

The Impact of Leverage and Liquidity on Firm Profitability

Arifia Nurriqli ^{1*}, Nurnaningsih Utiahman ², Henky Hendrawan ³, Ngurah Pandji Mertha Agung Durya ⁴, Alfiana ⁵

^{1*} Program Studi Manajemen, STIE Pancasetia Banjarmasin, Kota Banjarmasin, Provinsi Kalimantan Selatan, Indonesia.

² Program Studi Manajemen, Universitas Gorontalo, Kabupaten Gorontalo, Provinsi Gorontalo, Indonesia.

³ Program Studi Manajemen, Sekolah Tinggi Ilmu Ekonomi Gici, Kota Depok, Provinsi Jawa Barat, Indonesia.

⁴ Program Studi Akuntansi, Fakultas Ekonomi dan Bisnis, Universitas Dian Nuswantoro, Kota Semarang, Provinsi Jawa Tengah, Indonesia.

⁵ Program Studi Manajemen, Universitas Muhammadiyah Bandung, Kota Bandung, Provinsi Jawa Barat, Indonesia.

Email: arifianurriqli.40@gmail.com ^{1*}, nurnaningsihutiahman19@gmail.com ², hendrawan16@gmail.com ³, ngurahdurya@dsn.dinus.ac.id ⁴, alfiana.dr@umbandung.ac.id ⁵

Abstrak. Penelitian ini bertujuan untuk menemukan bukti empiris pengaruh leverage (DER) dan likuiditas (CR) terhadap profitabilitas (ROA). Dalam penelitian ini, peneliti menggunakan metode kuantitatif dengan menggunakan regresi data panel. Populasi penelitian ini adalah perusahaan-perusahaan yang terdaftar di Jakarta Islamic Index (JII 30) 2020-2024, dan teknik purposive sampling digunakan untuk menentukan ukuran sampel. Sebanyak 105 sampel dari 21 perusahaan dipilih untuk penelitian ini. Teknik analisis data menggunakan EVIEWS 12. Berdasarkan temuan penelitian, profitabilitas (ROA) dipengaruhi secara signifikan oleh debt to equity ratio (DER) dan current ratio (CR). Penelitian ini dapat menjadi panduan bagi bisnis yang ingin meningkatkan dan meningkatkan kinerja serta bagi investor yang menilai kinerja perusahaan untuk mendapatkan kepastian investasi. Implikasi praktis dari temuan ini adalah manajemen emiten saham dapat mempertahankan kinerja perusahaan yang baik untuk meningkatkan kepercayaan investor secara berkelanjutan.

Kata kunci: DER; CR; ROA; JII 30.

Abstract. This study aims to find empirical evidence of the influence of leverage (DER) and liquidity (CR) on profitability (ROA). In this research, researchers employed quantitative method using panel data regression. The study population consists of the companies listed on the Jakarta Islamic Index (JII 30) 2020-2024, and the purposive sampling technique is used to determine the sample size. A total of 105 samples from 21 companies were selected for this study. The data analysis techniques use EVIEWS 12. Based on the study findings, profitability (ROA) significantly affected by debt to equity ratio (DER) and current ratio (CR). This study can serve as a guide for businesses looking to boost and enhance performance as well as for investors assessing company performance to gain investment certainty. The practical implication of these findings is the management stock issuers could maintain the company good performance in order to increase investor trust in a sustainable manner.

Keywords: DER; CR; ROA; JII 30.

Introduction

Every company is fundamentally established with common objectives: survival, profitability, and growth. To achieve these goals, it is essential for firms to effectively measure profitability, which is determined by the difference between revenues and expenses (Utiahman, 2018). Profitability is a critical indicator of a company's success and financial health, serving as a foundation for evaluating its competitiveness and long-term viability (Maximillian & Septina, 2022). Profitability ratios provide insight into the effectiveness of management strategies and operational execution (Utiahman, 2022). A consistent ability to generate profit enhances investor confidence, which in turn contributes to economic stability (Silvia & Yulistina, 2022). The Return on Assets (ROA) metric is one such key indicator that measures how effectively a company uses its assets to generate profit. A higher ROA suggests superior performance relative to sales, asset volume, and equity investments. ROA serves as a crucial measure of financial efficiency, with higher values generally signaling lower financial risk and better management of resources.

