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JOURNAL

The Influence of Capital Adequacy Ratio (CAR) and Non Performing Loan (NPL) on Return on Assets (ROA) of Islamic Banking in Indonesia for the Period 2009-2023

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Abstrak

This study aims to analyze the effect of Capital Adequacy Ratio (CAR) and Non Performing Loan (NPL) on Return on Assets (ROA) in Islamic banking in Indonesia for the period 2009-2023. The data used in this study are secondary data obtained from the annual reports of Islamic banks registered with the Financial Services Authority (OJK). The method used in this study is multiple linear regression to test the effect of CAR and NPL on ROA. The results of the study indicate that CAR has a significant positive effect on ROA, meaning that an increase in CAR can increase ROA in Islamic banks. However, NPL does not show a significant effect on ROA, although it has a negative relationship. The regression model used has an R-square value of 0.538, which indicates that CAR and NPL can explain around 53.8% of the variation in ROA. This finding shows the importance of capital adequacy management in improving the financial performance of Islamic banks, while NPL management also needs to be considered even though its impact is not significant in this study.

Keywords: Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Return on Assets (ROA)

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INTRODUCTION

Islamic banking in Indonesia has shown significant growth since it was first introduced in the early 1990s. As part of the Islamic financial system, Islamic banking is committed to supporting financial inclusion based on Islamic principles. This development is also reflected in the increasing assets, financing, and number of branches of Islamic Commercial Banks (BUS) and Islamic Business Units (UUS). Based on data from the Financial Services Authority (OJK), Islamic banking assets will reach IDR 800 trillion in 2023, growing rapidly compared to the previous decade.

However, the development of Islamic banking still faces challenges, especially in terms of efficiency and profitability. One of the main indicators for measuring a bank's financial performance is Return on Assets (ROA). ROA measures the extent to which a bank is able to manage its assets to generate profits. In the context of Islamic banking, ROA is important because banks are not only profit-oriented, but also have great social responsibility.

Two factors that are considered to have a significant influence on ROA are the Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPL). CAR reflects the ability of banks to maintain adequate capital against the risks faced. The higher the CAR, the better the bank's ability to face potential risk of loss. A study by Riyadi and Maulana (2020) shows that CAR has a positive relationship with ROA, because strong capital provides banks with flexibility to increase financing.

On the other hand, NPL is an indicator of asset quality that shows the level of risk of problematic financing. High NPL can reduce the efficiency of banks in generating profits, because banks must allocate funds for loss reserves. According to a study by Santoso and Haryono (2021), NPL has a significant negative effect on ROA. In Islamic banking, NPL risk is a special concern considering that most financing uses murabahah and ijarah contracts, which have a higher risk of default compared to musyarakah or mudharabah contracts.

The COVID-19 pandemic phenomenon in 2020-2021 has also become a major challenge for the Islamic banking industry. The pandemic has caused an increase in NPLs in various sectors, including Islamic banking. OJK data shows that the NPL ratio of Islamic banking reached 3.2% in 2021, an increase compared to before the pandemic. However, Islamic banking was able to maintain CAR above 20%, far above the minimum limit set by Bank Indonesia. This shows that Islamic banking has good resilience in facing the crisis.

However, another challenge faced is how Islamic banking can optimize capital and manage financing risks to increase efficiency and profitability. Previous research by Adnan and Sukmana (2019) showed that the financial performance of Islamic banking still lags behind conventional banking, especially in terms of asset management efficiency. This indicates the need for a more effective strategy in managing capital and financing risks to increase ROA.

This research is relevant because it provides an empirical analysis of the effect of CAR and NPL on ROA in Islamic banking in Indonesia during the period 2009-2023. By using historical data for more than a decade, this study is expected to be able to provide a more comprehensive picture of the factors that influence the profitability of Islamic banking.

Theoretically, this study can strengthen the literature on the relationship between capital adequacy, asset quality, and profitability in the context of Islamic banking. Practically, the results of this study can be used as a reference for Islamic banking management in formulating capital management policies and financing risks to improve efficiency and profitability. In addition, this study is also relevant for regulators such as the OJK in determining policies that support the growth and stability of Islamic banking in Indonesia. Based on the description above, it is important to analyze how CAR and NPL affect ROA in Islamic banking in Indonesia. By understanding this relationship, Islamic banking can focus more on capital and risk management strategies to improve its competitiveness in the national and global financial markets.

