profitabilitas menunjukkan ketidaksesuaian yang bervariasi di antara perusahaan-perusahaan yang diteliti. Selain itu, struktur modal terbukti memainkan peran sebagai variabel mediasi dalam hubungan antara variabel independen dan profitabilitas, sehingga menekankan pentingnya manajemen yang efektif terhadap struktur modal dalam meningkatkan kinerja keuangan. Melalui penelitian ini, diharapkan dapat memberikan kontribusi yang berarti bagi akademisi, praktisi, dan investor dalam membuat keputusan yang lebih tepat di sektor industri makanan dan minuman.

Kata kunci: likuiditas, pertumbuhan aset, profitabilitas, struktur modal, tangibilitas.

Introduction

The capital structure is made up of equity and debt, serving as the primary sources of financing for a company (Brian et al., 2022). The use of equity and debt by food and beverage companies can vary depending on business strategy, capital needs, risks and market conditions. Funds that come from internal investors or company owners are known as equity (Fachri et al., 2021). To obtain additional funds, food and beverage companies often use loans from financial institutions or bonds (Wibowo & Mekaniwati, 2020). Loans can be used to finance capital, equipment purchases, acquisitions or working capital.

Profitability serves as a crucial indicator for shareholders when evaluating the effectiveness and efficiency of capital structure management (Halim et al., 2022). Analyzing financial conditions enables companies to formulate appropriate policies and strategies aimed at mitigating issues and minimizing risks (Wardhani et al., 2022). It serves as a measure of management's ability to generate income through sales or yield returns on investments (Aziz & Hidayat, 2023). In this study, profitability is quantified using Return on Assets (ROA), which is deemed superior to other financial ratios due to its capacity to gauge overall operational efficiency. According to (Pradnyaswari & Dana, 2022), ROA represents how effectively a company leverages its total assets, serving as a comparative metric between the profits generated and the assets utilized by the organization. It acts as a benchmark for assessing a company's effectiveness in producing profits through adept asset management (Kurniawan & Hermanto, 2021). Numerous studies have explored the intricate relationship between capital structure and profitability, including to Chandra et al. (2019), Halim et al. (2022), Sawiyah & Riduwan (2022), Amrulloh & Susilo (2022) dan Wardoyom et al. (2022) which stated that capital structure has a significant positive effect on profitability. Meanwhile, research conducted by Pangesti et al. (2022), Fadilah (2022), Pradnyaswari & Dana (2022), Jannah (2020), Kalesaran et al. (2020) dan Sari & Ghofirin (2018) stated that capital structure has a significant negative effect on profitability.

The food and beverage sector tends to have a lower level of risk than other sectors because demand for it tends to remain stable in difficult economic conditions (Salsabilah & Amanah, 2021). Companies frequently focus on a number of criteria, such as capital structure, tangibility, asset growth, and liquidity, in order to achieve high profits. Liquidity represents a company's ability to swiftly satisfy its short-term liabilities as they become due (Aziz & Hidayat, 2023). In this study, liquidity is evaluated through the Current Ratio (CR), which reflects the company's capacity to swiftly convert its assets into cash (Ramadhan et al., 2021). Due to the risk of difficulty in paying interest or principal on loans, companies usually consider a healthy debt to equity ratio to avoid excessive liquidity pressure (Arlita & Surjandari, 2019). This reduces the risk of their dependence on one type of funding and increases financial flexibility (Sinabariba et al., 2021). Research examining the effect of liquidity on profitability was conducted by (Trisnayanti & Wiagustini, 2022) which claims that profitability is significantly improved by liquidity. However, according to the study (Septiano et al., 2022), liquidity significantly reduces profitability. This differs from the study carried out by (Rantika et al., 2022) which states that liquidity does not affect profitability.

Asset growth is the result of expansion or broadening of business operations. This may be demonstrated by greater investment in inventory, production facilities, research and development, or the acquisition of other assets (Sa et al., 2022). Investors often desire asset growth because it can indicate greater income and profits in the future (Patar, dkk, 2021). In essence, healthy asset growth can increase a company's profitability. Companies with larger assets can increase their production capacity, reach a wider market, or improve their operational efficiency, all of which can increase their revenue or profits (Awaluddin et al., 2019). Companies with larger assets can increase their production capacity, reach wider markets, or improve their operational efficiency, all of which can increase their revenues or profits (Ningsih et al., 2022). Research investigating the impact of asset growth on profitability was carried out by Mursalini et al. (2022), Rahmah & Bagaskoro (2021), and Trisnayanti & Wiagustini (2022) which indicates that asset growth has a significant positive impact on profitability. In contrast, the study by Ningsih et al. (2022) suggests that asset growth does not influence profitability.

