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Non-Performing Financing Syariah: A Paradigm Analysis of Capital Adequacy Ratio and Finance to Deposit Ratio

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Abstract

This study aims to examine the effect of Capital Adequacy Ratio (CAR) and Finance to Deposit Ratio (FDR) on Non-Performing Financing (NPF) moderated by return on assets (ROA). The sample of this research is Islamic banking registered with the Financial Services Authority in 2019-2023. This study uses multiple linear regression data analysis techniques with SPSS. The results showed that CAR has a positive effect on NPF while FDR has no effect on NPF. ROA only moderates the relationship between CAR and NPF. The results of this research can be a means of highlighting the effectiveness of NPF which can be improved through CAR and strengthened with ROA so that it can contribute to corporate banking as a whole.

Keywords

Capital Adequacy Ratio, Finance to Deposit Ratio, Islamic Banking, Non-Performing Financing, Return On Asset.

1. Introduction

The activity of channeling funds from financial institutions, both banks and non-banks, is a financing practice commonly carried out by the community. This financing is dominated by consumptive and productive needs, both in the consumptive and micro retail sectors (Kennedy et al., 2020). However, this activity is inseparable from risk, especially the risk of bad debts. In conventional banks, this risk is measured using Non-Performing Loans (NPL), while in Islamic banks using Non-Performing Financing (NPF). The higher the NPL and NPF ratios, the higher the risk of bank financing, which can have an impact on the decline in the number of public deposits due to concerns about the safety of their funds (Kurniati & Nurhayati, 2020; Kuswahariani et al., 2020).

The COVID-19 pandemic has exacerbated financing risks in Indonesia's banking sector, especially Islamic banks (Suhardono et al., 2023). The main challenges faced by Islamic banks during the pandemic include liquidity issues and an increase in the NPF ratio. In July and August 2020, several Islamic banks experienced a decline in revenue due to customer defaults, leading to reduced competitiveness and customer switching to conventional banks. In addition, liquidity imbalances between banks have also become a significant challenge, with some banks experiencing liquidity surpluses while others are in deficit.

The company's strategy to improve financing performance must be balanced with the bank's financial performance. Implementation of good financial performance is very important for banking companies to gain the trust of all Stakeholders such as creditors, debtors, and shareholders in accordance with Stakeholders Theory. Stakeholders theory explains that a company is not only an entity that operates for its own needs but must also share benefits with stakeholders who have direct and indirect benefits for the company (Arafat et al., 2012). Stakeholders theory is based on the assumptions, the company has a relationship with many groups of stakeholders who influence and are influenced by the company's decisions. The nature of the relationship in the process and output for the company and stakeholders. The legitimacy needs of stakeholders have a principal value, and do not make interests dominated by each other. Managerial decision making. Companies need to maintain relationships with stakeholders and place them in the context of policy and decision making, so that they can help achieve company goals, namely increasing company value. This study aims to test the effect of Capital Adequacy Ratio (CAR) and Finance to Deposit Ratio (FDR) on NPF which is moderated by Return On Asset (ROA).

2. Literature Review

Financing risk in banking can be triggered by several factors. One of the internal factors that can affect is the bank's ability to provide funds to overcome the risk of loss, the ability ratio itself is usually measured by Capital Adequacy Ratio (CAR). CAR is a ratio that will measure the adequacy of capital owned by the bank in its ability to maintain a safe limit and protect customer funds in the bank (Ishak & Pakaya, 2022). CAR shows how far the bank's assets that contain risk, such as loans, investments, securities, and claims on other banks, can be financed by its own capital in addition to external sources such as public funds or loans. The higher the CAR indicates the better ability of the bank to face the risk of loss and risky productive assets. This ratio is also related to the capital aspect, which is the ratio between capital and risk-weighted assets (Pravasanti, 2018). A high CAR can indirectly increase customer security and trust, which has a positive impact on increasing bank profitability. In other words, CAR reflects the bank's capacity to bear the risk of risky loans or productive assets, thus playing an important role in maintaining stability

and stakeholder confidence (Suprayitno & Hardiani, 2021). Research conducted by Yulianti et al. (2018), Wulandari et al. (2019), Hernawati et al. (2021), and Haryanto et al. (2024), showed that CAR has an effect on NPF. Conversely, research Suprayitno & Hardiani (2021), shows that CAR has no effect on NPF. Based on the explanation above and previous research, the following hypothesis can be formulated:

