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Original Research Article

## **The Role of Noan Performing Financing (NPF) as A Mediator for The Relationship Between Operating Expenses and Operating Income (BOPO) on The Performance of Islamic Banks in Indonesia**

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### **ABSTRACT**

*This study aims to examine and analyze the relationship between the effect of operating costs and operating income on bank performance which is mediated by credit risk. Using data on Islamic banking companies listed on the IDX in 2012-2019. The methodology in this study uses secondary data. Data specification is panel data (pooled data) which is actually a combination of data consisting of time series data and cross-sectional data. The analysis tool used is SEM-PLS with the WarpPLS 7.0 application. This research is successful in proving that the operational cost ratio is used to measure the level of efficiency and ability of a bank in conducting its operations. The smaller this ratio means the more efficient the operational costs borne by the bank concerned so that the possibility of a bank in a less problematic condition. The smaller this ratio, the better the bank's performance.*

**Keywords:** BOPO, ROA, NPF, Information Asymmetry

### **Introduction**

The global financial crisis in 2008 was one of the forms of the fragility of the financial system. The global financial crisis originated in the United States, which was caused by defaults of subprime customers on loans with slowly increasing interest rates, which initially used low interest rates. This default has an impact on creditor banks that make credit investments by using loans from other banks using securities instruments. When a customer is unable to repay the principal and interest, it has an impact on bank liquidity, which results in the bank being unable to pay its debts to other banks and eventually banks that participate in debt securities transactions experience liquidity problems and eventually go bankrupt. The impact of the financial crisis in

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Indonesia was marked by the withdrawal of large enough foreign investment funds that caused national banks to experience liquidity difficulties which eventually received assistance from Bank Indonesia. The next impact is a decline in the value of securities and a depreciation in the rupiah exchange rate. Islamic banks can survive during the global financial crisis because they have a fairly good level of liquidity, have sufficient capital that is still above the limit set by Bank Indonesia so that they are still able to anticipate bankruptcy, although the profitability of Islamic banks has decreased, they are still able to earn profits and have the risk of problem loans large enough. The resilience of Islamic banks is not only in the health aspect of the bank, but also in the component of sources of funds that do not have loans in foreign currency even though they have sources of funds from customers in the form of foreign currency with a comparable amount that can still be guaranteed with sufficient capital, given the impact of the global financial crisis is large amounts of withdrawal of investment funds in foreign currency and depreciation of the rupiah exchange rate against foreign currencies, especially the United States Dollar. Therefore, Islamic banks are expected to be able to make an attractive Islamic product for investors and customers to be able to make investments that are relatively safe in the event of financial turmoil and gain customer loyalty so that they can increase asset growth through sources of funds and the capital component of high profitability.

Increased competition and efforts of European banks to increase their presence in other markets may have affected the efficiency and credit risk in the banking system. The first aspect is the incentive to reduce costs in order to gain competitiveness. The second is associated with their lack of knowledge about the market and / or accepting a higher risk of increasing their market share. Apart from the importance of these aspects, the banking literature has usually analyzed the effect of competition on the efficiency of the banking system without considering these aspects (Pastor, 2002).

The development of Islamic banking in Indonesia is very fast and good even though it is running slowly. This is evidenced by the growth of assets each year increases. In 2011 the assets of Islamic banking in Indonesia grew 50.1 percent. Assets amounted to IDR 101.2 trillion in March 2011, to IDR 151.9 trillion in March 2012. Third party funds also grew 50 percent, from IDR 79.65 trillion in March 2011, to IDR 119.6 trillion in March 2012. This data is presented by the Executive Director of Islamic Banking at Bank Indonesia, Edy Setiadi, that the data is a combination of Islamic commercial banks, Islamic business units, and Islamic rural banks. Credit risk exists in Islamic banks due to the management of financing in murabahah, investment on business performance in musyarakah and mudharabah contracts, leases in ijarah, promises to

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deliver or buy in istisna and salam, and sukuk held to maturity in the banking book. In addition, credit risk is associated with delays, delays and defaults.

One of the main activities of the bank to increase profitability is granting of credit. In addition to being a source of bank income, lending activities vulnerable to risk which can be one of the main causes of a bank faced problems and ended up with bankruptcy. Problems in activity credit extension that commonly occurs is the inability of customers to carry out its obligations to the lender. Bank Indonesia Circular Letter No.13 / 24 / DPNP / 2011 states that credit risk is the risk due to failure debtors and / or other parties in fulfilling obligations to the Bank. Credit risk is a natural risk considering one of the bank's core business itself is the provision of credit. Before giving credit, the bank must collect sufficient information about potential customers to minimize risks credit that will be faced at a later date. This information is usually collected during credit documentation (Elgari, 2003).

