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What Factors Influence The Performance of Rural Banks? A Case Study in Indonesia

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ABSTRACT

Rural bank performance has been in the spotlight due to the challenges faced such as asset quality, operational efficiency, and increasingly tight competition from other financial institutions. This study aims to identify the factors that influence the performance of rural banks. The research was conducted using a of rural banks in Indonesia, with observations spanning from 2020 to 2023. The research data was obtained from secondary sources and processed using Stata version 17 for analysis. The results of the study indicate that before the interaction moderation, BOPO and CAR were significant to ROA, while NPL and LDR were not significant to ROA. After the interaction moderation, BOPO and LDR are significant to ROA, while CAR and NPL are not significant to ROA.

Keywords: Rural bank; performance; factors; financial ratios.

1. Introduction

Rural banks (Bank Perkreditan Rakyat or BPR) have a significant role in supporting economic growth, especially in providing financial access for people in rural areas and small and medium enterprises (SMEs). Rural banks function as a banking institution that focuses on credit services for the micro, small, and medium sectors, as well as people who have not been reached by general banks. However, in recent years, rural bank performance has been in the spotlight due to the challenges faced such as asset quality, operational efficiency, and increasingly tight competition from other financial institutions.

Interest in bank business models has been growing recently, particularly following the global financial crisis (Adusei, 2015). Communities require financial assistance or credit to enhance their welfare. Banks play a key role in providing loans to the public. Based on Banking Law No. 10 of 1998, banks collect funds from the public and then distribute them back in the form of loans or other means to improve the public's standard of living (Utami et al., 2023). The global financial crisis significantly affected banks and the development of financial institutions. According to data from the International Monetary Fund (IMF), banks in the US and Europe suffered losses amounting to $2.8 trillion between 2007 and 2010. Despite this crisis, rural credit banks managed to endure (Ali & Puah, 2018).

One of the important indicators in measuring a rural bank's performance is the level of liquidity, profitability, and credit quality. According to data from the Otoritas Jasa Keuangan (OJK), many rural banks are experiencing an increase in non-performing loans (NPL), which can threaten their operational aspirations (OJK, 2023).

In Indonesia, credit risk in Islamic banks needs to be carefully managed due to their high level of Non-Performing Financing (NPF). Bank Indonesia, the country's central bank, mandates that the maximum allowable level of Non-Performing Loans (NPL) for the banking sector be 5% (FSA, 2013). However, as reported by the Financial Services Authority (FSA), the NPF for Shariah Rural Banks (SRBs) was 8.28% as of October 2019. SRBs are Islamic banks that cater primarily to the micro sector. With 57.89 million business units in Indonesia, the vast majority (99.9%) are micro, small, and medium enterprises (MSMEs) (FSA, 2019). Many MSMEs lack access to banking services (KNKS, 2019).

Credit risk, typically indicated by nonperforming loans (NPLs) in conventional banks, plays a crucial role in economic stability. The Asian financial crisis of 2007 and the subsequent collapse of financial markets highlighted the significance of NPLs. Consequently, NPLs emerged as a critical issue and remain a persistent challenge that financial institutions must address (Priyadi et al., 2021). High NPL ratios impact not only individual banks but also the overall economic stability of a nation. Rahman et al. (2017) state that poor management of NPLs "can result in bank failures and financial instability at the national level.

Liquidity risk is a prominent focus in the literature on bank performance. Mitigating this risk, particularly during times of significant uncertainty, can be achieved through loan portfolio diversification and maintaining substantial working capital (Katsiampa et al., 2022). Limited liquidity does not always enhance performance, Megginson et al. (2014) note that state-owned Chinese banks can maintain low cash reserves due to "soft budget constraints." This allows these banks to lobby the government for capital infusions when needed.

NPLs can be influenced by various factors, both internal and external. Previous studies identified internal factors affecting credit risk in the banking sector, particularly NPLs, such as financial ratios and bank characteristics (Effendi et al., 2017), along with external factors like interest rates, inflation, and gross domestic product (GDP) (Widarjono and Rudatin, 2021). The influence of these internal and external factors on NPL has yielded varying results across different studies (Supriani and Sudarsono, 2018).

