# DOES FINANCIAL RISK MATTER FOR FINANCIAL PERFORMANCE IN SHARIA BANKS?

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## ABSTRACT

*This study seeks to examine the impact of operational, liquidity, and credit risks on financial performance (ROA) at national Islamic commercial banks from 2015 to 2021. The model includes control variables such as technological risk (E-Banking) and macroeconomic variables (BI rate and inflation). This study used seven national Islamic banking businesses as examples. This work employs the panel data regression technique to investigate a mixture of time series from 2015 to 2021. In this study, the independent variables are credit risk as measured by Non-Performing Finance (NPF), liquidity risk as measured by Finance to Deposit Ratio (FDR), operational risk as measured by Operations Expenses to Operations Income (BOPO), and performance bank finances as measured by Return on Assets (ROA). According to the study's findings, the variable credit risk (NPF), operational risk (BOPO), and technological risk (E-Banking) all significantly and negatively affect financial performance (ROA). Meanwhile, neither liquidity risk nor inflation has a significant positive impact on financial performance (ROA). Furthermore, the BI rate has a negative, but not statistically significant, impact on financial performance (ROA).*

***Keywords:** Financial Performance, Finance Deposit Ratio (FDR), Non-Performing Finance (NPF), Credit Risk, Liquidity Risk.*

## ABSTRAK

*Penelitian ini bertujuan untuk menganalisis risiko kredit (NPF), risiko likuiditas (FDR), risiko operasional (BOPO) pada kinerja keuangan (ROA) pada bank-bank umum syariah nasional pada periode tahun 2015-2021. Kemudian, adanya variabel kontrol pada model ini, yaitu risiko teknologi (E-Banking), variabel makroekonomi (BI rate dan Inflasi). Sampel dalam penelitian ini adalah tujuh perusahaan perbankan syariah nasional. Penelitian ini menggunakan metode regresi data panel untuk mengkaji kombinasi time series dari tahun 2015-2021. Variabel independen dalam penelitian ini adalah risiko kredit yang diproksikan dengan Non-Performing Finance (NPF), risiko likuiditas yang diproksikan dengan Finance to Deposit Ratio (FDR), risiko operasional yang diproyekikan dengan Operations Expenses to Operations Income (BOPO) serta variabel dependen yaitu kinerja keuangan bank yang diestimasikan oleh Return on Asset (ROA). Hasil penelitian ini menunjukkan bahwa variabel risiko kredit (NPF) risiko operasional (BOPO), risiko teknologi (E-Banking) berpengaruh negatif dan signifikan terhadap kinerja keuangan (ROA). Sedangkan, risiko likuiditas (FDR) dan Inflasi memiliki pengaruh positif tidak signifikan terhadap kinerja keuangan (ROA). Lebih lanjut, BI rate memiliki pengaruh negatif namun tidak signifikan terhadap kinerja keuangan (ROA).*

***Kata Kunci:** Kinerja keuangan; Risiko kredit; Risiko likuiditas; Risiko Efisiensi; Risiko Lainnya*

**JEL: G21; G32**

**Introduction**

In order to support financial development, banking has a very vital task. Furthermore, as Indonesia's central bank, Bank Indonesia has complete control over banking (Anam, 2018). In running its business, the bank involves the community. One of the crucial activities of a bank is its function as a monetary intermediary between two parties who need and have capital; bank executives support an appropriate monetary framework and positively influence the bank's performance, profitability, and operations (Anam, 2018). National Islamic banks influence Indonesia's banking industry because of their position as an alternative for society, especially Muslims, the majority in Indonesia (Suciaty et al., 2019).

Furthermore, Islamic banks have a high market share; the performance of national Islamic banks has a strong influence on banking performance in Indonesia, that the seven national Islamic banks, namely Bank Syariah Indonesia (BSI), Bank Muamalat (BM), Bank Bukopin Syariah (BBPS), Bank BTPN Syariah (BTPNS), Bank Aladin Syariah (BAS), Bank Panin Dubai Syariah (BPDS), and Bank Victoria Syariah (BVS) were selected as the objects of this research. Despite their status as national private banks, the seven banks are exposed to various financial performance risks. According to Bank Indonesia Guidelines number 11/25/ PBI/2009, various risks banks face include credit, market, functional, operational, liquidity, strategic, reputation, legal, and consistency risks. This research is more focused on credit risk, liquidity risk, operational risk, and technologies risk.

