



Journal of Social and Economics Research

Volume 7, Issue 2, December 2025

P-ISSN: 2715-6117

E-ISSN: 2715-6966

Open Access at: <https://idm.or.id/JSER/index.php/JSER>

ANALYSIS OF THE INFLUENCE OF NIM, NPL, AND BOPO ON ROA OF FINANCING COMPANIES FOR THE PERIOD 2021-2024

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ARTICLE INFO

Keywords:

Net Interest Margin, Non-Performing Loan, Operational Expense to Operational Income Ratio, Return on Assets.

ABSTRACT

This study aims to analyze the impact of Net Interest Margin (NIM), Non-Performing Loan (NPL), and the Operational Expense to Operational Income Ratio (BOPO) on Return on Assets (ROA) in financing companies in Indonesia. This study employs a quantitative approach using secondary data sourced from 11 financing companies listed on the Indonesia Stock Exchange (IDX). The analysis is conducted using multiple regression methods, including descriptive statistical tests, classical assumption tests, coefficient of determination calculations, and hypothesis testing to evaluate the influence of NIM, NPL, and BOPO on ROA. The analysis results show that Net Interest Margin (NIM), Non-Performing Loan (NPL), and the Operational Expense to Operational Income Ratio (BOPO) have a significant impact, both partially and collectively, on Return on Assets (ROA). The coefficient of determination (R-Square) value of 81.2% indicates that these three variables provide a strong contribution in explaining the variation in ROA among financing companies in Indonesia.

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INTRODUCTION

The presence of financing companies plays a vital role in the non-bank financial ecosystem in Indonesia. According to the Financial Services Authority (OJK), financing companies are categorized as non-bank financial institutions that provide financing for the purchase of goods or services. Financing activities are carried out either directly or in collaboration with third parties. The Financial Services Authority (OJK) states that these institutions serve as the backbone of the real sector's growth through consumer financing and business capital support.

However, over the past three years, specifically from 2022 to 2024, there has been a declining trend in Return on Assets (ROA) within the Financing Company Industry, as indicated in the following data:

Table 1. Return on Assets (ROA) Data for the Financing Industry

Description	2022	2023	2024
<i>Return on Aset (ROA)</i>	5,67%	5,58%	5,02%

Source: Financing Institution Statistics (www.ojk.go.id)

Referring to the data presented earlier, this phenomenon raises concerns and has become a point of focus for investors, regulators, and industry players alike. The decline in Return on Assets (ROA) not only reflects a decrease in the efficiency and profitability of companies but may also serve as an indicator of a worsening quality in the financing portfolios held.

The decline in Return on Assets (ROA) is suspected to be primarily influenced by the increase in the Non-Performing Loan (NPL) ratio, as well as the decrease in operational efficiency, which is reflected in the BOPO ratio, coupled with the intense competition that pressures the Net Interest Margin (NIM) due to competitive interest rate offerings.

Table 2. Non-Performing Loan (NPL) Data for the Financing Industry

Description	2022	2023	2024
<i>Non-Performing Loan (NPL)</i>	2,32%	2,44%	2,70%

Source: Financing Institution Statistics (www.ojk.go.id)

The data shows that the NPL in the financing industry has increased from 2022 to 2024, with a peak of 2.70% in 2024. This increase indicates a worsening of non-performing loans, forcing companies to allocate more funds for credit loss provisions, thereby reducing profitability and the ability of assets to generate returns.

Table 3. Operational Expense to Operational Income Ratio (BOPO) Data for the Financing Industry

Description	2022	2023	2024
<i>Beban Operasional terhadap Operating Income (BOPO)</i>	75,64%	76,89%	79,36%

Source: Financing Institution Statistics (www.ojk.go.id)

Moreover, the Operational Expense to Operational Income Ratio (BOPO) shows a rising trend from 2022 to 2024, reaching 79.36% in 2024. This increase in BOPO indicates that the operational costs incurred are higher compared to the operational income earned, reflecting a decline in operational efficiency within the company. This has a negative impact on ROA, as more resources are allocated to cover operational costs rather than generating profits.

This study aims to analyze the impact of Non-Performing Loan (NPL), the Operational Expense to Operational Income Ratio (BOPO), and Net Interest Margin (NIM) on company profitability, measured through Return on Assets (ROA), in the financing sector during the 2022–2024 period.