The profitability and stability of banks in financial institutions have become an increasing concern for regulators and bank supervisors. This issue has garnered significant attention from researchers following the 2007/2008 financial crisis. The debate surrounding the global financial crisis points to large banks as key contributors, significantly impacting many economies (Ali & Puah, 2019).

The bank must handle a higher level of sufficient funding for future operations, as a larger portion of its net income comes from financial innovations and derivatives, which increase risk. In this study, capital adequacy will be represented by the CAR (Li et al, 2016). CAR is a ratio that compares a bank's capital to its risk-weighted assets, which assesses the bank's ability to cover its liabilities and various risks, including credit risk, operational risk, and market risk. The recommended CAR value should exceed 8% (Rahman, 2017).

Blatter and Fuster (2022) indicate that both efficiency and profitability increase with bank size. They found that the relationship between size, efficiency, and profitability is likely causal, using an instrumental variables approach for a group of geographically constrained institutions. The findings also suggest that high efficiency and profitability can coexist with sound capitalization. Mazreku et al. (2020) examined working capital and its effect on the profitability of commercial banks in Kosovo. The study found that bank size and current ratio have a positive impact on the success of banks in Kosovo, while the debt ratio has a negative effect.

Based on the explanation above, it is interesting to conduct research on the factors that influence the performance of rural banks. This study aims to examine whether the Operational Efficiency Ratio, Capital Adequacy Ratio, and Non-Performing Loans affect the performance of rural banks. Additionally, this research investigates the role of the Loan to Deposit Ratio in moderating the influence of these three variables. Bank size is used as a control variable to accurately determine the effect of each variable.

2. Literature Review

Return on Assets (ROA)

The ROA ratio shows the effectiveness of managing their assets, a higher ROA signifies stronger bank performance (Priyadi et al., 2021). Financial performance demonstrates how effectively an organization utilizes its financial resources, reflecting its financial health and overall condition. It also showcases the outcomes of the company's activities, operations, and policies, typically represented by return on asset (Ngatno et al., 2021). ROA is determined by dividing the annual net profit after taxes by the average total assets (Alslaibi & Abdelkarim, 2024).

Operational Efficiency Ratio (OER/BOPO)

Cost efficiency is defined as the ratio of the minimum costs required to achieve a specific production volume to the actual costs incurred (Shkodra et al., 2024). It aligns with a bank's economic objectives to minimize costs. OER assesses the relationship between operating costs and operating income, measuring the efficiency of an organization’s performance. A lower OER signifies that banks are more effective at managing their operational costs (Effendi et al., 2017). Bank efficiency is linked to the quality of management and the effectiveness of the products and services provided. Improved management quality will lead to greater efficiency in the bank's operational activities (Suryanto, 2015).

Capital Adequacy Ratio (CAR)

CAR is a key ratio for evaluating a bank's capital adequacy. It serves as an important tool in managing the risk of losses on earning assets, particularly those arising from credit risk (Sukmana, 2015). It is stated that capital can be used to support daily operations and is essential for running and growing the company. Therefore, maintaining adequate capital is crucial to ensure that operational activities remain uninterrupted (Afiqoh and Laila, 2018).

Non Performing Loan (NPL)

Credit risk, commonly indicated by nonperforming loans (NPLs) in conventional banks, is a crucial factor in maintaining economic stability (Priyadi et al., 2021). NPL serves as a tool to assess financing risks. Banking performance can be evaluated by measuring the NPL ratio, which indicates liquidity, profitability, and solvency ratios (Dwihandayani, 2016). It can be

argued that NPL plays a crucial role in determining the quality and performance of banks, as financing is a core function of banks in supporting economic development (Isaev and Masih, 2017). An increase in the production of goods and services, as an indicator of strong economic growth, would help mitigate financing issues (Damanhur et al, 2017). A higher equivalent rate will lower customers' interest in seeking financing, leading to fewer customers receiving funding. As a result, the volume of financing may decrease, along with the level of financing risk, potentially causing the NPL rate to decline as well (Hasna et al., 2019).