H1: CAR affects NPF

Another factor is the liquidity capability of the bank as measured using the Finance to Deposit Ratio (FDR). Banking sector companies need to manage their liquidity, especially when customers need funds and when banks distribute loans to debtors (Kennedy et al., 2020). A high FDR value will indicate that the bank does not have sufficient liquidity to fulfill its obligations for funds owned by customers. On the other hand, if FDR has a low value, it shows that the bank has an adequate level of liquidity, but this also means that the bank has low income because in the banking world, one of the bank's income comes from how much credit is distributed to debtors. Research shows that bank liquidity as measured by FDR has a positive effect on the number of NPL in conventional banks and Islamic banks (Pravasanti (2018), Wulandari et al. (2019), Rahmah & Armina (2020), and Yen & Nuryasman, 2023). However, research Suprayitno & Hardiani (2021), and Yulia et al. (2024), show that FDR has no effect on NPF. Based on the explanation above and previous research, the following hypothesis can be formulated:

H2: FDR affects NPF.

The inconsistency of previous research results on the effect of CAR and FDR on NPF of Islamic banking companies indicates that there are other factors that are thought to have a combined influence. One factor that is thought to moderate this relationship is the company's profitability, as measured by ROA. ROA reflects the company's ability to manage its assets to generate profits, with a higher ratio indicating a better financial condition, and vice versa. (Ross et al., 2010). This ratio measures the overall operating effectiveness of the company, making it relevant as an indicator in assessing the bank's ability to mitigate financing risk. In terms of the relationship between CAR and NPF, ROA can strengthen or weaken the effect of CAR on NPF. The higher ROA indicates that the bank has a good ability to manage productive assets, so that the capital owned can be utilized more effectively to absorb the risk of NPF. Research Mandasari (2021), and Azizah et al. (2022) shows the result that ROA has an effect on NPF. Based on the explanation above and previous research, the following hypothesis can be formulated:

H3: ROA moderates the relationship between CAR and NPF.

In addition, ROA can also moderate the relationship between FDR and NPF. A high FDR indicates that banks channel a large portion of customer funds into financing, which potentially increases the risk of NPF. However, banks with high ROA can manage liquidity more efficiently and thus reduce the negative impact of this risk. High profitability allows banks to have sufficient resources to overcome liquidity problems or the risk of losses arising from NPF (Nathanael et al., 2023; Suarmanayasa et al., 2024). Based on the explanation above, the following hypothesis can be formulated:

H4: ROA moderates the relationship between FDR and NPF.

This study aims to fill some gaps in the existing literature related to the effect of CAR and FDR on NPF, as well as to provide new contributions in understanding the relationship. Some of the novelties presented in this study include first, the role

of ROA as a moderating variable that has not been widely studied in the context of the effect of CAR and FDR on NPF. In fact, ROA as an indicator of bank profitability has the potential to strengthen or even weaken the impact of the two variables on NPF (Rofiqo & Afrianti, 2019; Syarvina & Sugianto, 2023). Second, this study also combines the concepts of liquidity and profitability in a more comprehensive analytical framework, especially by considering crisis conditions, such as the impact of the COVID-19 pandemic, which has put great pressure on the Islamic banking sector in Indonesia. Thirdly, by focusing on the post-pandemic period, this study provides a new perspective on the consistency of previous research results and the relevance of the model in a different context, taking into account external pressures that affect banks' liquidity and financing risk. Overall, this study provides new insights into the effect of CAR and FDR on NPF, by adding ROA as a moderating variable that enriches the analysis and broadens the understanding of how profitability can affect the stability and performance of Islamic banking in Indonesia.

3. Methods

This type of research is quantitative research using secondary data in the form of financial reports. The population in the study is Islamic banking companies registered with the Financial Services Authority in 2019-2023. The sampling technique used is the purposive sampling method. The sample was selected using criteria that are in accordance with the data needed in the study, namely having financial reports, annual reports and complete data according to the variables in the study. The sample used in this study was 11 Islamic banking companies. The data analysis technique used is multiple linear regression with SPSS software. Multiple linear regression data analysis techniques are used to test the effect of independent variables on dependent variables, both partially and simultaneously. The independent variables in this study are FDR, CAR and ROA. FDR, Ratio to measure the risk of bank failure to repay deposit funds (Wulandari et al., 2019). CAR, which shows the ability of banks to provide funds used to overcome the possible risk of loss. (Wulandari et al., 2019). ROA, A financial ratio that measures how efficient a company is in generating profits from its assets. (Ross et al., 2010). The dependent variable is NPF, Ratio to measure NPF with total financing disbursed by Islamic banks. (Wulandari et al., 2019).