LITERATURE REVIEW

Financial Management

Financial management is a discipline focused on the efficient and effective management of capital, loans, and various other business funding sources, accompanied by accurate decision-making to maximize profits and increase company

value. In general, financial management involves the processes of planning, organizing, directing, and controlling financial activities, such as fund procurement and its utilization within the company. These activities are carried out based on the principles of general management applied to the company's financial resources. Financial management is responsible for overseeing all financial activities of the company, including managing working capital funding, fund utilization, resource allocation, and asset management to achieve the company's main objectives (Astuti et al., 2022).

Agency Theory

According to Wahyuni et al. (2022), agency theory is a concept that describes the relationship between the principal (the principal) and the agent (the agent), where the principal assigns the agent to provide services and delegates decision-making authority. This relationship often results in information asymmetry, where the agent has broader access to the company's information than the principal. As a consequence, the agent may take actions that prioritize personal interests, while the principal, with limited information, faces difficulties in effectively monitoring and controlling the agent's actions, especially when crucial company information is known only by the agent (Wahyuni et al., 2022).

Setiadi & Dewi (2023) explain that agency theory refers to the relationship between company management acting as the agent, while the company owner acts as the principal. The principal gives the mandate to the agent to carry out all activities and decision-making on their behalf. The company owner (principal) desires complete and transparent information regarding the company's activities, including how management (the agent) manages the funds invested in the company.

Ratio Analysis

According to Fahmi in Tahik et al. (2024), financial ratios are defined as the comparison between two figures in the financial statements used to assess the differences between them. Financial ratios serve as instruments to evaluate a company's performance by dividing one value by another in the financial statements.

Arini & Iskandar (2022) explain that financial ratio analysis is a tool that helps assess the effectiveness of management in previous periods while also forecasting potential performance in the future. Through financial performance analysis, analysts have the ability to design and implement strategies that align with the goal of maximizing the company's value and prosperity.

Profitabilitas (ROA)

Return on Assets (ROA) is used to assess the extent to which management can generate profits from the utilization of the company's total assets. A high ROA value reflects the company's effective performance in managing productive assets to generate profits. Conversely, a low ROA indicates the company's limitations in optimizing its assets to generate profits (Siagian et al., 2021).

$$ROA = \frac{\text{Pre – Tax Profit}}{\text{Total Assets}} \times 100\%$$

Raiyan et al. (2020) state that ROA is a ratio that compares net profit to total assets, thereby reflecting the level of profit generated from all assets owned by the company. Meanwhile, Fahmi in Nurmiati & Pratiwi (2022) mentions that ROA, also known as return on investment, reflects the extent to which investments made can yield profits as expected. This investment essentially refers to the company's assets that are used or managed.

Credit Risk

According to Kasmir in Jaeng (2024), Non-Performing Loan (NPL), also known as credit risk, refers to the potential for losses arising from the debtor's inability to repay the loan provided. The higher the NPL ratio, the lower the credit quality, resulting in an increase in non-performing loans and potentially creating problems for the company. An increase in NPL has a negative impact as it can reduce the company's capital, whereas a low NPL indicates a smaller credit risk.

The formula used to calculate NPL in a company is as follows:

$$NPL = \frac{\text{Non – Performing Loans}}{\text{Total Loans}} \times 100\%$$

Yen & Nuryasman (2023) explain that NPL is a ratio that represents the percentage of non-performing loans compared to the total loans granted, making it a key indicator of credit risk. The smaller the NPL ratio, the lower the amount of non-performing loans in the company. Akmal and Kusumastuti (2024) state that NPL or non-performing loans are defined as loans that experience delays in repayment or are in default. A high NPL can lead to: (1) A decrease in profitability due to the lack of income from defaulted loans; (2) Increased liquidity risk, making it difficult for the company to meet its funding needs; (3) Potential systemic non-performing loans that could trigger a financial crisis; (4) Barriers to economic growth and financial system stability.

Net Interest Margin (NIM)

According to Taswan in Santhuso et al. (2023), Net Interest Margin (NIM) is a ratio used to assess how well a company can manage its productive assets. This ratio includes the management of funds, both those generating interest income and those incurring interest expenses.