Given that lending is one of the key sources of bank income, credit risk is one of the biggest risks that banks must manage (Dwinanda, & Sulistyowati, 2021; Nastiti & Kasri, 2019). Non-Performing finance can be used to gauge credit risk (NPF). Moreover, NPF can be considered a measure of a bank's handling of non-performing or subprime loans. If the NPF ratio is higher, the bank's credit quality deteriorates, and as a result, there are more non-performing loans or bad loans due to this situation. Because the bank still issues the interest expenditure for customer deposits, an increase in non-performing loans might result in a loss in sales and profit. Credit risk is influenced by asset quality, which is defined by past-due claims, the health of the bank, and the profitability of taking out bank loans (Abdellahi et al., 2017). Sanggel (2019) indicates that NPF has no bearing on Return on Asset (ROA). The findings of Korompis et al. (2020), Abdellahi et al. (2017) and Anam (2018), however, show that NPF has a considerable impact on Return on Asset as financial performance (ROA).

Liquidity risk is a metric for both performance and financial health. Due to their failure to satisfy short-term obligations as determined by the Finance to Deposit Ratio (FDR), which is calculated by dividing the whole amount of loans given by the total amount of third-party funds, banks are exposed to this risk. Because a high FDR ratio indicates that a bank's performance is deteriorating, it can be detrimental to public trust if it cannot meet its obligations (Anindiansyah et al., 2020). Liquidity risk is mainly caused by the time mismatch between inflows and outflows, primarily due to asset and debt structure (Abdellahi et al., 2017). Several investigations have revealed that LDR has no discernible impact on financial performance or ROA (Anam, 2018; Anindiansyah et al., 2020). However, studies by Lubis et al. (2019) show that FDR only partially affects financial performance (ROA).

Profit quality is impacted by operational effectiveness (BOPO). Any increase in bank operating costs without an equal increase in bank operating income will result in a reduction in operating profit, ultimately resulting in a decline in profit. Non-performing loans are the primary source of bank losses because they prevent the return of funds that have been routed and because of unsatisfactory profit-sharing, which denies banks the chance to make profits

and lowers total income (Ginting, 2017). Moreover, the banking sector is a "trust" sector. Investors will withdraw money collectively, which may generate a rush if they lose faith in financial reports that may result from ROA changes. As a result, a system is required to increase ROA within a corporation.

In the banking industry, especially Islamic banking, electronic banking, or from now on referred to as e-banking, is one of the tools being adopted. E-banking is preparing, compiling, and controlling financial transactions using an internet connection between banks and clients. Using electronic communication networks, electronic banking may be utilized to deliver banking services and goods directly to clients. The development of technology systems adopted by banks directly provides benefits in channeling products and services owned by banks to customers more interactively and communicatively for 24 hours with less interruption and faster (Brown & Mola, 2017).

Even though e-banking is a form of Islamic banking business strategy, adopting of e-banking can increase banking operational risks. Regarding Islamic banking, operational risk is caused by several factors; there are weak internal control processes that result in losses for Islamic banking, human error, system and technology failures, and external factors caused by natural disasters, terrorist attacks, and so on (Mwaura, 2013). The findings of earlier research done by Ayuning & Purwanti (2020) differ from those of the current study in that they indicate that the number of e-banking adoptions has a detrimental impact on the financial performance of Islamic banking.

The most crucial element influencing profitability is inflation. It is the tendency to continue to raise prices for general goods. If all of these product price increases do not occur at the same rate, or if price increases cannot occur simultaneously and continuously. According to a study in Albania by Duraj & Elvana (2015), inflation significantly lowers bank profitability. It differs from the study of Anindya et al. (2022), though, which claims that inflation has a positive but marginal impact on ROA.
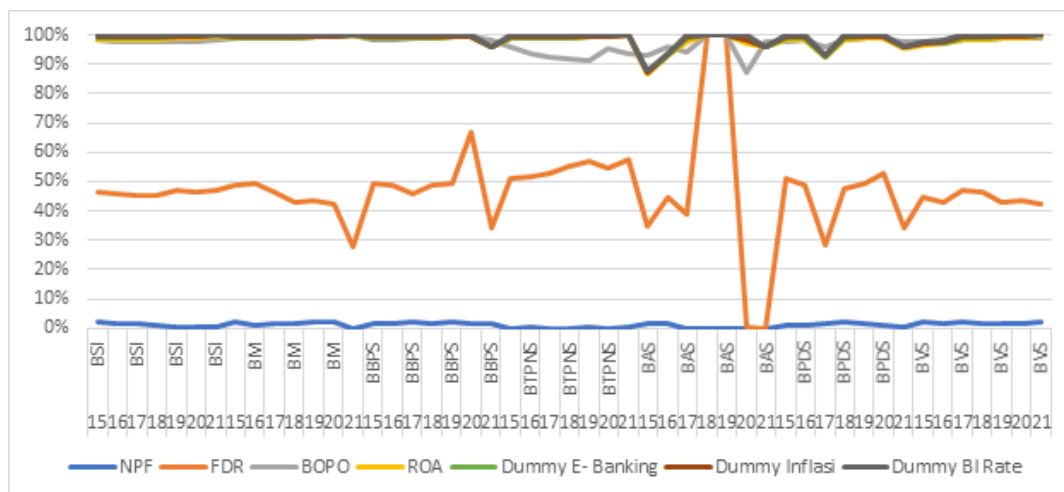