Furthermore, an assessment of the soundness of the banking system is one of which is carried out through an assessment of the BOPO ratio component. The BOPO ratio is used as a proxy to measure the level of operational efficiency of a bank. High operating costs compared to the operating income earned by the bank will affect the bank's financial performance. According to Harfiah et al. (2016) BOPO is a comparison between operating costs and operating income. This ratio is used to measure the level of efficiency and the ability of a bank to carry out its operational activities. If the resulting BOPO level is lower, the management performance of the bank is getting better. This shows that banks are more efficient in using existing resources for their operational activities. The research topic being carried out is related to how the role of NPF (Noan Performing Financing) can mediate the relationship between the influence of BOPO and FDR where the current issue becomes more interesting during the pandemic which affects the Islamic banking sector, especially in Indonesia.

The research gap in this study is that there is a difference of opinion on the effect of operating costs on operating income (BOPO) of Islamic banking on bank performance. According to Rini & Burhany (2020), BOPO has a positive effect on ROA, but Nahar & Prawoto (2017), Sitompul & Nasution (2019) argues that OEOI has a negative effect on ROA, from this research gap, the purpose of this research is to examine and analyze the effect of operating costs and operating income. As well as to test and analyze the effect of liquidity on the performance of Islamic banks in Indonesia which is mediated by company size.

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## Literatur Review

### Basel I and II

Basel capital accord is a set of regulations designed to keep the banking industry in a country running and well managed. Starting with the establishment of The Basel Committee on Banking Supervision (BCBS) in 1974 by the Governor of the Central Bank of the G-10 countries and issuing rules for the International Convergence of Capital Measurement and Capital Standards or Basel I which was implemented in Indonesian banking in 1992. Basel I summarizes the existence of a common thread between business risk and capital that must be provided by the Bank to anticipate these risks. Basel I is a term that refers to a series of central bank policies from around the world issued by the Basel Committee in 1988 in Basel, Switzerland as a set of minimum capital requirements for banks. This is also known as the Basel Accord 1988 This recommendation was confirmed in rule form by the Group of Ten (G10) countries in 1992. Basel I has generally been abandoned and replaced by a more comprehensive set of guidelines, called Basel II, which is currently implemented by several countries. Basel I only focus on anticipating credit risk from business failure by banks, while developments in the financial and banking system indicate that many banks that fail or close are due to market, operational or other types of risk.

### Enterprise Risk Management.

Enterprise Risk Management (ERM) is a process that is influenced by the board of directors and other personnel of an organization, implemented in a strategic setting, and covers the organization as a whole, designed to identify potential events affecting an organization, to provide sufficient assurance. related to the achievement of organizational goals (Hoppes et al., 2014). Two frameworks for understanding Enterprise Risk Management (ERM) are COSO and RIMS. Both describe approaches to identify, analyze, take responsibility for, and monitor risks or opportunities within or outside the environment the company faces.

### Information Asymmetry

(Myers, Majluf, 1984) argues that the effect of the relationship with "asymmetric" (unbalanced) information is owned by investors and management. The principle is that potential investors in securities have less information than management tends to issue securities when the market valuation of the firm's value is higher than that of management. In providing credit, the bank acts as the principal and the debtor acts as the agent. In general, the relationship between the agent and the principal runs unfairly because of hidden information. This condition also occurs in the banking world which is known as information asimetri, and this occurs because

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agents have better, more complete and comprehensive information about their business than creditors, in this case, banks (Diamond and Dybvig, 1983). Therefore, credit analysis requires a high ability for analysts to determine creditworthiness.

## **Hypothesis Development**

### **Effect of BOPO on ROA**

BOPO (Operational Costs on Operating Income) is a ratio that shows the level of efficiency and operational performance of the bank. This ratio measures the bank's ability to control its operating costs against operating income. The smaller this ratio, the more efficient the bank is in using its operational costs. According to Kusumastuti & Alam (2019) defining the operational cost ratio is the ratio between operational costs and operating income. This ratio is used to measure the level of efficiency and ability in carrying out operations. Empirical research that supports this research (Sukmana & Febriyati, 2016).