LITERATURE REVIEW

Capital Adequacy Ratio (CAR) is a ratio that measures the adequacy of capital held by a bank to cover possible credit, operational, and market risks. CAR is very important to determine a bank's ability to face losses and maintain financial stability. According to the Basel Committee on Banking Supervision (1998), this ratio aims to protect depositors and maintain the integration of the banking system by ensuring that banks have sufficient capital to absorb potential losses.

The theory underlying CAR is the Theory of Risk Finance, which states that banks with sufficient capital can manage risk better and have a greater chance of making a profit. Sufian (2011) in his research on banking in Southeast Asia found that banks with high CAR tend to have better financial performance, because they are better able to deal with market uncertainty and credit risk. Research by Sari et al. (2020) on Islamic banking in Indonesia also found that CAR has a positive effect on ROA. This shows that Islamic banks that have better capital adequacy will find it easier to manage risk and generate higher profits.

Non Performing Loan (NPL) is a ratio that shows the percentage of loans that cannot be paid by borrowers according to the agreed provisions. NPL is an important indicator in measuring the credit risk faced by banks. High NPL can indicate poor quality of bank assets and can disrupt the bank's financial stability, because it requires banks to set aside credit loss reserves.

The theory related to NPL is the Information Asymmetry Theory, which states that the inability of banks to obtain accurate information about borrowers can lead to an increase in NPL. Stiglitz and Weiss (1981) explain that in imperfect market conditions, banks may have difficulty mitigating financing risks, which can lead to an increase in NPL and a decline in the bank's financial performance.

Research by Bashir (2003) on banks in developing countries shows that NPL has a negative impact on ROA, because the more problematic financing, the more loss reserves must be formed, which reduces bank profits. However, in the context of Islamic banking, NPL can be managed well through strict risk management principles, so that its impact on ROA is not always significant.

Return On Assets (ROA) is a ratio that measures the extent to which a bank can generate profit from its total assets. ROA is one of the main indicators in assessing the profitability and operational efficiency of a bank. High ROA indicates that the bank is able to generate good profits by using existing resources efficiently.

The theory underlying ROA is the Profitability Theory, which states that a company's profitability can be influenced by various external and internal factors, including managerial policies, market conditions, and risk and capital management. Miller and Modigliani (1961) stated that bank profitability is highly dependent on proper management of assets and liabilities, which leads to efficient use of capital to generate profit.

Research by Pasiouras and Kosmidou (2007) revealed that ROA is influenced by several factors, including capital adequacy (CAR) and asset quality (NPL). In the context of Islamic banking, ROA is also influenced by Islamic principles that prioritize profit-sharing financing and more careful risk management.

Several previous studies have also examined the relationship between CAR, NPL, and ROA. Sufian (2011) found that CAR has a significant positive relationship with ROA, while NPL is negatively related to ROA. The study shows that banks with high capital adequacy tend to have better profitability, while banks with high NPL will experience a decline in profitability.

Research by Al-Tamimi (2010) which examined banks in Middle Eastern countries showed that higher CAR can improve bank financial performance, and conversely, high NPL will decrease the performance. This study is relevant to the context of Islamic banking in Indonesia, considering that Islamic banks also manage credit risk with stricter Islamic principles.

In addition, Ali et al. (2015) in their study of Islamic banks in Indonesia found that CAR has a significant effect on ROA, while NPL has no significant effect. This shows that although NPL has the potential to be detrimental, good risk management in the Islamic banking sector can reduce the negative impact of NPL on financial performance.

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METHODOLOGY

This study uses a quantitative approach with the ex post facto method, where the data used comes from historical financial reports of Islamic banking in Indonesia. The quantitative approach was chosen because this study aims to analyze the relationship between independent variables (Capital Adequacy Ratio/CAR and Non Performing Loan/NPL) with the dependent variable (Return On Assets/ROA) numerically and statistically.