Food and beverage companies tend to have large and valuable production facilities or inventory and can easily use those assets as collateral to obtain loans from banks or investors (Santioso, 2020). Capital structure based on tangible assets can affect a company's profitability

directly and indirectly (Firdaus & Rahmawati, 2019). By taking into account the tangibility of assets in financial decision making, companies can manage their capital structure with a balanced strategy between utilizing tangible assets to support growth and maintaining financial flexibility to achieve optimal results in the long term (Slamet & Ismawati, 2019). An investigation into how tangibility affects profitability was carried out by Lazăr (2016) which suggests that tangibility has a negative impact on profitability. Meanwhile, in the research Bagus et al. (2016) claims that profitability is positively impacted by tangibility. This differs from the study carried out by Eforis & Pioleta (2020), it asserts that profitability is unaffected by tangibility.

The manufacturing sector is the primary contributor to national export value, serving as a catalyst for Indonesia's economic growth. This context, along with discrepancies in previous research results, encourages the researchers to re-evaluate the effects of liquidity, asset growth, and tangibility on profitability, using capital structure as a mediating variable.

Methods

This study utilized the annual reports of food and beverage companies registered on the Indonesia Stock Exchange (IDX) to collect comprehensive yearly data covering the period from 2019 to 2022, thereby ensuring a robust analysis of the sector's financial performance over these four years. Each variable pertinent to the study was subsequently calculated in accordance with established methodologies. Specifically, liquidity was quantified through the Current Ratio, while asset growth was expressed as a percentage of total asset growth (%). Tangibility was assessed through the analysis of asset structure, while profitability was quantified using Return on Assets (ROA); furthermore, the variable representing capital structure was delineated by the Debt-to-Equity Ratio (DER), thus providing a comprehensive framework for evaluating the financial characteristics of the studied entities. The theoretical framework, illustrated in **Figure 1**, is constructed upon the problem formulation, various definitions, and prior research conducted by other scholars.

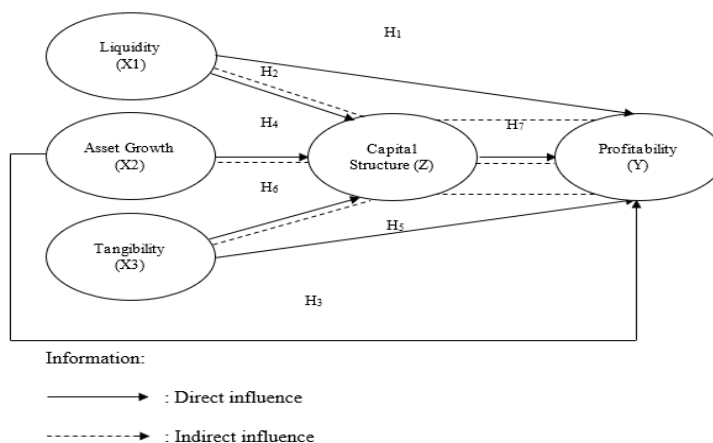


Figure 1. Research Framework

Source: Author Construct, 2024

The population encompasses all entities located within a designated geographical area that exhibit certain characteristics suitable for study, thus allowing for the derivation of conclusions. Conversely, a "sample" refers to a smaller subset of this population, chosen through a method that ensures its representativeness of the larger group being examined. In this study, the population consisted of all food and beverage companies registered on the Indonesia Stock Exchange (IDX) during the period from 2019 to 2022, thereby encompassing a comprehensive range of entities within the sector for analysis. By the end of 2022, there were a

total of 84 companies officially registered on the IDX. The research sample was identified using purposive sampling, a methodology that involves defining specific criteria pertinent to the research objectives to select appropriate subjects for analysis. The samples incorporated in this investigation comprised food and beverage companies registered on the IDX that met the predefined criteria, as delineated in **Table 1**.

Table 1. Determination of Sample Criteria

No	Criteria	Result
1	Food and beverage companies listed on the Indonesia Stock Exchange (IDX) at the end of 2022 represent a variety of businesses in this sector.	84
2	Companies that did not publish audited financial statements by December 31 in the years 2019 to 2022 were excluded from the research.	-29
3	Companies that did not make a profit during the study period were identified as a specific group.	-30
	Research Sample	25
	The total sample size is 25 companies multiplied by 4 years.	100

Source: Researcher Archives (2023)

Data analysis approaches are applied directly to current data, as well as through a computer program (Smart PLS). Data analysis with Smart PLS enables researchers to investigate complex correlations between variables. Descriptive statistics are used to summarize and characterize data collected from a sample. These statistics include a variety of measurements such as mean, median, mode, maximum, minimum, and standard deviation, which can be displayed numerically or visually using charts and graphs (Sujarweni, 2015). The mode reflects the average value of all data used. The median represents the middle value of all sorted data. The modus indicates the most frequently occurring value in a dataset. The maximum value represents the highest data point in the dataset, while the minimum value reflects the lowest. Standard deviation measures the data's dispersion; a higher value suggests greater variability, whereas a lower value indicates less variation. This descriptive analysis endeavors to clarify the impact of liquidity, asset growth, and tangibility on the profitability of food and beverage companies registered on the Indonesia Stock Exchange during the timeframe from 2019 to 2022, with capital structure acting as a mediating variable in this complex interrelationship.