The formula to calculate NIM for a company is as follows:

$$NIM = \frac{\text{Net Interest Income}}{\text{Productive Assets}} \times 100\%$$

Kristian in Fadli (2024) explains that NIM assesses the extent to which management has the ability to manage productive assets to generate net interest income, making it an important indicator that needs to be monitored regularly.

Akbar Nasution (2024) defines NIM as the net interest income derived from the difference between the total interest received on assets and the total interest expenses associated with the funds managed.

Operational Risk

Operational risk is defined as the potential for loss or inefficiency arising from internal process failures, human errors, system weaknesses, or external events (Idroes in Sante et al., 2021). The BOPO ratio is used as a tool to evaluate a company's operational risk by comparing operational expenses to operational income, thereby assessing the effectiveness and performance of financing companies in managing their operational activities.

The BOPO ratio reflects the quality of the company's efficiency in carrying out its core business activities, such as providing credit that generates income (Setyaningsih, 2013).

$$BOPO = \frac{\text{Operating Expenses}}{\text{Operating Income}} \times 100\%$$

Kurniawan (2019) states that the BOPO ratio serves as an indicator to measure the bank's management ability to control operating costs in proportion to the income generated.

The BOPO ratio (Operating Expenses to Operating Income) reflects how efficiently a bank's operations are carried out in performing its activities. Operating expenses include interest payments to customers, while operating income is earned from the interest received from them (Prasetiono & Aulia, 2019).

Hypothesis Development

The Effect of Net Interest Margin on Return on Assets (ROA)

According to Taswan in Santhuso et al. (2023), Net Interest Margin (NIM) is a ratio used to measure a bank's ability to manage its productive assets, including the management of funds that generate interest as well as those that incur interest expenses. Meanwhile, according to Raiyan et al. (2020), Return on Assets (ROA) is a ratio used to compare net income with the total assets owned by the company, reflecting the amount of profit generated based on the value of assets owned. Previous studies by Nugroho et al. (2019), Stephanus (2023), and Pramana and Rahyuda (2021) show that NIM significantly affects ROA.

Therefore, the hypothesis is formulated as follows: H₁: Net Interest Margin (NIM) significantly affects ROA

The Effect of Non-Performing Loan on Return on Assets (ROA)

Siaw Yen and Nuryasman (2023) explain that NPL is a ratio that compares the amount of Non-Performing Loans with the Total Loans granted, indicating Credit Risk; the lower the NPL, the fewer non-performing loans there are. According to Raiyan et al. (2020), ROA reflects the net profit generated relative to the total assets of the company. Research by Sa'adah and Wahyuni (2023), Mandala et al. (2023), and Qauliyah and Sulistiawati (2024) found that NPL significantly impacts ROA.

Therefore, the hypothesis is formulated as follows: H₂: Non-Performing Loan (NPL) significantly affects ROA

The Effect of Operational Risk (BOPO) on Return on Assets (ROA)

Maroni and Simamora (2020) mention that BOPO, known as the efficiency ratio, serves to assess the extent to which management can manage Operating Expenses relative to the Operating Income generated. Raiyan et al. (2020) explain ROA as the ratio between net profit and the total assets owned by the company. Research by Dewanti et al. (2022), Yuliana and Lestari (2021), and Ramadanti and Setyowati (2022) shows that BOPO significantly impacts ROA.

From this, the hypothesis is formulated as follows: H₃: Operational Risk (BOPO) significantly affects ROA

The Effect of NIM, NPL, and BOPO on Return on Assets (ROA)

The results of studies by Nugroho et al. (2019), Stephanus (2023), and Pramana and Rahyuda (2021) show that NIM affects ROA. Additionally, the findings from studies conducted by Sa'adah and Wahyuni (2023), Mandala et al. (2023), and Qauliyah and Sulistiawati (2024) further support and demonstrate that NPL significantly affects ROA. Studies by Dewanti et al. (2022), Yuliana and Lestari (2021), and Ramadanti and Setyowati (2022) indicate that BOPO also significantly impacts ROA.