Source: OJK (2023)

**Figure 1: National Private Sharia Banking Statistics 2015-2021**

The BI Rate is another element that influences profitability. The Bank Indonesia (BI) Rate is the base interest rate available to the general public. This idea is consistent with Hidayati's study, which claims that interest rates have no impact on the profitability of Indonesia's Islamic banks (Hidayati, 2014). This research differs from that carried out by Ali (2012), who

investigated the variables influencing the profitability of Islamic banks in Pakistan. According to the study, Pakistan's Islamic banks are significantly more profitable when interest rates are considered. Contrary to Fitriany & Nawawi (2021), this study's findings indicated that the BI interest rate had a negative impact. From 2017 to 2019, it does not, however, significantly affect the Return on Assets (ROA) of state-owned banks.

The NPF, FDR, BOPO, and ROA ratios changed between 2015 and 2021, as shown in Figure 1. The NPF results of Bank Muamalat, BTPN Syariah, and Bank KB Bukopin Syariah improved in 2018–2019. The NPF yields of Indonesian Islamic banks; Bank KB Bukopin Syariah, Bank Panin Dubai Syariah, and Bank Victoria Syariah increased in 2019–2020. NPF yields at BTPN Syariah banks and Bank Victoria Syariah will rise in 2020–2021. High NPF results will raise the cost of asset reserves and other expenses, lowering bank ROA. When the total of bad loans exceeds the total of loans granted, a bank has an NPF (Pinasti & Mustikawati, 2018). The management of banks may be negatively impacted by higher NPF yields because high profitability results from a failure to recover the bank's core assets (Ambarawati & Abundanti, 2018).

Throughout 2017–2018, FDR at Bank BTPN Syariah and Bank KB Bukopin Syariah rose. FDR increased at Bank Muamalat, Bank KB Bukopin Syariah, Bank Aladin Syariah, and Bank Panin Dubai Syariah during 2018–2019. The FDR at Bank BTPN Syariah, Bank KB Bukopin Syariah, Bank Panin Dubai Syariah, and Bank Victoria Syariah increased throughout 2019–2020. Based on these findings, PBI No. 12/19/2010's FDR for commercial banks specifies that it should be between 78% and 100%. When a bank's FDR is above 100%, it means that loans are being disbursed faster than money is being raised, which could have an impact on the bank's ability to meet its obligations and its financial performance, or ROA. If a bank's FDR is below 78%, it is still ineffective in disbursing credit (Anam, 2018). Based on Table 1, Bank Aladin Syariah achieved an incredible number of 506,600, exceeding 100%, and Bank KB Bukopin had an FDR above 100% throughout 2020. Bank BTPN Syariah had an FDR near 100%, namely 97.37%.

During the 2019–2020, BOPO grew at Bank Syariah Indonesia, Bank Muamalat, and Bank Panin Dubai Syariah. All banks under study saw a decline in BOPO from 2020 to 2021, except for Bank Bukopin Syariah and Bank Aladin Syariah. The high value of this ratio reveals the significant amount of operational costs that the bank needs to generate operating income, which suggests that the bank is not running efficiently. In addition, a high volume of operating expenses will lower the profit realized because they function as an income statement deduction. In compliance with Bank Indonesia standards, the appropriate BOPO ratio is 50–75%. Based on the previous, this study seeks to examine the effects of operational risk (BOPO), liquidity risk (FDR), and credit risk (NPF) on financial performance (ROA) in Indonesian Islamic commercial banks throughout the five years of 2015–2021.