Multiple regression models are required to satisfy several classical assumptions, among which is the normality test. This test is essential for verifying that the residuals—the discrepancies between the observed and predicted values—conform to a normal distribution. Adhering to this assumption is vital for establishing the reliability of the model and the accuracy of its estimates. According to Ghozali (2018), The normality test assesses whether the residuals in a regression model conform to a normal distribution. This assessment is typically carried out utilizing the Kolmogorov-Smirnov test, which establishes that the data is regarded as normally distributed when the significance level surpasses 0.05; conversely, if the significance level is below 0.05, the data is classified as not normally distributed. Additionally, as noted by Ghozali (2018), the multicollinearity test investigates the correlation among independent variables within a regression model. This evaluation is crucial for identifying potential redundancies among the variables, as multicollinearity can undermine the reliability of regression coefficients and skew the model's interpretation. The test employs the tolerance value and the Variance Inflation Factor (VIF) as key indicators; specifically, a tolerance value exceeding 0.1 and a VIF below 10 indicate that multicollinearity is unlikely to be a concern. In contrast, not meeting these thresholds may suggest the potential existence of multicollinearity.

According to Ghozali (2018), The autocorrelation test examines whether there is a correlation between the residuals of a linear regression model at time t and those at time $t-1$. This evaluation is essential for determining whether the errors in the model are systematically

related over time, which can impact the validity of the regression analysis. This is measured using the Durbin-Watson statistic, which helps assess whether the residuals are independent across different time periods. If a significant correlation is detected, it may suggest that the model is misspecified or that key variables have been omitted. According to (Sujarweni, 2016), the criteria for interpreting the Durbin-Watson test are as follows:

- a. If $1 < d < dL$, it indicates the presence of positive autocorrelation.
- b. If $4 - dL < d < 4$, it signifies negative autocorrelation.
- c. If $2 < d < 4 - dU$ or $dU < d < 2$, it suggests that there is no positive or negative autocorrelation.
- d. If $dL \leq d \leq dU$ or $4 - dU \leq d \leq 4 - dL$, the test results are inconclusive. In this case, alternative tests may be applied, or additional data can be collected.
- e. If the value of $dU < d < 4 - dU$, it confirms that there is no autocorrelation.

As noted by Ghozali (2018), the heteroscedasticity test is performed to ascertain whether the regression model displays characteristics of heteroscedasticity; ideally, a well-structured regression model should be devoid of such issues. When the residual points are symmetrically dispersed both above and below the zero line on the Y-axis, it implies that the model does not exhibit indications of heteroscedasticity, thereby enhancing the reliability of the regression analysis. Furthermore, as articulated by Arifin (2017), multiple regression analysis involves a singular dependent variable along with two or more independent variables, serving as an essential tool for investigating the relationships among these independent variables and the dependent variable. This analytical methodology proves especially effective when utilizing data measured on an interval or ratio scale. The regression equations are constructed as follows:

$$Z = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \dots\dots\dots 1$$

Description:

- Z = Capital Structure
- a = Constant (Y price when X=0)
- $\beta_{1,2,3}$ = Regression coefficient
- X1 = Liquidity
- X2 = Asset Growth
- X3 = Tangibility
- e = Estimated error (5%)

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 Z + e \dots\dots\dots 2$$

Description:

- Y = Profitability
- a = Constant (Y price when X=0)
- $\beta_{1,2,3,4}$ = Regression coefficient
- X1 = Liquidity
- X2 = Asset Growth
- X3 = Tangibility
- Z = Capital Structure
- e = Estimated error (5%)

The t-test statistic is used for hypothesis testing in multiple regression analyses, allowing researchers to determine whether each regression coefficient linked with the independent variables has a significant impact on the dependent variable. The t-test, in particular, determines the level of significance of each independent variable's effect on the dependent variable, assuming that the other independent variables remain constant. This approach allows for the evaluation of the individual contributions of each predictor in the model (Sugiyono, 2018). The t-test formulation is articulated as follows:

- a. When the estimated t-value is equal to or exceeds the critical t-value, H1 is accepted, thereby indicating a significant partial influence of the independent variables on the dependent variable.
- b. Conversely, if the estimated t-value falls below the critical t-value, H1 is rejected, which implies that the independent variables do not significantly impact the dependent variable.
- c. The t-test for each variable in the regression output may be executed using Smart PLS, with significance levels predetermined at 0.01, 0.05, and 0.10 ($\alpha = 10\%$, 5% , and 1%).

The criteria for the acceptance or rejection of hypotheses in the t-test are delineated as follows:

- a. A probability value smaller than the significance level (Sig. < 0.05) indicates that the independent variable has a limited effect on the dependent variable.
- b. A probability value greater than 0.05 suggests that the independent variable has no meaningful impact on the dependent variable.