Based on these research findings, the hypothesis formulated is as follows: H₄: NIM, NPL, and BOPO simultaneously significantly affect Return on Assets (ROA)

METHOD

The object of this study includes the population of financing companies listed as issuers on the Indonesia Stock Exchange (IDX) for the period 2021-2024. The financing sector is chosen because it plays a significant role in Indonesia's economic development, particularly by providing funds to the public for the purchase of motor vehicles used for both business activities and daily operations. The provision of non-cash financing (credit) contributes to the profitability of the company. According to data from the website www.idxchannel.com, there are 14 financing companies listed as publicly traded companies on the Indonesia Stock Exchange (IDX).

The sample in this study consists of companies that meet the criteria established. The criteria used to determine the sample in this study are as follows:

1. Financing companies listed on the Indonesia Stock Exchange (IDX) during the period 2021-2024.
2. Companies that consistently publish financial statements and annual reports throughout the research period.
3. Companies that provide complete data according to the variables to be applied in this study. In addition, these companies must provide data for the research variables consistently from 2021 to 2024.

The sampling technique applied is saturated sampling, which is a method where the entire population that meets the criteria is selected as the research sample. According to Sugiyono (2019), the saturated sampling method is applied when the entire population is used as the sample. Out of the 14 companies, 11 companies met these criteria and were selected as the sample. Three companies (BBLD, DEFI, and FUJI) were eliminated because the data for variables such as ROA and NPL were not

consistently available over four consecutive years.

This study uses secondary data obtained from the annual reports and financial statements of financing companies listed on the Indonesia Stock Exchange (IDX) for the period 2021–2024. All these documents were accessed through the official websites of each company, as well as from the official IDX website under the financial statements and annual report sections.

Data analysis and hypothesis testing in this study will be conducted using multiple regression analysis. The data processing will be applied using SPSS version 29. In this study, the following regression model is applied:

$$ROA = \gamma_1 NIM + \gamma_2 NPL + \gamma_3 BOPO + \varepsilon_2$$

Explanation:

ROA: Return on Assets

$\gamma_1, \gamma_2, \gamma_3$: Regression coefficients

NIM: Net Interest Margin

NPL: Non-Performing Loan

BOPO: Operational Expense to Operating Income Ratio

ε_2 : Error or residual for the regression equation

RESULTS AND DISCUSSION

Multiple Regression Analysis

Multiple regression is used to estimate the changes in the dependent variable influenced by two or more independent variables acting as predictor factors. This analysis requires at least two independent variables. The results of the multiple regression analysis in this study are presented in the following table:

Table 4. Multiple Regression Analysis

Coefficients ^a									
Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B Lower Bound Upper Bound		Collinearity Statistics Tolerance VIF
1	(Constant)	.060	.009		6.722	<.001	.042	.078	
	NIM	.174	.041	.302	4.232	<.001	.091	.258	.925 1.081
	NPL	-.657	.148	-.325	-4.431	<.001	-.957	-.358	.876 1.142
	BOPO	-.045	.004	-.775	-10.777	<.001	-.053	-.036	.910 1.099

a. Dependent Variable: ROA

The regression equation obtained from the table is as follows: $ROA = 0.060 + 0.174NIM - 0.657NPL - 0.045BOPO$. Constant Value = 0.060 indicates that if NIM, NPL, and BOPO are constant (0), ROA will be 0.060. NIM Coefficient = 0.174 indicates that for every 1-unit increase in NIM, ROA will increase by 0.174 units, assuming NPL and BOPO are constant (0). NPL Coefficient = -0.657 shows that for every 1-unit increase in NPL, ROA will decrease by 0.657 units, assuming NIM and BOPO are constant (0). BOPO Coefficient = -0.045 means that for every 1-unit increase in BOPO, ROA will decrease by 0.045 units, assuming NIM and NPL are constant (0).