4. Results

Research Results After testing, 7 outlier data were found. The data was identified as a value that deviated significantly from the general pattern in the dataset, thus potentially affecting the overall analysis results. Therefore, this outlier data was removed from the analysis to increase the validity and reliability of the research results. After the elimination process, the number of samples tested became 48. Outlier removal was carried out based on strict statistical criteria, such as z-score analysis, boxplots, and others to ensure that this decision was data-based. This step is important so that the analysis still reflects the characteristics of the majority of samples and provides more accurate results.

Table 1. Descriptive Analysis Results

Variables	N	Minimum	Maximum	Mean	Std. Deviation
NPF (Y)	48	0.000	0.386	0.05407	0.063554
ROA (Z)	48	-7.130	1.100	-0.13620	1.095167
CAR (X1)	48	12.420	390.500	51.98708	76.856755
FDR (X2)	48	0.000	506.000	90.03583	66.384077

Source: Data processed (2024)

The mean value of the NPF variable is 0.0547 or 5.41%, this shows that in the last 5 years the average Islamic banking in Indonesia has maintained the NPF value in accordance with the provisions of the regulator, which is 5%, although there are still some Islamic banks that exceed this value. The mean value of ROA is -0.13620, this indicates that some banks have experienced losses in the last 5 years. The mean value of CAR is 51.98708, this indicates that the capital owned by Islamic banks is quite high even higher than the national average CAR during the study period which is only 23.93%. The mean value of FDR is 90.03583, this indicates that the average Islamic banking has good liquidity.

Table 2. Hypothesis Test Results

Hypothesis	Variables	B	t	Sig.	Description
Multiple Regression	Linear CAR	-0.069	-4.472	0.000	H1 Accepted
	FDR	-0.044	-0.769	0.446	H2 Rejected
Moderating (ROA)	Variable CAR*ROA	0.000	2.211	0.032	H3 Accepted
	FDR*ROA	0.020	0.226	0.822	H4 Rejected

Source: Data processed (2024)

The results of the Hypothesis Test Results study show that Hypothesis 1 is accepted, namely that the CAR has a positive effect on NPF. It means that the higher the CAR, the higher the NPF value. The results of this study are in line with those conducted by (Boudriga et al., 2010; Rahmah & Armina, 2020). The high level of CAR in Islamic banks in Indonesia indicates their ability to absorb financial risks and maintain operational stability. Based on OJK Regulation No. 21/POJK.03/2014 on the Minimum Capital Adequacy Requirement (CAR) of Islamic Commercial Banks, each bank is required to have a CAR of at least 8% of risk-weighted assets (RWA), plus a capital buffer of 2.5%. However, the average CAR of Islamic banks in Indonesia during the period of this study was 23.93%, even some banks had a CAR of more than 25%, indicating that Islamic banks in general have capital reserves that are far above the minimum limit (Suprayitno & Hardiani, 2021). This high CAR is not only due to compliance with regulations, but also due to the profit-sharing-based business model of Islamic banks, such as financing through mudharabah and musyarakah contracts. These contracts support risk sharing with customers, thus strengthening the bank's capital structure. On the other hand, a high level of CAR also indicates that the bank may be less efficient in managing capital, as excess capital is not fully utilized for productive activities (Suprayitno & Hardiani, 2021; El et al., 2022).

The COVID-19 pandemic and the financing restructuring policies implemented by the Indonesian government have also had an impact on the quality of Islamic banking assets. This restructuring is done through various methods, including rescheduling, reconditioning, and restructuring. In some cases, restructuring involves converting the murabahah (sale and purchase) contract to a profit-sharing contract such as mudharabah or musyarakah. Although this policy provides relief for affected customers, the risk of long-term default increases, triggering an increase in NPF. The results of this study are not in line with several previous studies (Yulianti et al., 2018; Hernawati et al., 2021; Haryanto et al., 2024). which states that the relationship between CAR and NPF is negative or the higher the CAR, the lower the credit risk. This research is also not in line with research Suprayitno & Hardiani (2021), which explains that CAR has no effect on NPF.