H1 = BOPO has a negative effect on ROA

### **Effect of FDR on ROA**

The financial performance of the bank in this study is profitability with return on assets (ROA) which is calculated from net income divided by total assets (Idowu et al., 2002). ROA provides information on the net profit generated per unit of monetary asset invested so that it also provides information on the ability of bank management to invest in bank assets. There is a positive influence on the amount of credit given to ROA. The intermediary role performed by banks is measured by loan FDR, which is effective if the bank can channel all its sources of funds in the form of credit after calculating the statutory reserve and liquidity. This shows that the increase in FDR, the more productive the sources of funds owned by the bank, the more bank profits can be. Nikomaram et al. (2013) stated that there is a positive and meaningful relationship between credit risk and liquidity. The size of the bank also has an impact on these two risk factors. However Hassan et al. (2019) stated that found a positive relationship between the effect of liquidity and credit risk on bank performance.

H2 = FDR has a positive effect on ROA

### **The effect of BOPO on NPF**

The level of efficiency of a bank in carrying out its operations affects the level of income generated by the bank. If operational activities are carried out efficiently, the income generated by the bank will increase. So that the greater the efficiency ratio, the lower the banking financial performance will be. Likewise, if the ratio of operating costs to operating income gets smaller,

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it can be concluded that the profitability of a company (banking) is increasing (Rini & Burhany, 2020).

H3 = BOPO has a negative effect on NPF

#### **The effect of FDR on NPF**

FDR is a ratio that shows a bank's performance in terms of financing. If the amount is high, if the FDR is high, the bank's liquidity will be low because the bank is channeling larger funds to customers. After that the customer will return the funds plus the additional, the additional will be part of the bank's profitability (Bashir, 2011).

H4 = FDR has a negative effect on ROA

#### **The effect of NPF on ROA**

According to Abedifar et al. (2013) defines the risk of financing received by the bank as one of the business risks of the bank, which results from non-repayment of loans or investments being made by the bank. Financing management is needed by banks, considering that the function of financing as the largest contributor to income for Islamic banks and also the level of financing soundness (NPF) also affects the achievement of bank profits. Non Performing Financing shows the ability of bank management in managing non-performing financing provided by the bank. So that the higher this ratio, the worse the quality of bank credit, which causes the number of non-performing loans to increase, the greater the possibility of a bank in a problematic condition. Credit in this case is credit given to third parties, not including credit to other banks. Non-performing loans are loans of substandard, doubtful and bad quality. Misman et al. (2015), Haryono et al. (2016) states that NPF has a negative effect on bank performance.

H5 = NPF has a negative effect on ROA

## **Research Methodology**

### **Type and Source of Data**

Sharia banking which is listed on the IDX 20012-2019 as the object of this research. The data form is financial reports (to be precise annual reports) of banking institutions listed on the stock exchange. The type of data is secondary data and the data source is the Indonesia Stock Exchange. Files related to data were downloaded from [www.idx.co.id](http://www.idx.co.id) and Bloomberg. Data specification is panel data (pooled data) which is actually a combination of data consisting of time series data and cross-sectional data. Using this data, it is not surprising that the sample size of this study was large.

### ***Operational Definition of Variables and Variable Measurement.***

1. Independent variable (X1)

Operational Cost to Operating Income (BOPO) The BOPO ratio is used to measure the ability of bank management to control operating costs against operating income. The formula is indicated by:

$$\text{BOPO} = \frac{\text{Total beban operasional}}{\text{Total pendapatan operasional}}$$

## 2. Independent variable (X2)

Financing to Deposit Ratio (FDR) The ratio used to measure the liquidity of a bank by dividing the amount of credit extended by the bank to third party funds. The formula is indicated by:

$$\text{FDR} = \frac{\text{Total kredit pembiayaan}}{\text{Total dana pihak ketiga}}$$

## 3. Mediation variable (M)

Noan Performing Financing (NPF) Noan Performing Financing shows the ability of bank management to manage problem financing provided by the bank. The NPF ratio can be formulated as follows:

$$\text{NPF} = \frac{\text{Pembiayaan (KL,D,M)}}{\text{Total Pembiayaan}}$$

Information:

NPF = Noan Performing Financing

Financing KL = Substandard Financing

Financing D = Doubtful Financing

Financing M = Bad Financing

## 4. Dependent Variable (Y)

Return on Assets (ROA) Profitability is measured by the ratio of earnings to assets or commonly known as ROA. The formula is indicated by the formula:

$$\text{ROA} = \frac{\text{Laba sebelum pajak}}{\text{Rata-rata total aset}}$$

### ***Data Analysis Technique***

This study used SEM Warp PLS version 7.0 (Sholihin and Ratmono, 2013).