Results

Food and beverage companies are manufacturing companies that make products and then sell them to gain maximum profit. In 2019-2022, namely the period before the pandemic, the pandemic period and after the pandemic. Food and beverage companies were relatively less impacted by the pandemic, as their products are considered essential for all segments of society. The key differentiator lies in how these companies manage their capital and acquire liquidity in an effective and efficient manner. By optimizing their capital structure, it is expected that they can achieve maximum profitability.

Table 2. Descriptive Statistics

Description	N	Minimum	Maximum	Mean	Std. Deviation
X1_CR	100	0,732	13,309	2,919	2,611
X2_PA	100	-0,161	1,676	0,101	0,210
X3_TANG	100	0,078	0,834	0,494	0,201
Y_ROA	100	0,001	0,416	0,090	0,065
Z_DER	100	0,109	2,465	0,819	0,562

Source: Data that has been meticulously processed and analyzed, (2024).

The following analysis pertains to **Table 2**. Among the companies listed, PT Multi Bintang Indonesia Tbk. (MLBI) recorded the lowest current ratio (CR) in 2019, with a value of 0.732. This outcome resulted from the company's total current assets amounting to IDR 1.16 trillion, juxtaposed against total current liabilities of IDR 1.59 trillion, thus yielding the smallest CR. In contrast, the highest CR was observed in PT Campina Ice Cream Industry Tbk. (CAMP) in 2021, which achieved a remarkable value of 13.309. With total current assets of IDR 856 billion and total current liabilities of IDR 64 billion, PT Campina Ice Cream's comparatively low current liabilities in 2021 contributed to its elevated CR ratio relative to its peers. The average (mean) CR across the sample was found to be 2.919, with a standard deviation of 2.611. The results indicate that the mean exceeds the standard deviation ($2.919 > 2.611$), suggesting a relatively minor average variation in the data, thus validating the mean as a representative descriptor.

The company exhibiting the smallest asset growth was PT Wilmar Cahaya Indonesia Tbk. (CEKA) in 2022, with a value of -0.161, or -16.1%. This drastic decline in total assets, from IDR 1.39 trillion in 2021 to IDR 1.17 trillion in 2022, underscores the company's struggle with asset retention. Conversely, PT Indofood CBP Sukses Makmur Tbk. (ICBP) achieved the highest asset growth in 2020, with a remarkable value of 1.676, or 167.6%. The total assets escalated from IDR 38.7 trillion in 2019 to IDR 103.6 trillion in 2020. The average (mean) asset growth for this study

was recorded at 0.101, while the standard deviation stood at 0.210, which surpasses the mean ($0.210 > 0.101$), indicating a notable deviation from the average value.

In terms of tangibility, PT Tigaraksa Satria Tbk. (TGKA) exhibited the lowest tangibility in 2019, with a value of 0.078. The significant total assets held by the company were disproportionately small compared to its total non-current assets, which amounted to only IDR 234 billion out of IDR 2.9 trillion in total assets. The decline in non-current assets from 2018 can be attributed to a reduction in cash and cash equivalents, which were primarily allocated to the acquisition of additional fixed assets. On the other hand, PT Astra Agro Lestari Tbk. (AALI) recorded the highest tangibility in 2019, valued at 0.834. The average (mean) tangibility value across the study was calculated at 0.494, with a standard deviation of 0.201, which is smaller than the mean ($0.494 > 0.201$), suggesting a relatively minor deviation from the average in the dataset.

PT Sekar Bumi Tbk. (SKBM) reported the lowest return on assets (ROA) in 2019 at 0.001, while PT Multi Bintang Indonesia Tbk. (MLBI) achieved the highest ROA for that year at 0.416. The average (mean) ROA across the study was determined to be 0.090, with a standard deviation of 0.0065, which is less than the mean ($0.090 > 0.0065$), indicating that the data's average deviation from the mean is quite minimal. Furthermore, the debt-to-equity ratio (DER) was employed to evaluate the financial structure of the companies in the study. PT Wilmar Cahaya Indonesia Tbk. (CEKA) had the lowest DER in 2022, with a value of 0.109, while PT Tunas Baru Lampung Tbk. (TBLA) recorded the highest DER at 2.465. The average (mean) DER value for this research was found to be 0.819, with a standard deviation of 0.562, which is less than the mean ($0.819 > 0.562$), demonstrating a relatively minor average deviation in the dataset.

Table 3. Average Value of Liquidity Components of Production Businesses in the Food and Beverage Sub-Sector 2019 – 2022

Year	Total Current Assets	Total Current Liabilities	Current Ratio
2019	Rp 5.253.217.577.180	Rp 2.968.480.545.207	2,763
2020	Rp 5.994.017.375.646	Rp 3.223.962.562.897	2,953
2021	Rp 7.604.622.279.515	Rp 4.473.525.364.923	2,818
2022	Rp 7.998.727.777.829	Rp 4.086.428.227.398	3,140

Source: Data that has been meticulously processed and analyzed, (2024).