Meanwhile, regarding the implementation of e-banking in Islamic banking in Indonesia, it has been implemented since 2017, namely by Bank BTPN Syariah. However, the majority of Islamic banks will start implementing the use of e-banking in 2021. According to Bank Indonesia (BI), ideal inflation is moderate inflation. Based on the average ideal inflation rate for 2015-2021, a figure of 2.75% is obtained. Moreover, from this average, from 2015-2018, there was inflation above 2.75%, and from 2019-2021, inflation was below 2.75%. The percentage of the BI Rate within normal limits was 3.52%. From this average, from 2015-2020, the BI Rate was above 3.52%. Meanwhile, in 2021 the BI Rate will be below 3.52%.

**Literature Review**

The company's capacity to generate revenues from different policies and actions made is assessed using this ratio. By dividing net income by the average total assets, this ratio may be used to gauge a company's profitability (Fernos, 2017). Performance in the banking industry may be evaluated using profitability analysis. The analysis in this study uses ROA as a financial metric to demonstrate a bank's ability to maximize the value of each rupiah from its available resources (Havidz & Setiawan, 2015). The stronger the bank's financial performance, the greater the ROA. The positive performance is attributable to the sustained advantages of the resources it has used.

One of the threats that banks commonly face is credit risk. The danger that debtors or other parties will not be able to meet their obligations to financial institutions is known as credit risk. Financial institutions' financial performance may be impacted by credit risk because it may have a negative impact on their profitability. Non-performing finance is one of the ratios employed in this research (NPF). NPF can be used to gauge how well current non-performing loans can be repaid (Anam, 2018).

The bank's credit risk decreases as the NPF grows smaller. Additionally, a high NPF for a bank suggests that it lacks expertise in credit management and that a significant risk is involved in granting credit to the bank, which is consistent with the bank's high NPF (Riyadi, 2006). Following that, the NPF has a detrimental effect on the bank's financial performance, as ROA indicates. The NPF ratio negatively and considerably impacts ROA (Abusharbeh, 2016; Rohansyah et al., 2021; Sutrisno, 2016; Suwandi & Oetomo, 2017). However, according to the results of other studies, NPF does not significantly and negatively impact bank ROA (Wibisono & Wahyuni, 2017).

A corporation may be at risk for liquidity when it has trouble meeting its present obligations (Hanafi, 2012). Bank management might examine the Financing Deposit Ratio to assess liquidity risk (FDR). The FDR measures the bank's ability to offset investor withdrawals by using loans as a source of liquidity (Anam, 2018). A bank is characterized as having less liquidity if its FDR is higher than a bank with a lower ratio (Muhammad, 2005). On the other hand, the bank is less successful at extending credit the lower the FDR. A bank's profit will rise if its FDR is within the range of 78% to 92% established by Bank Indonesia. ROA will rise along with rising earnings. Moreover, the FDR variable has a partial positive and considerable impact on ROA for banks (Almunawwaroh & Marliana, 2018; Setiawan, 2017; Wibisono & Wahyuni, 2017). However, the findings of other studies show that FDR does not significantly and adversely affect bank ROA (Pinasti & Mustikawati, 2018).

Operating income is the difference between operational costs and margins paid by customers (Ginting, 2017). The operating expense ratio is used to measure the level of efficiency and ability of the bank to carry out its operational activities. The smaller this ratio, the operational costs incurred by banks are getting more efficient, and banks are likely in troubled conditions as well getting smaller. The greater the BOPO, the smaller the bank's ROA because the profit earned by the bank is small (Rahmah, 2018). Some researchers state that BOPO has a negative and significant effect on ROA (Adhiputra, 2017; Simatupang & Franzlay, 2016; Yuliana & Listari, 2021). However, the findings of other studies show that BOPO does not significantly and adversely affect bank ROA (Rohimah, 2021).

E-banking, as defined by Furst et al. (2014), is the use of the internet to provide standard services remotely, such as opening a deposit account or making a money transfer, sending and

paying electronic bills across multiple accounts, and enabling customers to receive and pay bills via a bank's website. In addition, e-Banking is a banking activity in which clients and banks undertake transactions by way of the internet. Internet banking uses the internet as a medium for financial transactions. In this activity, the internet network serves as a middleman or point of contact between bank clients and the institution. Additionally, the transactions are virtual or don't require a face-to-face meeting between the consumer and the relevant bank official. The definition of internet banking is one of the bank services that allows customers to obtain information, communicate, and conduct banking transactions via the internet network. It is not a bank that only provides banking services via the internet that the establishment and activities of internet-only banks; instead, it is based on Bank Indonesia circular letter No. 6/18/ DPNP concerning implementing risk management in service activities via the internet.