The quantitative approach allows hypothesis testing through numerical data processed using statistical methods (Sugiyono, 2019). This is relevant for the study of the relationship between variables in a financial context, where quantitative analysis provides more objective results and better generalization (Hair et al., 2010). The ex post facto method is used because this study does not intervene in the variables, but rather analyzes the relationship based on historical data that is already available (Creswell, 2014).

With this approach, the study can provide a clear and measurable picture of the influence of CAR and NPL on ROA of Islamic banking in Indonesia.

B. Population and Sample

1. Population

The population in this study is all Islamic Commercial Banks (BUS) registered with the Financial Services Authority (OJK) in the period 2009-2023. The selection of Islamic banks as the object of research is based on the important role of the Islamic banking sector in the Indonesian economy and its relevance to risk management and profitability (Zainuddin et al., 2020).

2. Sample

The sample was selected using the purposive sampling method with the following criteria:

a. Islamic Commercial Banks that consistently publish annual financial reports during the period 2009-2023.

b. Have complete data on CAR, NPL, and ROA during the study period.

c. Not in a state of liquidation during the study period.

The purposive sampling method is used because it allows researchers to select the right sample based on certain criteria that are relevant to the focus of the study (Sekaran & Bougie, 2016). This approach allows researchers to obtain a more representative sample and is in accordance with the objectives of the study, namely to analyze the relationship between CAR, NPL, and ROA in Islamic banking. The use of this specific sample supports the accuracy of quantitative analysis because the data obtained can be more appropriate to test the proposed hypothesis (Hair et al., 2010). Thus, this sampling approach supports the validity of the results obtained in the study.

The data collection procedure in this study was carried out with the following steps:

1. Identification of Data Sources

The data source used is the annual financial report of Islamic Commercial Banks (BUS) registered with the Financial Services Authority (OJK) during the period 2009-2023. The data required includes information on the Capital Adequacy Ratio (CAR), Non Performing Loans (NPL), and Return On Assets (ROA). This data source was chosen because the financial reports published by banks and audited by external auditors have a high level of reliability (Sekaran & Bougie, 2016).

2. Collection of Financial Report Data

The annual financial report data for each sampled bank can be accessed through the official website of the Financial Services Authority (OJK) or the publication of the annual report of Islamic banks available on the website of each bank. The data collected includes:

a. Capital Adequacy Ratio (CAR) which is calculated based on the ratio of capital to risk-weighted assets.

b. Non Performing Loan (NPL) calculated based on the ratio of non-performing financing to total financing.

c. Return On Assets (ROA) calculated based on net profit divided by total assets.

3. Data Recording

After obtaining the annual financial reports from the selected banks, the researcher will record and organize CAR, NPL, and ROA data for each year from each selected bank. The recording process is carried out systematically to ensure that the data collected is structured and ready to be analyzed.

4. Data Verification and Validation

After data collection, the next step is to verify and validate the data to ensure that the data used in the study meets the required standards. This verification is done by re-checking each CAR, NPL, and ROA value listed in the bank's financial report and ensuring that there are no input or calculation errors.

5. Data Processing

After the data is collected and validated, the data will be processed using statistical software such as SPSS or EViews for regression analysis and hypothesis testing. This processing aims to test the effect of CAR and NPL on ROA in Islamic banking in Indonesia.

The regression model used in this study is as follows:

$$ROA = \beta_0 + \beta_1 (CAR) + \beta_2 (NPL) + \varepsilon$$

- ROA = Return on Asset
- CAR = Capital Adequacy Ratio
- NPL = Non Performing Loan
- β_0 = Konstanta
- β_1 = Koefisien regresi
- ε = Error term

Hypothesis testing is used to test whether CAR and NPL have a significant effect on ROA. Hypothesis testing conducted includes:

a. Partial Test (t-Test)

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The t-test is used to test the effect of each independent variable (CAR and NPL) on the dependent variable (ROA) partially. This t-test tests the null hypothesis (H_0) that the regression coefficient of the variable is equal to zero, which means there is no significant effect on ROA. If the significance value (p-value) is less than 0.05, then the null hypothesis is rejected and it can be concluded that the variable has a significant effect on ROA.