Based on **Table 3**, the Current Ratio (CR) of food and beverage companies registered on the IDX showed fluctuations between 2019 and 2022. In 2020, the CR increased by 0.19 due to a larger rise in total current assets compared to a smaller increase in total current liabilities. However, in 2021, the CR decreased by 0.135 as total current liabilities saw a significant increase. Despite a rapid growth in total current assets, the rise in total current liabilities led to a decline in the CR that year. This trend improved in 2022, with an increase in CR of 0.322 attributed to a rise in total current assets alongside a decrease in total current liabilities. This indicates that food and beverage companies were able to effectively manage their current liabilities during the pandemic. Throughout the research period, the average CR value for these companies remained above 2, signifying strong liquidity. A Current Ratio greater than 2 indicates that these companies have more than twice their current assets relative to their current liabilities, suggesting they can easily meet their short-term obligations without encountering financial issues.

Table 4. Average Value of Asset Growth of Production Businesses in the Food and Beverage Sub-Sector 2019 – 2022

No	Assets Total	Assets Growth
2018	Rp 12.589.221.414.184	
2019	Rp 13.140.588.978.500	8.22%

2020	Rp 18.973.163.279.094	16.11%
2021	Rp 20.678.140.910.393	7.15%
2022	Rp 21.411.321.718.802	8.94%

Source: Data that has been meticulously processed and analyzed, (2024).

Based on **Table 4**, the asset growth rate of food and beverage businesses traded on the IDX fluctuated between 2019 and 2022. In 2020, asset growth saw a significant increase of 7.89% due to a substantial rise in total assets. The COVID-19 pandemic posed major challenges, leading to variability in asset growth. Companies that effectively adapted to the pandemic – such as those that pivoted to online sales or introduced products better aligned with market demand – experienced rapid asset growth. However, in 2021, asset growth declined sharply by 8.96% compared to the previous year, as the increase in total assets was minimal. This trend shifted in 2022, with asset growth rebounding to an increase of 1.79% due to a notable rise in total assets. This pattern illustrates how food and beverage companies confronted and adapted to various global economic challenges.

Table 5. Average Value of Tangibility Components of Production Businesses in the Food and Beverage Sub-Sector 2019–2022.

Year	Total Fixed Assets	Total Assets	Tangibility
2019	Rp 7.918.744.474.908	Rp 13.140.588.978.500	0,509
2020	Rp 12.970.715.446.466	Rp 18.973.163.279.094	0,506
2021	Rp 13.085.625.217.110	Rp 20.678.140.910.393	0,482
2022	Rp 13.434.551.878.672	Rp 21.411.321.718.802	0,479

Source: Data that has been meticulously processed and analyzed, (2024).

Based on **Table 5** above, the tangibility value registered on the IDX tends to decline in 2019 - 2022. The tangibility value has decreased every year and the most drastic decline was in 2021 by 0.024. The pandemic caused restaurant closures, reduced visits to physical stores and supply chain disruptions, which ultimately changed consumer behavior to online purchases. The decline in tangibility is also related to the decline in the value of physical assets such as property or equipment due to reduced company operational activities.

Table 6 Average Value of Profitability Components of Production Businesses in the Food and Beverage Sub-Sector 2019–2022.

Year	Net profit	Total Assets	ROA
2019	Rp 1.024.430.617.789	Rp 13.140.588.978.500	0.099
2020	Rp 1.182.503.934.602	Rp 18.973.163.279.094	0.073
2021	Rp 1.420.274.650.919	Rp 20.678.140.910.393	0.093
2022	Rp 1.264.582.182.606	Rp 21.411.321.718.802	0.094

Source: Data that has been meticulously processed and analyzed, (2024).

According to **Table 6**, the Return on Assets (ROA) of food and beverage companies registered on the IDX fluctuated significantly between 2019 and 2022. In 2020, the ROA fell by 0.027, owing mostly to a significant increase in total assets offset by a minor increase in net profit. This gap shows that the corporation was less efficient at using its assets to create profits than in previous periods. In contrast, in 2021, the ROA increased by 0.02, indicating a little improvement in the company's capacity to convert its assets into net profit over the prior year. In 2022, the ROA saw a further, albeit slight, increase of 0.001. Despite a downturn in net profit during this period, the ROA continued its upward trajectory, largely due to a negligible increase in total assets. Overall, although the ROA experienced an increase, this minor uptick underscores the difficulties the company encounters in significantly improving profitability or effectively utilizing new assets.

Table 7. The Average Values of The Capital Structure Components of Production Businesses Within the Food and Beverage Sub-Sector From 2019 to 2022.

Year	Total Debt	Total Equity	DER
2019	Rp 5.676.755.835.201	Rp 7.463.793.021.316	0,839
2020	Rp 9.220.676.016.922	Rp 9.744.047.413.071	0,840
2021	Rp 10.053.073.177.074	Rp 10.637.201.844.145	0,775
2022	Rp 10.066.224.619.661	Rp 11.367.085.175.668	0,823

Source: Data that has been meticulously processed and analyzed, (2024).