E-banking (Internet Banking and SMS Banking) has been shown to increase financial performance (Amali & Selvi, 2021; Fatihah & Sundari, 2021). Furthermore, e-banking, the board size, and institutional ownership have no statistically significant impact on bank performance (Murti, 2019; Yohani et al., 2019). Meanwhile, Ayuning & Purwanti (2020) explain that the number of e-banking adoptions harms the financial performance of Islamic banking. Internal control has no direct impact on Islamic banking's financial performance.

Inflation and the money supply have a positive connection. The more money that circulates in society, the higher the inflation rate. When there is deflation, the amount of money in circulation decreases. The enormous volume of money in circulation will impact the bank's profitability (Fitriany & Nawawi, 2021). Hasibuan (2014) investigates the impact of inflation on bank profitability. This means that an increase in the inflation rate will raise bank operating expenditures, while a fall in the real interest rate will lessen the public's willingness to save with the bank. Interest rates will climb when inflation rises, making individuals hesitant to borrow money from banks.

Furthermore, businesses in the real sector are hesitant to get financing to support their output, which will ultimately influence lowering bank profits. Inflation that is too high (hyperinflation) may make corporate decisions unclear and interfere with bank operations. If higher interest rates and a strong currency are also seen after an increase in inflation, ROA will benefit. Because of the increased income they would earn, it is anticipated that potential bank clients will be ready to deposit money with the institution; nevertheless, this will result in higher operating expenses. This is consistent with a study done by Hasibuan (2014), which made a similar claim. This contrasts with the study findings by Alim (2014), which found that ROA was positively but marginally impacted by inflation.

The expenses associated with storing cash increase with increasing interest rates. You can earn interest if you deposit all of your money with a financial institution, but you cannot make any personal purchases. The public's desire to store cash will decline as interest rates rise. They will choose to put their savings in a bank. This will impact bank profitability since they will gain from deposits in the bank in the form of interest paid. According to research by Fathoni (2017), high-interest rates, including loan and deposit or savings rates, result in a fixed spread margin from the difference between the two interest rates, and interest rates have no discernible impact on bank profitability. Contrary to Dithania & Suci (2022), which claim that the BI Rate has a favorable and considerable impact on ROA in Islamic public banking, this is not the case.

## Data and Research Methods

### *Data*

Quantitative information in the form of numbers processed using the Eviews version 10 program makes up the research data used in this study. The primary subject of this study is a national Islamic public banking institution with an OJK (financial services authority) registration. The objectives of this study is to ascertain the effects of three independent variables, including operational efficiency risk (BOPO), liquidity risk (FDR), and operational risk (NPF), on one dependent variable, bank financial performance (ROA). Additionally, the study's control variable is a dummy variable. Table 1 explains operational definitions, indicators, and variable measurement scales.

**Table 1: Operational Definitions**

| Variable | Reference Sources | Indicator | Scale |
|---|---|---|---|
| Credit Risk (NPF) | Measuring the amount of non-performing loans or bad loans (Yudiartini & Dharmadiaksa, 2016) | $NPF = \dfrac{Problem\ Financing}{Total\ Financing} \times 100\ \%$ | Ratio |
| Liquidity Risk (FDR) | Calculate the difference between the composition of the credit amount given and the capital utilized (Ginting, 2017) | $FDR = \dfrac{Financing\ Amount}{Third-Party\ Funds} \times 100\ \%$ | Ratio |
| Operational Efficiency Risk (BOPO) | Measuring the extent to which the composition of operating expenses incurred compared to total operating income (Anindiansyah et al., 2020). | $BOPO = \dfrac{Total\ Operating\ Expenses}{Total\ Operating\ Income} \times 100\ \%$ | Ratio |
| A variable dummy of E-banking | | 1= Islamic Commercial Banks that have just implemented E-Banking in 2021 <br><br> 0= Islamic Commercial Banks implementing E-Banking before 2021 | Categorical |
| BI Rate | | $SB = \dfrac{\Sigma\ SSBI\ for\ 1\ year}{12}$ | Ratio |
| Inflation | | $INF = \dfrac{IHK_t - IHK_{t-1}}{IHK_{t-1}}$ | Ratio |
| Financial performance | The comparative ratio of net profit before tax to total assets (Soetjiati & Mais, 2019) | $ROA = \dfrac{Profit\ before\ tax}{Total\ Asset} \times 100\ \%$ | Ratio |