Loan to Deposit Ratio (LDR)

LDR represents the ratio between the amount of financing provided by the bank and the third-party funds (TPF) it collects. A high LDR reflects the bank's adequate ability to distribute financing. Therefore, LDR serves as a measure of the effectiveness of fund distribution. As LDR increases, the bank's profits also rise, assuming the bank can effectively allocate the financing (Muhammad et al., 2020). A mismatch between loan terms and deposit terms can rapidly heighten a bank's risk, making it harder to fulfill the original goal of providing financial support to the real economy (Ruan, 2015). Bank loans serve as the primary source of business financing and are anticipated to stimulate economic growth, which can be measured using GDP (Gross Domestic Product). Strong economic growth may prompt banks to increase their lending activities. However, banks need to exercise caution in choosing appropriate recipients for these loans (Firmansyah, 2014).

Bank Size

Bank size can enhance profitability by benefiting from economies of scale (Alam et al., 2019). For internal factors, many researchers use bank size to examine its impact on bank profitability. Bank size can have both positive and negative effects on profitability (Thanh et al., 2022). As indicated in numerous banking studies, we utilize bank size as one of the control variables (Hassan et al., 2022; Trinugroho et al., 2017)

3. Research Methodology

This study uses a quantitative approach with secondary data analysis. Secondary data are taken from the annual reports of Rural Banks, data from the Financial Services Authority (OJK), and other relevant sources, such as academic journals or government publications. Data were collected through official database searches and literature related to banking financial performance. Data analysis was carried out using Stata software version 17. This study uses ROA as the dependent variable while BOPO, CAR, and NPL are the dependent variables. In addition, the researcher also uses the LDR variable as a moderating variable and Bank size as a control variable.

4. Results

Table 1. Deskripsi variable

Variable	Obs	Mean	Std. dev	Min	Max
ROA	104	2.872212	1.002067	0.99	5.51
BOPO	104	7.858846	6.775734	65.26	100.6
CAR	104	25.0199	5.280567	15.8	35.93
NPL	104	5.713462	4.178956	0.19	20.93
LDR_M	104	7.691712	8.962183	54	94.72

Bank_Size_C	104	20.18702	0.60908	19.37	22.73

Source: processed data, 2024

Table 1, it can be seen that ROA has a mean value of 2.872212 with a standard deviation of 1.002067. In the study, ROA has a minimum value of 0.99 and a maximum value of 5.51. BOPO has an average of 7.86 with a standard deviation of 6.78. In this study, BOPO has the lowest value of 65.26 and the highest value of 100.6. CAR shows an average of 25.02 with a standard deviation of 5.28. The lowest CAR value in this study is 15.8, while the highest is 35.93. NPL has an average of 5.71 with a standard deviation of 4.18. In this study, NPL ranges from 0.19 to 20.93. LDR shows an average of 7.69 with a standard deviation of 8.96, with the lowest value being 54 and the highest value being 94.72. Bank Size has an average of 20.19 with a standard deviation of 0.61. In this study, bank size varies between 19.37 and 22.73.

Table 2. Results before moderation and after moderation

		Model 1	Model 2	
No	Variable	Before Moderation	After Moderation	Hypothesis Results
1	BOPO	0.000		Significant
2	CAR	0.048		Significant
3	NPL	0.604		Not Significant
4	LDR	0.270		Not Significant
5	LDR to ROA		0.036	Significant
6	BOPO_LDR to ROA		0.035	Significant
7	CAR _LDR to ROA		0.704	Not Significant
8	NPL_LDR to ROA		0.052	Not Significant
9	Bank Size to ROA	0.040		Significant

Source: processed data, 2024

Table 2. Before moderation, the Operational Efficiency Ratio (OER/BOPO) shows a significant influence on ROA, with a significance value of 0.000. This indicates that operational efficiency plays an important role in affecting the profitability of banks, where the lower the BOPO, the higher the ROA achieved.

Next, the Capital Adequacy Ratio (CAR) also has a significant impact on ROA before moderation, with a significance value of 0.048. This shows that capital adequacy contributes positively to the bank's financial performance, particularly in its ability to absorb risks and maintain financial stability.

