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The Effect of Rentability and Liquidity on Capital Structure of Banking Companies Listed on the Indonesia Stock Exchange (IDX) 2022-2024

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ABSTRACT

The banking sector plays an important role in the Indonesian economy as a financial intermediary that collects and distributes funds to support economic activities. The financial performance of banks is closely related to their ability to generate returns (rentability) and maintain liquidity to meet short-term obligations. Capital structure is a crucial aspect of banking financial policy as it reflects the balance between debt and equity financing. This study aims to analyze the effect of rentability and liquidity on the capital structure of banking companies listed on the Indonesia Stock Exchange during the 2022-2024 period. This study employs a quantitative approach using secondary data obtained from the annual financial statements of banking companies. The research sample consists of 43 banking companies selected through purposive sampling, resulting in 129 observations. Data analysis techniques include descriptive statistical analysis, panel data regression analysis, classical assumption tests, hypothesis testing, and coefficient of determination analysis using EViews 13 software. The results indicate that rentability does not have a significant effect on capital structure, while liquidity has a negative and significant effect on capital structure. Simultaneously, rentability and liquidity significantly affect capital structure, indicating that banking capital structure decisions are influenced by both rentability and liquidity conditions in accordance with the Trade-Off Theory.

Keywords: *Banking, Capital Structure, Liquidity, Rentability*

1. INTRODUCTION

The banking sector plays a strategic role in the Indonesian economy through its intermediation function, which channels funds from surplus units to deficit units. To maintain the effectiveness of this function, banks are required to sustain sound financial conditions, reflected in their ability to generate earnings, manage liquidity, and maintain an adequate capital structure. This requirement is consistent with Financial Services Authority Regulation (POJK) No. 4/POJK.03/2016 on the Assessment of Commercial Bank Soundness, which emphasizes rentability and liquidity as key indicators of bank health and highlights the importance of capital structure in ensuring banking resilience.

During the 2022-2024 period, the Indonesian banking industry experienced significant dynamics, including intensified competition, accelerated digitalization of financial services, and changes in funding and lending patterns. Reports from the Financial Services Authority indicate fluctuations in rentability and liquidity indicators during this period, reflecting changes in banks' operational conditions. In this context, capital structure becomes a strategic component as it determines the balance between debt and equity in maintaining financial stability and efficiency.

According to [1] define capital structure as the composition of funding used by firms to finance operational and investment activities. In the banking sector, capital structure influences risk management and

the maintenance of public confidence. In line with Trade-Off Theory, changes in rentability and liquidity may affect financing decisions and the formation of banks' capital structures.Previous studies report mixed findings regarding the effects of rentability and liquidity on capital structure. Some studies find significant effects, while others report inconsistent results, particularly in the banking sector, which is characterized by distinct funding structures and regulatory frameworks. Moreover, most prior studies focus on periods before 2022 or on non-banking sectors, limiting their relevance to current banking conditions.

Therefore, this study aims to analyze the effect of rentability and liquidity on the capital structure of banking companies listed on the Indonesia Stock Exchange during the 2022-2024 period. The study is expected to contribute theoretically by applying Trade-Off Theory and practically by providing insights for bank management, investors, and regulators regarding the determinants of capital structure in the Indonesian banking sector.

2. LITERATURE REVIEW

The Trade-Off Theory was first introduced by [2], stating that firms determine an optimal capital structure by balancing the tax benefits of debt against the costs associated with financial distress and agency problems. While debt financing provides tax advantages through interest tax shields, excessive debt increases the risk of bankruptcy and financial distress [3]. According to [1], the use of debt can increase firm value up to an optimal point. Beyond this level, additional debt no longer provides net benefits, as bankruptcy and agency costs outweigh tax advantages. Therefore, an optimal capital structure is achieved when the benefits and costs of debt financing are balanced. [4] classifies bankruptcy costs into direct and indirect costs. Direct costs include legal and administrative expenses, while indirect costs involve loss of reputation, reduced external trust, and declining business opportunities. These costs must be carefully considered in capital structure decisions.