### *Research Methods*

The documentation method is used in this study, which uses secondary data types. The document was compiled using historical financial ratio reports obtained from the Financial Services Authority's website from 2017 to 2021. The panel least square method is used in this study's analysis. The effect of the independent variable on the dependent variable is determined using this analytical method.

$$ROA_{it} = \alpha + \beta_1 NPF_{it} + \beta_2 FDR_{it} + \beta_3 BOPO_{it} + \beta_z Z_{it} + \varepsilon_{it} \tag{1}$$

Z denotes control variables, namely variable dummy of e-banking, inflation, and BI rate.

Based on the variables explored and the hypotheses created, this research model is displayed in Figure 2 and shows the connection between the variables evaluated in this study.
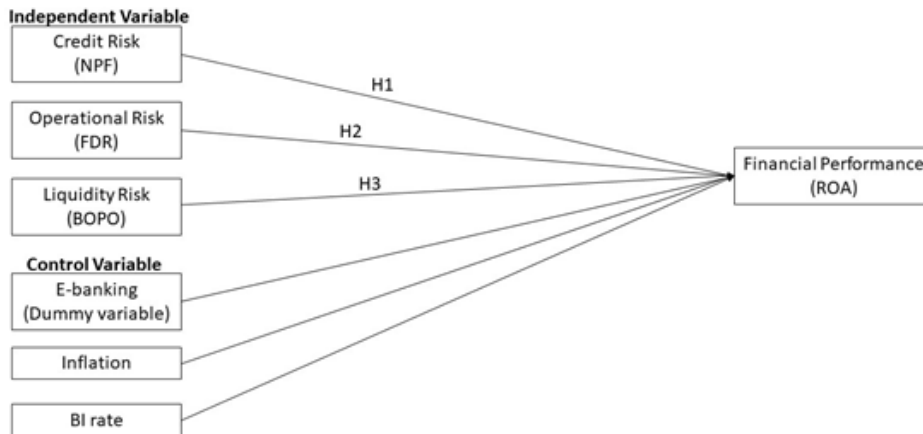


**Figure 2: The conceptual framework**

The first hypothesis is that Non-Performing Financing (NPF) reduces Return on Assets (ROA). An increasing NPF will result in a decreasing Return on Assets. According to the second idea, the Financing to Deposit Ratio (FDR) favorably influences the Return on Assets (ROA). The Financing to Deposit Ratio is growing as the Return on Assets rises. According to the third idea, when Operating Expenses Operating Income (BOPO) rises, so does Return on Assets, which is why BOPO negatively influences ROA. The Return on Asset independent and control variables were tested for multicollinearity, but no BLUE or refraction was found.

The Common Effect, Fixed Effect, and Random Effect approaches are used to estimate the panel data model above. To evaluate panel data, the exact model specifications used to represent the data must be tested. The Chow Test and the Hausman Test are the model specification tests in question.

## Result and Discussion

### *Result*

The selected model is the common effect model if the probability value (Prob.) for cross-section F >= 5%. In contrast, the selected model is the fixed effect model if the probability value (Prob.) for cross-section F = 5%, in which case H0 is rejected, and H1 is accepted.

**Table 2: Chow Test, Hausman Test, and LM Test**

| Test Type | Probability | Hypothesis Result |
| --- | --- | --- |
| Chow Test | 0.0312 | Reject H1, Then FEM |
| Hausman Test | 0.2321 | Accept H0, Then REM |
| LM Test | 0.0000 | Accept H0, Then REM |

Based on the estimation mentioned earlier, a probability value of 0.2321 is calculated, which is higher than alpha 0.05. then H1 is turned down while H0 is approved. It seems clear that the Random Effect Model (REM) is the optimal model to utilize. According to the findings of a number of tests, the Fixed Effect Model (FEM) and not the Common Effect Model (CEM) were chosen from the Chow test, and the Random Effect Model (REM) and not the Fixed Effect Model (FEM) was chosen from the Hausman test. It generates a distinct model from each test, as mentioned earlier. The Langrage Multiplier Test (LM-Test) must thus be tested in the next step.