Where, the model equation is as follows:

$$\text{ROA} = \alpha_1 + \beta_1 \text{BOPO} + \beta_2 \text{FDR} + \beta_3 \text{NPF} + \epsilon_1 \quad (1)$$

$$\text{NPF} = \alpha_2 + \beta_4 \text{BOPO} + \beta_5 \text{FDR} + \epsilon_2 \quad (2)$$

## Results and Discussion

### Structural Model Evaluation Test (Goodness of fit)

**Table 1. Fit Research Model**

Provisions	Conclusion
Average path coefficient (APC)=0.245, P=0.007	FIT
Average R-squared (ARS)=0.145, P=0.052	FIT
Average adjusted R-squared (AARS)=0.114, P=0.082	FIT
Average block VIF (AVIF)=1.025, acceptable if $\leq 5$ , ideally $\leq 3.3$	FIT
Average full collinearity VIF (AFVIF)=1.054, acceptable if $\leq 5$ , ideally $\leq 3.3$	FIT
Tenenhaus GoF (GoF)=0.381, small $\geq 0.1$ , medium $\geq 0.25$ , large $\geq 0.36$	FIT

Source: Data processing for WarpPLS 7.0

Based on the results of the fit model presented in the table, it can be concluded that this research model is fit. This is also supported by the AVIF value of 1.025 and the AFVIF value of 1.054 which is less than 3.3, indicating that there is no multicollinearity problem between indicators and between exogenous variables. The predictive power of the model is indicated by the GoF value of 0.381, so it can be concluded that the prediction of the model is very large because it is greater than 0.36.

### Full Collinearity VIF test, Adjusted R Squared and R Squared

**Table 2. Full Collinearity VIF, Adjusted R Squared and R Squared tests**

	ROA	BOPO	FDR	NPF
Full collinearity	1.095	1.042	1.020	1.060
R-Squared	0.225			0.065
Adj R Squared	0.190			0.037

Source: Data processing for WarpPLS 7.0

Based on the table above the test results, the construct in this study is very good category because based on the rule of thumbs is  $<3.3$ , which means that the model is free from problems of vertical, lateral collinerity and common method bias.

### Effect Size Test and Variance Factor Test (VIF)

**Table 3. Effect Size Test and Variance Factor (VIF) Test**

Deskripsi Jalur	Effect Size	VIF
BOPO → ROA	0.065	1.045
FDR → ROA	0.095	1.045
BOPO → NPF	0.042	1.005
FDR → NPF	0.023	1.005
NPF → ROA	0.066	1.024

Source: Data processing for WarpPLS 7.0

The test results have a VIF value which provides an explanation of whether there is a vertical collinerity problem in this research model. The results presented in the table above show that overall all variables have a VIF value below 3.3 so that it can be categorized that there is no problem with the vertical multicollinearity relationship.

### Full model testing

**Table 4. Results of the path coefficient and P-Value**

Deskripsi Jalur	Path Koefisien	P-Value
BOPO → ROA	0.304	0.003
FDR → ROA	0.321	0.002
BOPO → NPF	-0.201	0.039
FDR → NPF	0.144	0.105
NPF → ROA	-0.255	0.012

Source: Data processing for WarpPLS 7.0

In table 4 above, it can be explained that the first, second and third hypotheses are significant with p-values of 0.003, 0.002 and 0.039 respectively, so this hypothesis is accepted, Hypothesis 4 is rejected because the value is above 10%. Furthermore, with a value below 0.012 so that the 5 hypothesis is accepted.

### Mediation Effect Testing

According to Baron and Kenny (1986) in an analysis model that utilizes mediating variables, it can be seen whether there is full or partial mediation. Full mediation is when the independent variable does not have a significant effect on the dependent variable when there is no mediator. Meanwhile, partial mediation is when the independent variable can directly influence the dependent variable without involving the mediator variable. In addition, the