The sign of the coefficients shows that NIM has a positive effect on ROA, indicating that an increase in NIM will increase ROA. Conversely, the negative coefficient for NPL shows a negative effect on ROA, indicating that an increase in NPL will lead to a lower ROA. Furthermore, when comparing the beta coefficients of all independent

variables, the NPL variable has the largest beta coefficient with a value of -0.657. Therefore, it can be concluded that the research findings show that NPL is the main variable that has the greatest impact on ROA

Coefficient of Determination

The coefficient of determination is used to identify the strength of the relationship between the independent variables (NIM, NPL, and BOPO) and the dependent variable (ROA). The value of the coefficient of determination is presented in the following table:

Table 5. Results of the Coefficient of Determination Test (R²)

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.901 ^a	.812	.798	.0254030	1.878

a. Predictors: (Constant), BOPO, NIM, NPL

b. Dependent Variable: ROA

Referring to the table, the R Square value of 0.812 or 81.2% indicates that the independent variables (NIM, NPL, and BOPO) can explain 81.2% of the variation in the dependent variable (ROA), while the remaining 18.8% is influenced by other factors not analyzed in this study.

T-Test

The T-test in this study is intended to test the hypothesis regarding the partial impact, specifically to assess whether the variables NIM, NPL, and BOPO significantly affect ROA or not. The results of the T-test are presented in the following table:

Table 6. Results of the T-Test

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.060	.009		6.722	<.001	.042	.078		
	NIM	.174	.041	.302	4.232	<.001	.091	.258	.925	1.081
	NPL	-.657	.148	-.325	-4.431	<.001	-.957	-.358	.876	1.142
	BOPO	-.045	.004	-.775	-10.777	<.001	-.053	-.036	.910	1.099

a. Dependent Variable: ROA

NIM has been shown to have a significant effect on ROA. This is indicated by the P-value of the t-test for NIM, which is 0.001, smaller than the 5% significance level (0.05). Therefore, it can be concluded that NIM is a determining factor for ROA. Based on these results, hypothesis H1, which asserts that NIM significantly affects ROA, can be accepted.

NPL also proves to have a significant effect on ROA, as shown by the t-test P-value of 0.001, which is below the 5% significance level (0.05). Therefore, NPL is stated as a factor that affects ROA, and thus, hypothesis H2, which asserts that NPL significantly affects ROA, can be accepted.

Furthermore, BOPO has been shown to significantly affect ROA. This is indicated by the t-test P-value of 0.001, which is below the 5% significance level (0.05). Based on

these results, BOPO is established as a factor that affects ROA. Therefore, hypothesis H3, which states that BOPO significantly affects ROA, can be accepted.

F-Test

The F-test is used to assess the simultaneous impact of the independent variables, namely NIM and NPL, on the dependent variable, with BOPO also having a simultaneous significant effect on the dependent variable, which is ROA. The results of the F-test in this study are as follows:

Table 7. Results of the F-Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.109	3	.036	49.462	.000 ^b
	Residual	.029	40	.001		
	Total	.138	43			

a. Dependent Variable: ROA

b. Predictors: (Constant), BOPO, NIM, NPL

From the display above, it can be stated that NIM, NPL, and simultaneously BOPO have a significant effect on ROA. This is indicated by the F-test P-value of 0.000, which is below the 5% significance level (0.05). This result suggests that the model using ROA is suitable for use and further analysis. Based on these results, the fourth hypothesis, which states that NIM, NPL, and BOPO simultaneously have a significant effect on ROA, is accepted.

The Effect of NIM on ROA

Based on the results of the t-test discussed previously, NIM has been shown to significantly affect ROA, indicating that NIM is a determining factor for ROA. This finding is consistent with studies conducted by Nugroho et al. (2019), Stephanus (2023), and Pramana & Rahyuda (2021), which concluded that NIM significantly affects ROA, and this study provides findings in alignment with that conclusion.

The results indicate that the financing company's ability to generate Net Interest Income from its lending and investment activities is strong. Furthermore, NIM plays an essential role in determining the profitability of the company. The higher the NIM, the more efficient the company is in managing the difference between interest income and interest expenses, which is reflected in the increase in ROA.

The results show that financing companies capable of maintaining or increasing NIM tend to exhibit better financial stability. This is because a high NIM reflects the company's ability to manage Credit Risk and maintain profit margins, which ultimately supports healthy financial performance as measured by ROA. NIM is a key indicator that can be used by the management of financing companies to evaluate the effectiveness of their business strategies. By focusing on optimizing NIM, for instance through portfolio management or interest rate setting, the company can achieve asset efficiency, which ultimately increases ROA.