Furthermore, panel regression with the Random Effect Model (REM) technique was chosen as the optimal regression model for this study. A 5% (0.05) alpha significance value was employed in this investigation. With an alpha significance level of 5%, the statistical test findings showed a probability value of 0.2321 > 0.05. It denotes that H0 is approved while H1 or an equivalent is rejected. The findings of the Random Effect Model (REM) test are displayed in the following table:

**Table 3: Regression Results Panel Data Least Square**

| Variable | REM |
|---|---|
| C | 13.64131 |
| | (0.0000)** |
| NPF | -1.660186 |
| | (0.0000)** |
| FDR | 2.38E-06 |
| | (0.6523) |
| BOPO | -0.062030 |
| | (0.0000)** |
| Dummy (E-Banking) | -2.169607 |
| | (0.0285)** |
| BI rate | -0.336655 |
| | (0.469) |
| Inflation | 0.257978 |
| | (0.7551) |
| R-square | 0.762067 |
| Adjusted R-square | 0.728077 |
| F-statistic | 22.42009 |
| Prob (F-statistic) | 0.000000 |
| Durbin-Watson stat | 1.373238 |

Note: ** significant ά = 0,05 (5%)

The table above demonstrates that the slope of the NPF is -1.660186, FDR is 2.38E-06, BOPO is -0.062030, Dummy (E-Banking) is -2.169607, Control Variable BI Rate is -0.336655, Control Variable Inflation is -1.755310. While the P-value for the NPF variable is 0.0000, the FDR variable is 0.6523, while for BOPO is 0.0000, and for the dummy (E-Banking) it is 0.0285, BI Rate is 0.4696, and inflation is 0.7551. The dependent variable (ROA), which has an error term of 2.462661 if the independent variable is zero, is 13.64131. more details, the following estimation model of the Random Effect is known as follows:

$$Y = 13.64131 - 1.660186 NPF + 2.38E{-}06 FDR - 0.062030 BOPO - 2.169607 Dummy\ E{-}Banking - 0.336655 Control\ Variable\ BIRATE + 0.257978 Control\ Variable\ Inflation \tag{2}$$

When the four independent variables in equation (2) are equal to zero, the financial performance (ROA) is 13.64131, which can be inferred from the constant value's result. Variable NPF has a negative correlation with variable ROA, as shown by the negative regression coefficient value of variable NPF, which is -1.660186. Accordingly, ROA will drop by 1.660186 for every percent increase in NPF. Additionally, the variable FDR has a favorable impact on

financial performance (ROA), as seen by the positive regression coefficient FDR, which has a value of 2.38E-06. Accordingly, an increase in FDR of 1% results in a rise in ROA of 2.38E-06.

Additionally, variable X3 (BOPO) has a negative regression coefficient value of -0.062030, indicating that variable BOPO has a negative impact on variable RO. As seen, every 1% increase in BOPO will result in a 0.062030 reduction in ROA. The dummy variable dummy (E-Banking) is negative at -2.169607, indicating that it has a negative impact on ROA. BI Rate is negative at -0.336655, indicating that it has a negative impact on ROA. Additionally, inflation is positive at 0.257978 which indicates that inflation has a positive influence on ROA. All variables received an R2 or Adjusted R-squared value of 0.762067 based on the regression findings in Table 3 above. That is that a change in the independent variable can explain something specifically.

**Table 4: Panel Data Regression Results**

| Variable | The Correlation | Significance |
|---|---|---|
| C | Positive (+) | Significant |
| NPF | Negative (-) | Significant |
| FDR | Positive (+) | Not Significant |
| BOPO | Negative (-) | Significant |
| Dummy (E-Banking) | Negative (-) | Significant |
| BI Rate | Negative (-) | Not Significant |
| Inflation | Positive (+) | Not Significant |

The NPF variable, which has a probability of 0.0000 and is significant at 5%, is -1.660186, depending on Table 3. The NPF variable's severe detrimental impact on financial performance (ROA) is discussed. However, the variable FDR has a probability of 0.6523 and a 2.38E-06 standard deviation, which is insignificant at 5% or below. The lack of a discernible positive impact on financial performance (ROA) caused by the FDR variable is explained. As a result, the BOPO is -0.062030 with a probability of 0.0000 and is significant at 5% or less. This indicates that the BOPO variable significantly lowers financial performance (ROA). Dummy Variable (E-Banking) is -2.213.750 with a probability of 0.0253, which is significant at ἀ 5%.