In Indonesia, the Jakarta Islamic Index (JII) is a key stock index that lists companies whose shares meet Shariah compliance requirements (Siregar & Nurlaila, 2023). The establishment of the JII aims to bolster investor confidence in Shariah-compliant investments while promoting transparency and accountability within the Islamic finance sector. By adhering to Sharia principles, the JII offers a pathway for investors to engage with a financial system that aligns with their ethical and religious values, ensuring that investments are free from interest-based transactions (*ribawi*) (Nugroho *et al.*, 2021). The Shariah Advisory Council (SAC) oversees the compliance of listed companies, reviewing financial reports and ensuring adherence to Shariah standards (Saputra *et al.*, 2021). This research focuses on two key financial indicators: leverage and liquidity, and their impact on profitability. Leverage is measured using the Debt-to-Equity Ratio (DER), which assesses the proportion of debt financing relative to equity. A higher DER

indicates increased reliance on debt, which can expose a company to greater financial risk. In particular, the JII 30 companies have shown a trend of rising leverage ratios from 2020 to 2024, with some companies recording DERs above 70%. This elevated debt burden can lead to increased financial distress, especially considering Shariah restrictions on interest-bearing debt (Komala & Triyani, 2020). Studies suggest that higher leverage often correlates with lower profitability, as the burden of debt servicing can diminish financial returns (Fianti *et al.*, 2022). Liquidity is evaluated through the Current Ratio (CR), which reflects a company's ability to meet its short-term obligations. A higher CR signifies better liquidity and the capacity to pay off debts promptly. However, an excessively high CR can indicate inefficiencies, such as idle working capital, which reduces profitability by increasing operational costs (Kholisoh & Dwiarti, 2020). The liquidity challenges faced by JII 30 companies, particularly in times of economic volatility, highlight the complexities of managing short-term obligations within the framework of Shariah-compliant practices (Sasongko *et al.*, 2021). Research also indicates that the CR has a significant impact on ROA, as effective liquidity management supports profitability by ensuring timely payments and reducing the cost of capital (Fianti *et al.*, 2022).

Literature Review

Debt-to-Equity Ratio and Return on Assets

The leverage ratio, often represented by the Debt-to-Equity Ratio (DER), reflects the proportion of debt used to finance a company's assets. Leverage, in this context, refers to the use of borrowed funds to expand a company's operations. The ratio serves as an indicator of a company's ability to meet its financial obligations, both short-term and long-term (Hidayati & Yuneline, 2022). A higher DER implies that a company relies more heavily on debt compared to equity, which can significantly influence investor perception of risk, company performance, and overall valuation (Laksmiwati *et al.*, 2021). Specifically, a high DER suggests that debt is financing a substantial portion of the company's assets, increasing the financial risk for investors. As the

level of debt increases, so does the likelihood of financial strain, which can result in lower profitability (Fianti *et al.*, 2022). Consequently, it is hypothesized that: H1: A higher Debt-to-Equity Ratio negatively affects Return on Assets (ROA).

Current Ratio and Return on Assets

Liquidity, as measured by the Current Ratio (CR), reflects a company's ability to fulfill its short-term financial obligations using its current assets. A higher CR indicates greater liquidity, suggesting that the company is more capable of meeting its immediate financial obligations (Silvia & Yulistina, 2022). However, an excessively high CR may signal inefficiencies, as it could imply underutilized resources, such as excessive inventory or a large accounts receivable balance, which may reduce overall profitability (Tanjung, 2023). A low CR indicates potential liquidity issues, suggesting that the company may struggle to meet its short-term obligations. While a high CR is generally considered favorable, it does not guarantee financial stability if the company's assets are not optimally allocated. This complexity underscores the importance of balancing liquidity and efficient asset management for maintaining profitability. Previous studies have shown a significant relationship between CR and ROA, with higher liquidity contributing to improved operational performance (Wahyuni, 2018; Fianti *et al.*, 2022). Thus, we propose the following hypothesis: H2: A higher Current Ratio positively affects Return on Assets (ROA).