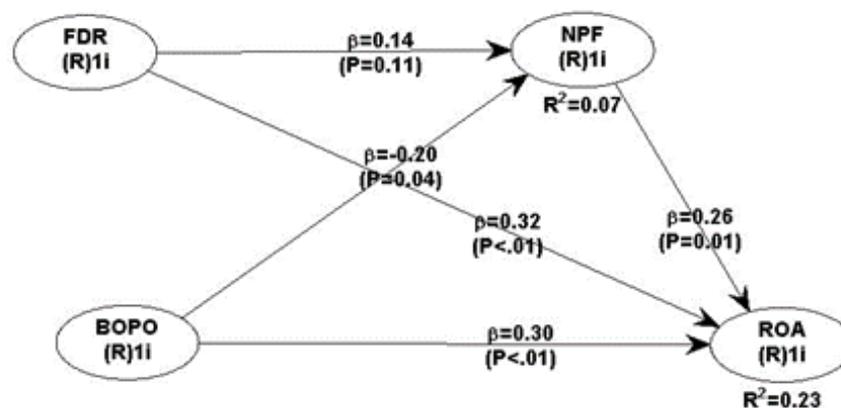
mediating variable occurs because the independent variable can predict the dependent variable directly, but its value is smaller than the predicted value of the mediator variable. In this case, if the coefficient of the prediction variable is greater than the coefficient of the mediating variable on the dependent variable, it cannot be called a mediator. Test the indirect effect and the total effect to determine the coefficient value of the indirect relationship. In this study, following the procedure as a formulation and mediation testing stages proposed by (Baron and Kenny, 1986).

**Table 5. Indirect Effect dan Total Effect**

Indirect effect	Path coefficient	P-value
BOPO → NPF → ROA	-0.051	0.033
FDR → NPF → ROA	0.037	0.270
Total effect	Path coefficient	P-value
BOPO → NPF → ROA	-0.201	0.012
FDR → NPF → ROA	0.144	0.039

Source: Data processing for WarpPLS 7.0

The results of the table above BOPO → NPF → ROA is -0.051 with a p-value of 0.033 ( $p < 10\%$ ). So that it can be explained that there is partial mediation. Likewise, the FDR → NPF → ROA is 0.037 and the P-value is 0.039. The conclusion is that BOPO can be partially mediated by NPF on ROA.



**Figure 1. Full Model Research**

## Discussion

Hypotheses 1 to 3 are accepted, then hypothesis 4 is rejected, while hypothesis 5, which acts as mediation, is accepted. Based on the results of credit risk research in this study states that credit risk proxied by NPF can partially mediate the relationship between the effect of operating costs and operating income on bank performance, BOPO is the ratio between operating expenses

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and operating income. The operational cost ratio is used to measure the level of efficiency and the ability of a bank to operate. The smaller this ratio means the more efficient the operational costs borne by the bank concerned, so that the possibility of a bank in a less problematic condition. The smaller this ratio, the better the bank's performance (Kusumastuti & Alam, 2019). Thus, the operational efficiency of a bank as proxied by the OEOI ratio will affect the bank's performance. However, this study cannot prove that credit risk in this study is not sufficient evidence to explain the effect of liquidity on bank performance. Integrated risk management is a process that allows banks to measure and manage all risks simultaneously. The recent chaos in the banking industry has increased the relative importance of risk management more than ever. The assumption is that when bad credit occurs, bank management will look for the best solution, one of which is the funds stored in bank capital which can be used in the event of default by customers due to various reasons, one of which is an increased interest rate, in line with Safitri et al. al. (2020), Safitri, Taolin, et al. (2020), Wahyudi et al. (2020), include interest rate risk in credit risk and find that the greater credit risk, which is indicated by an increase in customer default, will reduce bank performance.

## Conclusion

The purpose of this study was to analyze the relationship between BOPO and ROA mediated by NPF. This research was conducted at Islamic banking companies listed on the Indonesia Stock Exchange in 2012-2019. The results of this research have proven that NPF mediate the relationship the effect of operating costs and operating income on bank performance. Likewise with the first, second and third hypotheses, this study succeeded in proving that the effect of operating costs and operating income, as well as the effect of liquidity on bank performance, was accepted. However, hypothesis 4 NPF cannot prove the effect of FDR on ROA. This can be explained that liquidity management is carried out not only to measure the current liquidity position of the bank, but also to check the need for funds in various scenarios in case of different conditions. Lending to customers, in terms of the loan term, is also not absolutely under the control of the bank. Loans can also determine whether to borrow for the short or long term. Loans have their own strategies for managing their funds. Most of the funds in the bank are obtained by making agreements with customers, that is, these funds can be immediately withdrawn when demanded by current, savings, or when the deposit is due.

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