[5] emphasizes that management increases debt as long as the marginal benefits exceed the marginal costs. Once financial distress costs surpass tax benefits, debt financing becomes inefficient. [6]-[7] further explain that the Trade-Off Theory incorporates corporate taxes, personal taxes, and financial distress costs in explaining firms' capital structure choices. In the banking sector, the Trade-Off Theory is particularly relevant due to high leverage and strict regulatory requirements. [8] notes that banks have dynamic target capital structures that depend on operational characteristics, risk levels, and market conditions. The application of this theory is reflected in banks' efforts to maintain capital and liquidity ratios within regulatory limits set by the Financial Services Authority.

Based on the Trade-Off Theory, the relationship between rentability, liquidity, and capital structure can be explained through banks' ability to generate earnings and manage funds efficiently. Higher rentability is expected to be positively associated with capital structure, as profitable banks are considered more capable of bearing debt-related risks. In contrast, liquidity is expected to have a negative relationship with capital structure, as banks with strong liquidity positions tend to rely more on internal funding and reduce dependence on external debt. The Trade-Off Theory thus provides a conceptual framework for understanding how banks balance the benefits and risks of debt in achieving an optimal capital structure.

2.1 Capital Structure

Capital structure refers to the composition of debt and equity used by a firm to finance its operational activities and long-term investments. According to [1], an optimal capital structure represents an ideal mix of debt and equity that minimizes the cost of capital while maximizing firm value. This decision is critical as it directly affects financial risk and expected returns. [9] explains that capital structure is reflected in the ratio of long-term financing derived from debt and equity, while [10] emphasizes that capital structure indicates a firm's ability to balance internal and external sources of funds to maintain financial stability. In the banking sector, capital structure plays a strategic role due to high leverage levels and strict regulatory oversight. Therefore, sound capital structure management is essential for maintaining public trust, ensuring liquidity, and optimizing banks' financial performance amid evolving economic and regulatory conditions.

2.2 Rentability

Rentability refers to a firm's ability to generate profits through the effective and efficient utilization of its resources. According to [11] rentability reflects a company's capacity to earn profits from operational activities and indicates managerial efficiency in managing assets and capital. A high level of rentability signifies the firm's success in creating value and controlling operational costs effectively [12]. In the banking sector, rentability plays a strategic role as it reflects the effectiveness of banks in performing their intermediation function and managing operational risks and costs. The Financial Services Authority (OJK) considers rentability as a key component in assessing banks' financial soundness. High rentability indicates banks' ability to generate income from productive asset management, while low rentability may signal declining managerial efficiency and weaker intermediation

performance. Therefore, rentability serves as an essential indicator of banking stability and competitiveness.

2.3 Liquidity

Liquidity refers to a firm's ability to meet short- term obligations using its current assets. According to [13], liquidity is associated with the firm's capacity to convert assets into cash or obtain cash to settle short-term liabilities. It also reflects the effectiveness of the operating cycle in maintaining stable cash flows. [14] states that liquidity indicates a company's ability to fulfill its financial obligations on time. In the banking industry, liquidity plays a crucial role as it is directly related to depositor confidence and financial system stability. Banks with high liquidity levels are able to maintain smooth operations and meet customer withdrawal demands without disrupting financing activities, thereby indicating sound financial management.

2.4 The Effect of Rentability on Capital Structure

Rentability reflects a bank's ability to generate profits from its managed assets and indicates operational effectiveness and income stability. Previous studies show that higher rentability increases a firm's capacity to use debt financing, as demonstrated by [15]-[16] who find a positive effect of profitability on capital structure. This relationship is consistent with Trade- Off Theory, which suggests that firms with strong profit-generating capacity tend to rely more on debt due to lower bankruptcy risk, a better ability to meet interest obligations, and the benefits of tax shields, thus leading to the formulation of the first hypothesis that rentability has a positive effect on capital structure in the banking sector.