Research Methodology

This study employs a quantitative approach using panel data regression to analyze the relationship between leverage, liquidity, and profitability. The study utilizes secondary data sourced from the financial reports of companies listed on the Jakarta Islamic Index (JII 30) for the period 2020-2024. The sample consists of 21 companies, providing a total of 105 observations, which were selected using a purposive sampling technique. Data analysis is conducted using the Random Effects Model (REM) with EViews 12 software. The study includes one dependent variable (Return on Assets), three independent variables (Debt-to-Equity Ratio, Current Ratio), and one mediating variable. The following analytical methods are used in this study:

- 1) Descriptive Statistics to summarize the characteristics of the data.
- 2) Pairwise Correlation Analysis to examine the relationships between variables.
- 3) Classical Assumption Tests to check for normality, multicollinearity, heteroscedasticity, and autocorrelation.
- 4) Coefficient of Determination (R²), F-statistics, and t-statistics to assess the model's fit and evaluate the significance of the relationships.

Table 1. Variable Measurement

Variable	Measurement	Source	Scale
Return on Assets	$ROA = \frac{\text{Earnings After Tax}}{\text{Total Assets}}$	Sitompul & Syarif (2023)	Rasio
Debt to Equity Ratio	$DER = \frac{\text{Total Liabilities}}{\text{Total Equity}}$	Laksmiwati <i>et al.</i> (2021)	Rasio
Current Ratio	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	Kholisoh & Dwiarti (2020)	Rasio

Results and Discussion

Results

Descriptive Analysis

The objective of the descriptive analysis in this study is to provide a summary of the key

characteristics of each research variable. This analysis offers an overview of the central tendencies and variability of the data, which helps in understanding the general trends and distributions of the variables under investigation.

Table 2. Descriptive Analysis

	DER	CR	ROA
Mean	.3666	.2548	.1007
Median	.3800	.2529	.0800
Maximum	1.2300	.9074	.4500
Minimum	.1000	-.4815	.0000
Observations	105	105	105

The descriptive analysis provides a summary of the key characteristics of each variable in the study. For the Debt-to-Equity Ratio (DER), the minimum value is 0.1000, the maximum value is 1.2300, and the average value is 0.3666. These values suggest a relatively low variation in the debt-to-total-assets ratio across the sample. For the Current Ratio (CR), the minimum value is -0.4815, the maximum value is 0.9074, and the average value is 0.2548. This indicates moderate variability in the liquidity levels of the companies under study. The

Return on Assets (ROA) ranges from a minimum value of 0.0000 to a maximum of 0.4500, with an average value of 0.1007. This shows moderate variation in the companies' ability to generate profits relative to their total assets.

Regression Model Selection

To ensure the appropriate model is used for panel data regression analysis, model specification tests were conducted. Specifically, the Chow test and Hausman test were employed to determine the most suitable model for the data. The Chow test was applied to evaluate whether the Fixed Effect or Common Effect model provides a better fit for the data. The Common Effect Model is considered valid if the probability value from the Chow test exceeds 5% (0.05), indicating that the Common Effect model is appropriate for the analysis.

Table 3. Chow Test Results

Effects Test	Statistic	d.f	Prob.
Cross-Section F	5.4811	(20.80)	0.0000
Cross-Section Chi-Square	90.6155	20	0.0000

Based on the results of the Chow test, a probability value of 0.0000, which is less than 0.05, indicates that the Fixed Effect Model is the preferred model for this analysis.

Additionally, the Hausman test was conducted to determine which model Fixed Effect or Random Effect better suits the data.