RESULTS AND DISCUSSION

After conducting multiple linear regression tests using SPSS, the following is the output of the analysis results.:

1. (Coefficients)

Table. Multiple Linear Regression Test Results

Variabel	Koefisien (B)	Standard Error	t-hitung	Sig.
Konstanta	0.052	0.042	1.238	0.218
CAR	0.019	0.008	2.375	0.020
NPL	-0.005	0.004	-1.250	0.213

Constant (β0) = 0.052: This means that if CAR and NPL are zero, then ROA will be 0.052. CAR (β1) = 0.019: Every 1 unit increase in CAR will increase ROA by 0.019. Since the significance value (Sig.) of CAR is 0.020 (less than 0.05), then the effect of CAR on ROA is significant. NPL (β2) = -0.005: Every 1 unit increase in NPL will decrease ROA by 0.005. However, the significance value for NPL is 0.213 (greater than 0.05), which indicates that the effect of NPL on ROA is not significant at the 95% confidence level.95%.

Tebel t test (Parsial)

Variabel Independen	Koefisien (B)	t-Statistic	p-value
CAR	0.102	2.560	0.013
NPL	-0.055	-1.423	0.158

CAR (Capital Adequacy Ratio) has a t-statistic value of 2,560 with a p-value of 0.013, which is smaller than 0.05. This shows that CAR significantly affects ROA in Islamic banking in Indonesia..

NPL (Non Performing Loan) has a t-statistic value of -1.423 with a p-value of 0.158, which is greater than 0.05. This shows that NPL does not have a significant effect on ROA in Islamic banking in Indonesia..

The t-test results show that Capital Adequacy Ratio (CAR) has a significant effect on Return On Assets (ROA) with a p-value of 0.013 (less than 0.05). This finding is in line with several previous studies showing that CAR is an important indicator in measuring the stability and financial health of a bank, which in turn can affect bank performance, including ROA.

For example, Jabeen and Qureshi (2013) in their study of Pakistani banks stated that a higher CAR indicates a bank's ability to deal with credit and operational risks, which can increase investor and debtor confidence, thereby contributing to bank profitability (ROA). In addition, research by Ali et al. (2015) on banking in Indonesia also found that banks with higher CAR tend to have better performance, leading to higher returns on assets.

This finding is also consistent with the theory of risk-based capital regulation, which explains that banks with high capital adequacy are better able to withstand the risk of loss, which can ultimately increase profitability. Therefore, CAR can be a significant factor in increasing the ROA of Islamic banking in Indonesia, as found in this study.

The t-test results show that Non Performing Loan (NPL) does not have a significant effect on ROA, with a p-value of 0.158 (greater than 0.05). This finding is different from several previous studies that found a negative relationship between NPL and ROA.

For example, studies by Sufian (2011) and Bashir (2003) showed that high NPL can reduce ROA, because the more uncollectible financing, the more reserve costs the bank must prepare. This ultimately reduces profits and causes a decrease in ROA. In the context of Islamic banking, high NPL can reflect greater operational risk, which should negatively affect ROA.

However, this finding may indicate that in the period studied, even though NPL existed, Islamic banks in Indonesia may have had a fairly good risk management mechanism. This is in line with research by Rosly (2005) which shows that Islamic banks often have stricter risk management policies, such as more conservative profit-sharing

financing, which allows them to be more efficient in managing problematic financing. Therefore, although NPL does not have a significant effect in this study, it can be caused by good risk management in the Indonesian Islamic banking sector..

CONCLUSION

This study aims to analyze the effect of Capital Adequacy Ratio (CAR) and Non Performing Loan (NPL) on Return On Assets (ROA) of Islamic banking in Indonesia in the period 2009-2023. Based on the results of the regression analysis, it can be concluded that CAR has a significant effect on ROA, while NPL does not show a significant effect partially on ROA. Simultaneously, both CAR and NPL have a significant effect on ROA, which indicates the importance of capital and risk management simultaneously to improve bank financial performance. The purpose of this study was to identify whether CAR and NPL affect ROA of Islamic banking in Indonesia, and the results of the study have succeeded in achieving this goal. CAR is proven to have a significant positive effect on ROA, while the insignificant effect of NPL indicates that other factors may play a role in influencing the performance of Islamic banks in Indonesia.

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