According to **Table 7**, the Debt-to-Equity Ratio (DER) of food and beverage companies registered on the IDX showed changes between 2019 and 2022. In 2020, the DER increased slightly by 0.001, indicating that the company aimed to maintain a balance between debt and equity, avoiding excessive reliance on debt for operations or expansion. In 2021, the DER saw a significant decrease of 0.065, suggesting that the company was focused on minimizing additional debt while increasing equity through methods such as issuing new shares, retaining earnings, or enhancing asset value without incurring further debt. This strategy was implemented to mitigate financial risks associated with debt financing, such as high interest costs and potential repayment challenges. The decline in the DER reflects a deliberate effort to strengthen the company's financial stability. However, in 2022, the trend reversed, and the DER increased notably by 0.048. This indicates that the company was in a phase of seeking greater financing through debt, which may be a strategy for growth or a response to external challenges. Nonetheless, this shift also implies that the company is taking on higher risks related to future interest expenses and debt repayment obligations.

Construct validity and reliability are assessed using the measurement model (outer model). Validity assessment establishes if the study instrument accurately measures the expected constructs (Abdillah, 2015). Reliability testing evaluates the consistency of the measurement tool in capturing a concept and the uniformity of respondents' answers to the research questionnaire. Below is the representation of the measurement model for each variable and indicator, as analyzed using SmartPLS software, illustrated in **Figure 2**.

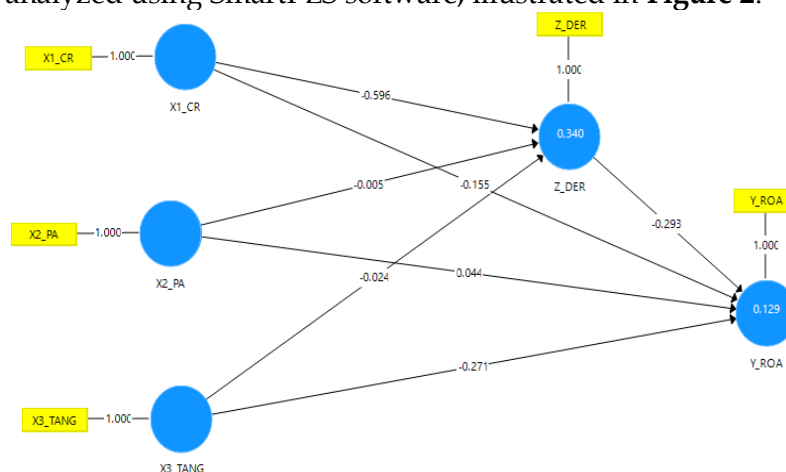


Figure 2. Validity Testing based on Factor Loading

Source: Data Analysis Result by Using Smart PLS

The measurement model is evaluated based on three main criteria: convergent validity, discriminant validity, and composite reliability values.

Convergen Validity

To assess convergent validity, the outer loading or factor loading value is used. An outer loading value greater than 0.7 suggests that the indicator has significant convergent validity. The outer loading values for the indicators associated with the research variables are as follows:

Table 8. Validity Testing based on Factor Loading

Variables	Indicator	Outer Loading
Liquidity (X1)	X1_CR	1,000
Asset Growth (X2)	X2_PA	1,000
Tangibility (X3)	X3_TANG	1,000
Profitability (Y)	Y_ROA	1,000
Capital Structure (Z)	Z_DER	1,000

Source: Data that has been meticulously processed and analyzed, (2024).

Table 8 demonstrates that each study variable indicator has an outer loading value more than 0.7, indicating that it is feasible or valid for further examination. According to Chin, as referenced by Ghazali (2018), an outer loading value of 0.5 to 0.6 meets the convergent validity criteria.

Discriminant Validity

For the discriminant validity test, each indicator's average variant extracted (AVE) value is utilized, which must be more than 0.5 to be considered a good model. The average retrieved variant values for each variable are as follows:

Table 9. Validity Testing Table based on Average Variance Extracted (AVE)

Variables	Average Variance Extracted (AVE)
X1_CR	1.000
X2_PA	1.000
X3_TANG	1.000
Y_ROA	1.000
Z_DER	1.000

Source: Data that has been meticulously processed and analyzed, (2024).

According to **Table 9**, the AVE values of the variables CR, PA, TANG, ROA, and DER are greater than 0.5, indicating that the discriminant validity is very excellent.

Composite Reliability

Composite reliability is utilized to assess the dependability of the indicators linked to a particular variable. A composite reliability value exceeding 0.7 signifies that the indicators are considered reliable. Presented below are the composite reliability values corresponding to each variable:

Table 10. Reliability Testing based on Composite Reliability (CR)

Variables	Composite Reliability
X1_CR	1.000
X2_PA	1.000
X3_TANG	1.000
Y_ROA	1.000
Z_DER	1.000

Source: Data that has been meticulously processed and analyzed, (2024).