Table 4. Hausman-Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-Section Random	9.1667	2	.0471

If the Hausman test results yield a probability value of 0.0471, which is less than 0.05, the Fixed Effect Model is considered appropriate. When the probability value for the Random Effect model is also less than 0.05, the Fixed Effect Model is deemed the better fit for the data. Based on the results of both the Chow and Hausman tests, the Fixed Effect Model was selected as the optimal model for this analysis. Consequently, the Lagrange Multiplier test, which compares the Common Effect and Random Effect models, was not performed.

Classical Assumption Test

To verify the validity of the data and ensure that the results are not biased by issues such as autocorrelation, heteroscedasticity, or

multicollinearity, classical assumption tests were conducted. A normality test, specifically the Jarque-Bera test, was used to assess the distribution of the data. If the Jarque-Bera test statistic exceeds a significance level of 0.05, the data can be considered normally distributed.

Table 5. The Normality Test

Jarque-Bera	Probability
2.0879	.3521

The result of the normality test shows a probability value of 0.3521, which is greater than 0.05. Therefore, based on the normality test, the study data can be considered to follow a normal distribution. To assess the correlation between the independent variables, a

multicollinearity test was conducted. If the data are free from multicollinearity, the Variance Inflation Factor (VIF) values should be less than 10.

Table 6. The Multicollinearity Test Results

Variable	Coefficient Variance	Uncertered VIF	Centered VIF
C	.0249	4.1668	NA
DER	.0954	3.3085	1.1608
CR	.0004	1.4741	1.0660

The results of the multicollinearity test indicate that there are no signs of multicollinearity, as the Variance Inflation Factor (VIF) values are all below 10. Heteroscedasticity tests were conducted to determine whether the variance of residuals is constant across observations in

the regression model. If the p-value for heteroscedasticity is greater than 0.05, it suggests that there are no indications of heteroscedasticity in the data.

Table 7. The Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	.2697	.1452	1.8568	.0663
DER	.0968	.2839	.3409	.7339
CR	-.0274	.0175	-1.5647	.1208

The results of the heteroscedasticity test show a probability value greater than 0.05, indicating that there are no signs of heteroscedasticity in the data. Autocorrelation was assessed using the Lagrange Multiplier (LM) test and the Durbin-Watson (D-W) test. Autocorrelation is

not present when the F-statistic is greater than 0.05. Additionally, autocorrelation is considered absent if the Durbin-Watson statistic (D-W) falls between the lower (dL) and upper (dU) bounds, specifically when $4-dU > D-W > dU$.

Table 8. The Autocorrelation Test Results

R-squared	.7333	Root MSE	.1106
Adjusted R-squared	.6532	Mean dependent var	.3888
S.E. of regression	.1267	S.D. dependent var	.2151
F-statistic	9.1648	Sum squared resid	1.2838
Prob(F-statistic)	.1145	Durbin-Watson stat	1.9869

The results of the autocorrelation test indicate that the issue of autocorrelation does not arise in this study. Specifically, the Durbin-Watson statistic (DW) is 1.9869, with the lower and upper bounds for the Durbin-Watson statistic (dL and dU) being 1.6196 and 1.7392, respectively. Additionally, the values $4-dU=2.2608$ and $4-dL=2.3804$. Based on the Durbin-Watson statistic, the condition $dL < dU < DW < 4-dU < 4-dL$ holds, and the probability value of 0.1145, which is greater than 0.05, further supports the conclusion that there is no autocorrelation.

Panel Data Regression Analysis

The t-test results provide partial insight into the relationship between the exogenous and endogenous variables. The effect of an exogenous variable on an endogenous variable is considered significant if the probability value (p-value) is less than 0.05. Conversely, if the p-value is greater than 0.05, the exogenous variable is deemed to have no significant effect on the endogenous variable.