The test results, hypothesis 2 is rejected. FDR has no effect on NPF. The results of this study are in line with those of several previous studies (Jayanto, 2020; Suprayitno & Hardiani, 2021; Yulia et al., 2024). FDR is an indicator that measures

the extent to which third party funds collected by banks are utilized for financing (Jayanto, 2020). Islamic banks implement profit-sharing-based financing schemes, such as mudharabah and musyarakah, which make financing risks shared between banks and customers according to the agreement. This mechanism provides flexibility in risk management so that the direct impact of high FDR on potential NPL can be minimized. In addition, FDR reflects the extent to which funds raised are channeled into financing rather than the quality of the financing. In Islamic banks, the quality of financing is highly dependent on the selection of the feasibility of the customer's business, strict supervision, and diversification of contracts, such as murabahah or ijarah. This diversification helps banks keep financing risk under control, despite high FDR.

Furthermore, Islamic banking is not only profit-oriented, but also considers the principles of justice and sustainability. This is reflected in the bank's prudent approach in channeling financing to businesses that have long-term prospects, while complying with Islamic law and regulatory requirements. Thus, the high FDR does not cause an increase in the risk of NPF, because Islamic banks actively ensure that the financing channeled is of good quality and the risks are well managed. The results of this study are not in line with several studies which explain that FDR affects the level of NPF (Yulianti et al., 2018; Wulandari et al., 2019; Rahmah & Armina, 2020; Putri & Hanggraeni, 2022)..

Based on the test results, the third hypothesis is accepted. ROA moderates the relationship between CAR and NPF. This finding is relevant to the conditions of the COVID-19 pandemic, where many Islamic banks maintain high CAR while providing financing relief through restructuring policies. High ROA amplifies the impact of CAR on NPF as high profitability encourages banks to be more aggressive in disbursing financing to maintain the level of ROA. While this reflects operational efficiency, aggressiveness in financing expansion, especially in risky sectors, increases exposure to NPL. Thus, ROA not only serves as an indicator of financial performance but also potentially increases the risks associated with NPL amid pandemic pressures. This finding underscores the importance of more prudent risk management in Islamic banks, particularly in responding to financing restructuring policies and maintaining a balance between profitability and risk. The results of this study are an additional new reference regarding the role of ROA, especially as a moderator of the relationship between CAR and NPF.

Based on the test results, the fourth hypothesis is rejected. ROA does not moderate the relationship between FDR and NPF. This indicates that the bank's operational efficiency, reflected in ROA, does not play a role in changing the effect of FDR on financing quality. FDR reflects how much financing is disbursed compared to funds raised from the public so that it is more related to the liquidity and risk management of the bank. On the other hand, ROA reflects the extent to which the bank is able to generate profits from its assets or focuses more on operational efficiency and capital management. In this case, the relationship between FDR and NPF is more influenced by liquidity and fund allocation factors, not by the level of efficiency achieved through asset and revenue management.

5. Conclusion

This study examined the effects of the Capital Adequacy Ratio (CAR) and Finance to Deposit Ratio (FDR) on Non-Performing Financing (NPF), and the moderating role of Return on Assets (ROA) in these relationships. The results concluded that with the conditions of the Covid-19 pandemic which caused financing restructuring, the financing risk of Islamic banks increased. The high CAR in Islamic banks, which on average is far above the minimum limit set by the regulator, reflects the bank's ability to absorb risk. However, excess capital that is not fully utilized productively can contribute to inefficiency and increased risk of NPF, especially in conditions of

economic stress such as a pandemic. Meanwhile, the FDR has no effect on NPF, indicating that prudent risk management by Islamic banks through profit-sharing-based financing mechanisms has succeeded in maintaining financing quality despite high FDR. In the moderation relationship, this study found that ROA strengthens the effect of CAR on NPF, where high profitability encourages banks to more aggressively disburse financing to maintain ROA, which in turn increases the risk of NPF. However, ROA does not moderate the relationship of FDR on NPF, indicating that the effect of FDR on NPF is more related to the liquidity aspect rather than the operational efficiency of the bank.

Suggestion

Islamic banks should enhance capital efficiency to maintain profitability while minimizing risk, especially during economic downturns. The findings underscore the importance of balancing capital adequacy and profitability with prudent financing practices. However, this study has several limitations. Some hypotheses showed insignificant results, and findings diverged from prior studies—particularly the positive relationship between CAR and NPF observed during the pandemic. Additionally, the insignificant moderating role of ROA in the FDR–NPF relationship suggests that liquidity and external macroeconomic factors may exert greater influence. Future research should extend the study period to include pre- and post-pandemic conditions to better capture changes over time. Incorporating additional variables such as liquidity risk, operational efficiency, or macroeconomic indicators may offer a more comprehensive understanding of factors affecting NPF in Islamic banking.

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