Table 10 indicates that the composite reliability values for all variables surpass the established threshold of 0.7, thereby confirming that each variable meets the criteria for composite reliability and is deemed highly reliable. Additionally, the Cronbach's alpha value serves as a further metric for assessing reliability, with a variable being classified as reliable if

its Cronbach's alpha exceeds 0.7. Presented below are the Cronbach's alpha values associated with each variable:

Table 11. Reliability Testing based on Cronbach's Alpha (CA)

Variables	Cronbach's Alpha
X1_CR	1.000
X2_PA	1.000
X3_TANG	1.000
Y_ROA	1.000
Z_DER	1.000

Source: Data that has been meticulously processed and analyzed, (2024).

Table 11 illustrates that the Cronbach's alpha values for each variable surpass the threshold of 0.7, thereby confirming that all variables adhere to the reliability standards established by Cronbach's alpha. As a result, it can be conclusively asserted that all variables exhibit a high degree of reliability.

Structural Model Evaluation (Inner Model)

The structural model is tested rigorously to determine the strength and validity of the interrelationships between constructs, as well as the importance of the R-squared value within a particular study framework. This full evaluation includes a t-test to determine the R-squared for the dependent construct, as well as a look at the importance of the structural route parameter coefficient. The coefficient of determination (R^2) serves as a metric to evaluate the extent to which the independent variables elucidate the variability observed in the dependent variable throughout the course of the research. The R^2 value is computed utilizing SmartPLS software, and the corresponding results are presented in the table below.

Table 12. R-Square Results

Variables	R Square	Descriptions
Y_ROA	0.129	Weak
Z_DER	0.340	Moderate

Source: Data that has been meticulously processed and analyzed, (2024).

As indicated in **Table 12**, the R-Squared value for the Debt-to-Equity Ratio (DER) is 0.340, signifying that the independent variables—Current Ratio (CR), Asset Growth (PA), and Tangibility (TANG)—account for 34% of the variability in DER, while the remaining 66% is attributable to factors not examined within the scope of this study. This R-Squared value of 34% is interpreted as moderate in strength. Conversely, the R-Squared value for Return on Assets (ROA) is recorded at 0.129, implying that the combination of CR, PA, TANG, and DER collectively influences ROA by 12.9%, leaving 87.1% of the variance in ROA to be explained by external variables not considered in this analysis. This R-Squared value of 12.9% is regarded as weak in its explanatory power.

Table 13. Q-Square Results

Variable	$Q^2 (=1-SSE/SSO)$
Y_ROA	0.083
Z_DER	0.330

Source: Data that has been meticulously processed and analyzed, (2024).

Table 13 shows that the Q-Square value for DER (Z) is 0.330. As a result, the Q-Square value of $0.330 > 0$ indicates that CR (X1), PA (X2), and TANG (X3) have predictive relevance for DER (Z). It is also known that ROA (Y) has a Q-Square of 0.083. As a result, the Q-Square value

of $0.083 > 0$ indicates that CR (X1), PA (X2), TANG (X3), and DER (Z) have predictive relevance for ROA (Y).

Discussion

The structural model is evaluated by calculating the coefficient value of each variable's relationship path. The goal of this structural connection test is to illustrate how it is conducted using the t-test. This hypothesis can be tested using the output of bootstrapping findings. The following are the outcomes of bootstrapping using SmartPLS software.

Table 14. Hypothesis Testing Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
X1_CR -> Y_ROA	-0.155	-0.152	0.094	1.657	0.049
X1_CR -> Z_DER	-0.596	-0.607	0.050	11.928	0.000
X2_PA -> Y_ROA	0.044	0.059	0.072	0.608	0.272
X2_PA -> Z_DER	-0.005	-0.013	0.057	0.082	0.467
X3_TANG -> Y_ROA	-0.271	-0.275	0.096	2.824	0.002
X3_TANG -> Z_DER	-0.024	-0.031	0.079	0.300	0.382
Z_DER -> Y_ROA	-0.293	-0.303	0.162	1.809	0.036

Source: Data that has been meticulously processed and analyzed, (2024).

Table 14 explains how liquidity, represented by the Current Ratio (CR), affects profitability, as measured by Return on Assets (ROA). The findings of hypothesis testing for the association between CR and ROA show a coefficient value of -0.155, showing a negative influence. Furthermore, the hypothesis testing produces p-values of 0.049, which are less than the significance criterion of 0.05, and t-statistics of 1.657, which exceed the crucial value of 1.64 from the t-table. As a result, the first hypothesis is supported, revealing a negative and substantial association between CR and ROA, implying that a decrease in CR corresponds to an increase in the company's ROA.

In investigating the relationship between liquidity (CR) and capital structure, as measured by the Debt-to-Equity Ratio (DER), hypothesis testing yields a coefficient value of -0.596, indicating a negative influence. The analytical results show p-values of 0.000, which are significantly less than 0.05, and t-statistics of 11.928, which are significantly higher than the essential t-value of 1.64. Thus, the second hypothesis is supported, establishing a significant negative association between CR and DER, implying that as CR reduces, the level of DER rises.