Table 9. Estimation of Panel Data Regression Coefficient Values

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	-.0577	.0191	17.8938	.003
CR	5.5278	.3089	-3.0211	.000
C	10.5904	4.0364	2.1577	.000
R-squared	.7962			
Adjusted R-squared	.7881			
F-statistic	97.694			
Prob(F-statistic)	.0000			

A regression line equation based on the above table can be created, which is as follows:
 $ROA = 10,5904 - 0,0577 \text{ DER} + 5,5278 \text{ CR} + e$

Table 9 presents the results of the panel data regression analysis. The positive value of 10.5904 suggests a unidirectional relationship between the endogenous and exogenous variables. This implies that the Return on Assets (ROA) would be 10.5904 if both the Current Ratio (CR) and Debt-to-Equity Ratio (DER) were 0% or remained unchanged. The Debt-to-Equity Ratio has a significant negative effect on ROA, with a coefficient of -0.0577 and a probability value of 0.000, which is less than 0.05 (confirming H1). The regression model also indicates a substantial positive relationship between ROA and the Current Ratio (CR), as evidenced by a coefficient of 5.5278 and a probability value of 0.003, which is also less than 0.05 (confirming H2). The coefficient of determination (R^2) provides insight into the explanatory power of the exogenous variables on the endogenous variable. R^2 ranges from 0 to 1, where a lower R^2 value suggests that the exogenous variables have limited explanatory power over the endogenous variable. However, an R^2 value closer to 1 indicates that the exogenous variables explain nearly all the variation in the endogenous variable.

Table 10. Test Coefficient of Determination

	R-Square (R^2)	Adjusted R-squared
ROA	.7962	.7881

The R-squared value of 0.7962, or 79.62%, indicates a moderate level of explanatory power, suggesting that the Debt-to-Equity Ratio (DER) and Current Ratio (CR) collectively account for approximately 79.62% of the variation in Return on Assets (ROA).

The remaining 20.38% of the variation may be influenced by other variables not included in this study.

Discussion

The results of the data analysis reveal that the Debt-to-Equity Ratio (DER) has a significant negative effect on Return on Assets (ROA) for companies listed on the Jakarta Islamic Index (JII 30). This finding aligns with agency theory, which posits that a company's agency burden increases with its level of debt. As businesses take on more debt, they must also expand their assets to offset the debt load. Failure to generate additional assets to manage substantial debts can lead to financial difficulties, and in extreme cases, bankruptcy. The increase in debt raises the probability of such financial distress. These results are consistent with the study by Fianti *et al.* (2022), which found a significant negative effect of DER on ROA. However, the findings contradict the research by Wahyuni (2018), who concluded that DER does not significantly affect ROA. In contrast, the analysis indicates that the Current Ratio (CR) has a significant positive effect on ROA for the JII 30 companies. A high CR signifies that the company has sufficient liquid assets to meet its short-term obligations. Companies with a higher CR typically have more cash, inventory, and receivables, allowing them to settle debts promptly. This liquidity facilitates smoother operations and better prepares companies to respond to market dynamics or unforeseen financial needs, such as sudden investments or economic shocks. Sufficient liquidity enhances a company's resilience, contributing to its ability to maintain stable business performance. These findings support the studies by Wahyuni (2018) and Fianti *et al.* (2022), which also concluded that CR significantly affects ROA.

Conclusion

Based on the data analysis and discussion, the study concludes that Return on Assets (ROA) is significantly influenced by both the Debt-to-Equity Ratio (DER) and the Current Ratio (CR). The R-squared value of 0.7962, or 79.62%, indicates a moderate explanatory power, suggesting that DER and CR together account for a significant portion of the variation in ROA. However, the remaining 20.38% of the variation may be influenced by other variables not included in this study. A notable limitation of this study is its focus solely on Indonesian companies. Future research is recommended to expand the scope of the sample to include a broader range of industries and geographical regions.

Additionally, further exploration of other factors that impact a company's capacity to predict financial distress would provide a more comprehensive understanding. For instance, insights into a company's ability to secure new contracts could enhance the predictive power regarding future earnings and financial stability. Such information would enable businesses to take corrective actions before experiencing financial difficulties or even bankruptcy. In conclusion, this study offers valuable insights for companies listed on the Jakarta Islamic Index (JII 30) by providing an assessment of their financial status, helping to categorize them into safe, gray, or distressed zones. This information can assist in making informed management decisions and improving financial performance.

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