2.5 The Effect of Liquidity on Capital Structure

Liquidity reflects a bank's ability to meet short- term obligations using internal funds. According to Trade-Off Theory, a high level of liquidity enables to meet depositor obligations without increasing financing burdens. However, excessively high liquidity may indicate inefficient fund allocation, while low liquidity can encourage banks to increase debt to sustain operations. This relationship reflects a trade-off between liquidity security and financing efficiency, thus leading to the formulation of the second hypothesis that liquidity has a negative effect on capital structure in the banking sector.

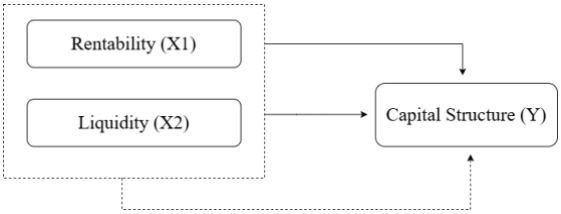


Figure 1. Conseptual Framework

3. METHOD

This study employs a quantitative approach with an associative-causal design to examine the relationships among financial variables in the banking sector. The study uses secondary data in the form of annual financial statements of banking companies listed on the Indonesia Stock Exchange (IDX) for the 2022-2024 period. Data were collected using documentation techniques from official IDX publications www.idx.co.id. The sampling method applied in this study is purposive sampling, with the following criteria: (1) banking companies listed on the Indonesia Stock Exchange during the 2022-2024 period, and (2) Islamic banking companies were excluded from the sample. The research population consists of 47 banking companies listed on the IDX. Based on these criteria, 43 banking companies were selected as the research sample. With a three-year observation period, the total number of observations used in this study amounts to 129 observations. Data processing and statistical analysis were conducted using EViews version 13.

Operational Variables

The operational variables in this study consist of rentability and liquidity as independent variables, and capital structure as the dependent variable. In this study, capital structure is proxied by the Debt to Equity Ratio (DER), which is calculated using the following formula:

$$DER = \frac{Total\ Liabilities}{Total\ Equity} \times\ 100\%$$

In this study, rentability is proxied by Return on Assets (ROA), which is calculated using the following formula:

$$ROA = \frac{Net\ Income}{Total\ Assets} \times\ 100\%$$

In this study, liquidity is proxied by the Loan to Deposit Ratio (LDR), which is calculated using the following formula:

$$LDR = \frac{Total\ Loans}{Total\ Deposits}\ x\ 100\%$$

4. FINDINGS AND DISCUSSION

The following presents the result of the descriptive statistical analysis before data transformation.

	Y	X1	X2
Mean	12.94242	0.800512	110.4468
Median	4.578740	0.768512	88.17841
Maximum	1088.350	4.416733	716.4203
Minimum	0.005209	-7.618556	6.332898
Std. Dev.	95.46753	1.789101	101.0847
Observations	129	129	129

Figure 2. Statistical Analysis Before Transformation
Source: Data Processed EViews 13 (2025)

Based on the descriptive statistics table before data transformation, the capital structure (DER) has a mean value of 12.94242 with a median of 4.578740. The maximum value of DER is 1,088.350, while the minimum value is 0.005209. The standard deviation of 95.46753 indicates a very high level of data dispersion. The total number of observations for this variable is 129.

The rentability (ROA) has a mean value of 0.800512 with a median of 0.768512. The maximum ROA value is 4.416733, while the minimum value reaches -7.618556, indicating the presence of banks experiencing negative profitability during the observation period. The standard deviation of 1.789101 reflects a considerable variation in ROA values. The number of observations for this variable is also 129.

The liquidity (LDR) records a mean value of 110.4468 with a median of 88.17841. The maximum liquidity value is 716.4203, while the minimum value is 6.332898. This variable shows a standard deviation of 101.0847, indicating a high degree of variability among banks. The total number of observations for this variable is 129.