When examining the impact of asset growth on profitability, the results show a coefficient value of 0.044, indicating a positive correlation; however, hypothesis testing yields p-values of 0.272, which exceed the 0.05 threshold, and t-statistics of 0.608, which fall short of the critical t-value of 1.64. As a result, the third hypothesis is rejected, implying that while asset expansion has a positive influence on ROA, it is statistically insignificant.

The investigation of the impact of asset expansion on capital structure (DER) produces a coefficient value of -0.005, showing a marginal negative effect. The hypothesis testing findings show p-values of 0.467 (higher than 0.05) and t-statistics of 0.082, which are much lower than the critical t-value of 1.64. Hence, the fourth hypothesis is likewise rejected, because asset growth has a minor negative influence on DER.

When evaluating the effect of tangibility on profitability (ROA), hypothesis testing yields a coefficient value of -0.271, indicating a negative link. The accompanying p-values of 0.002, which are less than the 0.05 barrier, together with t-statistics of 2.824, which exceed the critical

value of 1.64, support the adoption of the fifth hypothesis. This shows that lower levels of tangibility are related to higher ROA inside the organization.

In terms of the relationship between tangibility and capital structure (DER), the results show a coefficient value of -0.024, indicating a negative effect; however, hypothesis testing yields p-values of 0.382, which exceed the 0.05 threshold, as well as t-statistics of 0.300, which fall below the critical t-value of 1.64. As a result, the sixth hypothesis is rejected, since the relationship between tangibility and DER has only a tiny detrimental influence.

Finally, the examination of capital structure (DER) on profitability (ROA) yields a coefficient of -0.293, suggesting a negative influence. The hypothesis testing findings show p-values of 0.036, which is less than 0.05, and t-statistics of 1.809, which exceed the crucial t-value of 1.64. As a result, the seventh hypothesis is accepted, indicating a negative and substantial association between DER and ROA, implying that as DER lowers, the company's ROA increases.

Table 15. Indirect Effect Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
X1_CR -> Z_DER -> Y_ROA	0.175	0.182	0.098	1.790	0.037
X2_PA -> Z_DER -> Y_ROA	0.001	0.004	0.020	0.070	0.472
X3_TANG -> Z_DER -> Y_ROA	0.007	0.009	0.028	0.247	0.403

Source: Data that has been meticulously processed and analyzed, (2024).

The results presented in **Table 15** allow us to conclude that liquidity, as quantified by the Current Ratio (CR), exerts a positive impact on profitability, which is assessed through Return on Assets (ROA), while capital structure, represented by the Debt-to-Equity Ratio (DER), functions as a mediating variable in this relationship. Hypothesis testing on the association between CR and ROA using DER yields a coefficient of 0.175, indicating a positive impact. Furthermore, the hypothesis testing results show a p-value of 0.037, which is less than the significance level of 0.05, and a t-statistic of 1.790, which above the crucial value of 1.64 according to the t-table. As a result, the eighth hypothesis is supported, confirming that DER improves the link between CR and ROA as a mediating component.

In contrast, the examination of the effect of Asset Growth on Profitability (ROA) using Capital Structure (DER) as a mediating variable produces no statistically significant results. The hypothesis testing for the relationship between asset growth and ROA mediated by DER yields a coefficient value of 0.001, indicating a positive but small effect. The test results also show a p-value of 0.472, which exceeds the 0.05 barrier, and a t-statistic of 0.070, which falls short of the crucial value of 1.64. As a result, the ninth hypothesis is rejected, demonstrating that DER has no meaningful influence on the link between asset growth and ROA.

Finally, when evaluated as a mediating variable, Tangibility's impact on Profitability (ROA) via Capital Structure (DER) is found to be statistically negligible. The hypothesis testing on the association between tangibility and ROA using DER results in a coefficient value of 0.007, indicating a positive but statistically insignificant effect. A closer look reveals a p-value of 0.403, which is greater than the 0.05 barrier, and a t-statistic of 0.247, which is still less than the crucial value of 1.64. As a result, the eleventh hypothesis is likewise rejected, revealing that DER does not function as a mediator in the relationship between tangibility and ROA.

Conclusion

This study reveals that food and beverage manufacturing companies registered on the IDX maintained relatively stable financial performance during the 2019-2022 period, despite the challenges posed by the pandemic. The companies demonstrated good liquidity, with an average Current Ratio (CR) exceeding 2, indicating their capability to meet short-term obligations. However, fluctuations in asset growth and profitability suggest that these companies need to continually adapt to evolving market conditions and consumer behavior. To enhance competitiveness and profitability, it is recommended that companies prioritize product diversification strategies, improve operational efficiency, and leverage technology in their marketing efforts. Furthermore, careful debt management is essential to maintain a healthy balance in capital structure, thereby minimizing financial risks in the future.

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