Conversely, Non-Performing Loans (NPL) do not show a significant influence on ROA before moderation, as indicated by the significance value of 0.604. This suggests that the non-performing loan ratio does not directly impact profitability, possibly because the bank is able to effectively manage credit risk.

Additionally, the Loan to Deposit Ratio (LDR) also does not show a significant influence on ROA, with a significance value of 0.270 before moderation. This indicates that liquidity management, as measured by LDR, does not directly affect the bank's profitability performance in the initial condition.

After moderation, LDR shows a significant influence on ROA, with a significance value of 0.036. This means that in the moderated model, liquidity management plays an important role in enhancing the bank's profitability.

The interaction between BOPO and LDR also shows a significant influence on ROA, with a significance value of 0.035. This confirms that the combination of operational efficiency and liquidity management can have a significant impact on the bank's financial performance.

However, the interaction between CAR and LDR does not show a significant effect on ROA, with a significance value of 0.704. This indicates that the combination of capital adequacy and liquidity does not provide a meaningful impact on the bank's profitability.

For the interaction between NPL and LDR, the significance value of 0.052 shows that although it is close to the threshold, the moderating effect of LDR on the influence of NPL is not yet statistically significant.

Finally, Bank Size as a control variable shows a significant influence on ROA, with a significance value of 0.040. This indicates that larger banks tend to have advantages in terms of economies of scale and risk management, which contribute to increased profitability.

5. Discussion

The BOPO has a significant effect on ROA before moderation. This suggests that the operational efficiency ratio plays a crucial role in determining the performance of rural banks, as lower efficiency (higher BOPO) directly influences lower profitability, represented by ROA. The significant result emphasizes the importance of cost control in rural banking performance.

CAR also shows a significant impact on ROA. This indicates that adequate capital levels help improve bank performance by providing a cushion against risks and enhancing the ability to absorb losses, thus positively affecting profitability.

NPL does not have a significant influence on ROA before moderation. This suggests that the non-performing loans ratio does not independently determine profitability in the absence of other factors, possibly due to the rural banks' ability to manage loan recovery or provisioning.

LDR does not significantly impact ROA. This could imply that liquidity management, as measured by LDR, may not be a critical factor in determining profitability for rural banks, or the banks have adequate liquidity strategies to mitigate risks without directly influencing ROA.

LDR has a significant moderating effect on ROA. This result indicates that liquidity management becomes more critical when combined with other factors, suggesting that maintaining an optimal balance between loans and deposits enhances bank profitability in a moderated model.

The interaction between BOPO and LDR has a significant impact on ROA. This demonstrates that the combination of operational efficiency and liquidity management is critical for rural bank performance, highlighting that better efficiency can enhance the role of liquidity in profitability.

CAR's interaction with LDR is not significant. This implies that the combination of capital adequacy and liquidity does not provide a significant advantage in improving profitability, suggesting other factors may play a more dominant role in moderating this relationship.

While close to the threshold, the interaction between NPL and LDR is not statistically significant. This could indicate that even with liquidity considerations, the effect of non-performing loans on profitability remains limited in rural banks.

Bank size has a significant impact on ROA, suggesting that larger banks may have advantages such as economies of scale, better risk management, or a diversified portfolio, which contribute positively to profitability.

The results show that operational efficiency and capital adequacy are critical to rural bank performance, while liquidity management plays a significant role when interacting with other variables. The non-significant impact of NPL and LDR before moderation highlights the complexity of rural banking dynamics, where risk factors like non-performing loans might be mitigated through internal strategies. However, when moderated, liquidity management significantly enhances profitability, particularly when operational efficiency is high. This indicates that improving efficiency and managing liquidity are key strategies for enhancing rural bank performance.

6. Conclusion

The research results show that before the moderation interaction, BOPO and CAR were significant towards ROA, while NPL and LDR were not significant towards ROA. After the moderation interaction, BOPO and LDR became significant towards ROA, while CAR and NPL were not significant towards ROA. Overall, these results suggest that interaction moderation changes the influence of several financial ratios on bank performance, with the focus shifting from capital adequacy to credit distribution effectiveness as the main factor in increasing ROA.

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