	Y	X1	X2
Mean	1.601401	0.740047	4.516469
Median	1.718963	0.631592	4.490639
Maximum	6.993336	2.153918	6.575662
Minimum	0.005196	0.000848	1.992371
Std. Dev.	0.758162	0.492403	0.590070
Observations	129	129	129

Figure 3. Statistical Analysis After Transformation
Source: Data Processed EViews 13 (2025)

Based on the results of the descriptive statistics analysis after data transformation, the capital structure (DER) has a mean value of 1.601401 with a median of 1.718963. The maximum value of DER is 6.993336, while the minimum value is 0.005196. The standard deviation of 0.758162 indicates that the dispersion of capital structure data becomes more controlled after transformation. The total number of observations for this variable is 129. The rentability (ROA) records a mean value of 0.740047 with a median of 0.631592.

The maximum ROA value is 2,153918, while the minimum value is 0.000848. the standard deviation of 0.492403 indicates a relatively lower variation in ROA values after transformation. The number of observations for this variable is 129. The liquidity (LDR) has a mean value of 4.516469 with a median of 4.490639. The maximum liquidity value is 6.575662, while the minimum value is 1.992371. The standard deviation of 0.590070 suggests that liquidity data dispersion becomes more stable after transformation. The total number of observations for this variable is 129.

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.972769	(42,84)	0.5291

Figure 4. Chow Test Before Data Transformation
Source: Data Processed EViews 13 (2025)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.083581	2	0.9591

Figure 5. Hausman Test Before Data Transformation

Source: Data Processed EViews 13 (2025)

	Test Hypothesis		
	Cross-section	Time	Both
Breusch -Pagan	0.012667 (0.9104)	0.109347 (0.7409)	0.122014 (0.7269)

Figure 6. Lagrange Multiplier Test Before Data Transformation
Source: Data Processed EViews 13 (2025)

Based on the results of the Chow Test before data transformation, the probability value is 0.5291, which is greater than the 5% significance level. This result indicates that the Common Effect Model (CEM) is more appropriate than the Fixed Effect Model. The Hausman Test before data transformation shows a probability value of 0.9591, exceeding the 0.05 significance level, suggesting that the Random Effect Model (REM) is preferable to the Fixed Effect Model. The results of the Lagrange Multiplier (Breusch– Pagan) Test before data transformation indicate probability values of 0.9104 for cross-section effects, 0.7409 for time effects, and 0.7269 for combined effects, all of which are greater than 0.05. These findings indicate the absence of cross-section and time effects, implying that the Common Effect Model (CEM) is more suitable than the Random Effect Model. Based on the Chow Test, Hausman Test, and Lagrange Multiplier Test before data transformation, the selected panel data regression model is the Common Effect Model (CEM).

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.868659	(42,84)	0.0000

Figure 7. Chow Test After Data Transformation
Source: Data Processed EViews 13 (2025)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.467677	2	0.4801

Figure 8. Hausman Test After Data Transformation
Source: Data Processed EViews 13 (2025)

	Test Hypothesis		
	Cross-section	Time	Both
Breusch -Pagan	17.83923 (0.0000)	1.401497 (0.2365)	19.24072 (0.0000)

Figure 9. Lagrange Multiplier Test After Data Transformation
Source: Data Processed EViews 13 (2025)

Based on the results of the Chow Test after data transformation, the probability value is 0.0000, which is below the 5% significance level. This result indicates that the Fixed Effect Model (FEM) is more appropriate than the Common Effect Model. The Hausman Test after data transformation shows a probability value of 0.4801, which is greater than 0.05, suggesting that the Random Effect Model (REM) is more suitable than the Fixed Effect Model. In addition, the results of the Lagrange Multiplier (Breusch–Pagan) Test after data transformation indicate probability values of 0.0000 for cross-section effects, 0.2365 for time effects, and 0.0000 for combined effects. These findings indicate the presence of cross-section effects, implying that the Random Effect Model (REM) is more appropriate than the Common Effect Model. Therefore, based on the Chow Test, Hausman Test, and Lagrange Multiplier Test after data transformation, the selected panel data regression model is the Random Effect Model (REM).