The Effect of NPL on ROA

Based on the findings from the t-test in the previous section, NPL has been shown to significantly affect ROA, indicating that NPL is a determining factor for ROA. This is consistent with the findings of research by Sa'adah and Wahyuni (2023), Mandala et al. (2023), and Qauliyah and Sulistiawati (2024), which also concluded that NPL significantly affects ROA. This study provides findings in alignment with those conclusions.

The results indicate that the level of Non-Performing Loans directly impacts the profitability of financing companies. The higher the NPL, the greater the likelihood of a decrease in ROA, as non-performing loans reduce interest income and increase losses due to provisioning. The level of Non-Performing Loans affects the efficiency of asset utilization in financing companies. A high NPL indicates that some assets are not generating income as expected, thus reducing the company's ability to optimize its assets in generating profit. NPL is a key factor affecting the financial performance of financing companies. A high NPL level can signal significant challenges in managing Credit Risk, which has a direct impact on ROA as one of the indicators of profitability.

The Effect of BOPO on ROA

Referring to the results of the t-test in the previous section, BOPO has been shown to significantly affect ROA, indicating that BOPO is a determining factor for ROA. This result is consistent with previous studies conducted by Dewanti et al. (2022), Yuliana and Lestari (2021), and Ramadanti and Setyowati (2022), which also concluded that BOPO significantly affects ROA. This study provides findings in alignment with those research conclusions.

The findings indicate that the ratio of Operating Expenses to Operating Income (BOPO) significantly affects Return on Assets (ROA), suggesting that the level of operational efficiency in financing companies plays an important role in determining profitability. A high BOPO ratio reflects the magnitude of operational expenses borne by the company relative to income, which can suppress ROA, showing that cost management is a key factor in financial performance.

BOPO shows that a financing company's ability to control Operating Expenses is directly related to the efficiency of asset utilization in generating profit. A low BOPO indicates more efficient operations, allowing the company to generate a higher ROA, reflecting optimal resource management. BOPO is an important variable affecting ROA in financing companies. A high BOPO level can be an indicator of challenges in maintaining operational efficiency, which directly impacts profitability as measured by ROA.

The Simultaneous Effect of NIM, NPL, and BOPO on ROA

Based on the results of the F-test in the previous section, NIM, NPL, and BOPO collectively have a significant effect on ROA. This indicates that these three variables are determining factors for ROA. This result aligns with previous studies by Nugroho et al. (2019), Sa'adah and Wahyuni (2023), and Dewanti et al. (2022), which also concluded that NIM, NPL, and BOPO significantly affect ROA. This study provides

findings consistent with those previous conclusions.

The findings show that Net Interest Margin (NIM), Non-Performing Loan (NPL), and Operating Expenses to Operating Income (BOPO) collectively have a significant effect on Return on Assets (ROA), indicating that these three variables together are the main determinants of profitability in financing companies. The interaction between interest income efficiency, credit risk levels, and operating expense management collectively impacts the company's ability to generate profits from its assets.

The results show that the financial performance of financing companies highly depends on the balance between net interest income, credit risk control, and operational efficiency. These three variables are interrelated in shaping ROA, reflecting that financial performance is not only determined by one aspect but by the synergy of various operational and risk factors. NIM, NPL, and BOPO simultaneously have a significant effect on ROA. This emphasizes that the combination of these three variables is consistently an important indicator in evaluating the profitability of financing companies, reflecting the complexity of the elements impacting financial performance

CONCLUSION

Based on the data analysis and discussion conducted, several key findings can be concluded. Firstly, Net Interest Margin (NIM) has a significant positive effect on Return on Assets (ROA), indicating that higher NIM enables financing companies to generate greater profits from their assets by efficiently managing the difference between interest income and interest expenses. Secondly, Non-Performing Loan (NPL) shows a significant negative relationship with ROA, meaning that an increase in NPL reduces profitability due to lower interest income and higher provisions for loan losses, which degrade asset quality. Thirdly, the Operating Expense to Operating Income (BOPO) ratio negatively affects ROA, as higher BOPO reflects inefficiency in managing operating expenses relative to income, thus lowering profitability. Finally, NIM, NPL, and BOPO together simultaneously influence ROA significantly, highlighting that the combined management of interest income efficiency, credit quality, and operational cost control is crucial for financing companies to sustain and improve their financial performance.

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