Panel Data Analysis

Based on the panel data regression results, the estimated model is

$$Y = 3.258 - 0.043X1 - 0.359X2$$

The constant value of 3.258 indicates that when profitability and liquidity are equal to zero, the banks' capital structure remains at its baseline level. The Rentability variable has a negative coefficient of -0.043, indicating that higher profitability is associated with lower leverage. This suggests that more profitable banks tend to rely more on internal financing rather than debt. Meanwhile, liquidity shows a negative coefficient of -0.359, implying that higher liquidity leads to a lower proportion of debt in the capital structure. Banks with strong liquidity positions tend to use internal funds to support their operations, thereby reducing reliance on external financing.

Hypothesis Testing t-Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.258137	0.525985	6.194351	0.0000
X1	-0.043586	0.147890	-0.294719	0.7687
X2	-0.359679	0.116897	-3.076888	0.0026

Figure 10. t-Test Result
Source: Data processed using EViews 13 (2025)

Based on the t-test results, the rentability variable has a probability value of 0.7687 (> 0.05), indicating that rentability does not have a significant effect on the capital structure of banking companies during the 2022–2024 period. Meanwhile, the liquidity variable has a probability value of 0.0026 (< 0.05) with a negative coefficient, indicating that liquidity has a negative and significant effect on the capital structure of banking companies during the 2022–2024 period. This result suggests that banks with higher liquidity levels tend to use less debt in their capital structure; therefore, the hypothesis regarding the effect of liquidity on capital structure is accepted.

	Weighted Statistics
R-squared	0.075445
Adjusted R-squared	0.060770

Figure 11. Coefficient of Determination (R^2)
Source: Data processed using EViews 13 (2025)

Based on the test results, the R-squared value is 0.075445, indicating that rentability and liquidity are able to explain 7.54 percent of the variation in capital structure. Meanwhile, the Adjusted R- squared value of 0.060770 suggests that 6.08 percent of the variation in capital structure can be explained by rentability and liquidity, while the remaining 93.92 percent is influenced by other variables outside the research model.

The Effect of Rentability on Capital Structure

The hypothesis testing results indicate that rentability has no significant effect on the capital structure of banking companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This finding suggests that banks' ability to generate profits has not been a primary determinant in debt financing decisions. The results are not fully consistent with previous studies by Fitria Khairun Nisa (2016) and Lambok Nababan (2023), which found a positive relationship between profitability and capital structure, indicating that the effect of rentability is context-dependent and influenced

by sector characteristics and research periods. From the perspective of Trade-Off Theory, although higher rentability theoretically encourages the use of debt, capital structure decisions in the banking sector are also shaped by regulatory constraints, prudential principles, and managerial policies.

The Effect of Liquidity on Capital Structure

The hypothesis testing results indicate that liquidity has a negative and significant effect on capital structure in banking companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This finding suggests that banks with higher liquidity levels tend to use lower proportions of debt, as they are able to finance operations and meet short- term obligations using internal funds.

This result is consistent with the Trade-Off Theory, which emphasizes the balance between the benefits and risks of debt usage. Adequate liquidity enables banks to reduce financial risk and maintain cash flow stability, thereby lowering the need for external financing. This finding also supports the study by Cintya Billytona et al. (2024), which concludes that firms with high liquidity tend to rely less on debt in their capital structure.

5. CONCLUSIONS

This study aims to examine the effect of rentability and liquidity on the capital structure of banking companies listed on the Indonesia Stock Exchange during the 2022-2024 period. Based on the results of panel data regression analysis, t-test, F-test, and coefficient of determination, several conclusions can be drawn.First, rentability does not have a significant effect on capital structure in the banking sector. This finding indicates that banks' ability to generate profits from their assets is not a primary factor in determining debt financing decisions.

Second, liquidity has a negative and significant effect on capital structure. Higher liquidity levels are associated with lower debt usage, suggesting that banks with strong liquidity positions tend to rely more on internal financing rather than external debt. Third, rentability and liquidity simultaneously have a significant effect on capital structure. This result confirms that banking financing decisions are influenced by a combination of profitability and liquidity conditions, rather than by a single financial indicator.

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