Furthermore, the Dummy E-Banking variable significantly lowers financial performance (ROA). The BI Rate variable has a value of -0.336655 and a probability of 0.4696, which is negligible at 5%. The explanation explains that the BI Rate variable has no appreciable detrimental impact on financial performance (ROA). The inflation variable, which has a probability of 0.7551 and is not statistically significant at 5%, is 0.257978. The explanation for this lack of a beneficial impact of the inflation variable on financial performance (ROA).

**Discussion**

The NPF variable's significance value was determined to be 0.0000 using Table 3, and the regression coefficient was -1.660186. Because the significance level is less than 0.05 and the regression coefficient is -1.660186, these results show that the NPF has a negative and substantial impact on the ROA of the national Islamic banks under study. According to these findings, each extra NPF of 1% will lower ROA by 16.60186%. With these findings, the first hypothesis may be accepted: From 2015 to 2021, credit risk (NPF) had a considerable negative impact on national Islamic banks' financial performance (ROA). The regression coefficient with a negative value demonstrates that the quantity of non-performing loans increases with the NPF and impacts the ROA of national Islamic banks. Under these circumstances, banks are forced to absorb operational activity losses, which can lower bank ROA. NPF yields

can be reduced by banks in order to boost bank ROA. The findings of this study corroborate those of earlier studies that showed a negative and substantial impact of NPF on bank ROA (Abusharbeh, 2016; Ambarawati & Abundanti, 2018; Suwandi & Oetomo, 2017; Yohani et al., 2019).

As shown in Table 3, which was used as the basis for this study's analysis, FDR had a regression coefficient of 2.38E-06 and a significant value of 0.6523. Because the significance level is higher than 0.05, these findings show that FDR has no appreciable beneficial impact on ROA. These findings confirm the second hypothesis, which claims that from 2015 to 2021, National Islamic banks' liquidity risk (FDR) would not significantly affect financial performance (ROA). Therefore, H0 is accepted, and H2 is denied. The positive regression coefficient indicates that a higher FDR value increases the bank's ROA. A high FDR yield but not exceeding a predetermined limit can increase the profit earned from margin/profit-sharing income. Excessive borrowing can raise the risks that banks face since the bank's source of revenue comprises the difference between profit sharing on loans and profit sharing on deposits (Muttaqin, 2017). Contrary to other research findings, which suggested that FDR had a favorable and considerable impact on bank ROA studies, the findings of this study contradict those earlier studies (Almunawwaroh & Marliana, 2018; Setiawan, 2017; Wibisono & Wahyuni, 2017). Therefore, banks need to be careful when giving credit so that bad credit does not occur in the future.

What was found in this study, which depended on Table 3, produced a significant value for the BOPO variable of 0.0000 and a regression coefficient of -0.062030. Due to the significance level being less than 0.05 and the regression coefficient showing a reduction in ROA of 6.2030% for every 1% more BOPO, these data show that BOPO has a negative and substantial impact on the ROA of the national Islamic banks under study. With these findings, the first hypothesis (H3), that operational efficiency risk (BOPO) has a considerable negative impact on financial performance (ROA) for National Islamic banks throughout 2015–2021, may be accepted. The regression coefficient with a negative number indicates that the higher the BOPO, the greater the total operating expenses and affects the ROA of national Islamic banks. Under these conditions, banks must bear losses from operational activities which can reduce bank ROA. Banks can suppress BOPO results to increase bank ROA. The findings of this study corroborate those of other studies that found BOPO had a negative and substantial impact on bank ROA (Adhiputra, 2017; Simatupang & Franzlay, 2016; Yuliana & Listari, 2021).

A regression coefficient of -2.169607 and a significance value of 0.0285 for the dummy variable (E-Banking) were calculated following Table 3's findings for this study. Given that the significance level is less than 0.05 and the regression coefficient is -2.169607, these findings suggest that the ROA of the national Islamic banks under study is negatively and significantly impacted by e-banking. In the dummy variable regression process, national Islamic banks that have just implemented E-Banking technology are given a value of 1. Meanwhile, national Islamic banks that have implemented E-Banking technology before 2021 are given a value of 0. From the regression results, it can be interpreted that Islamic banks that just implemented E-Banking technology in 2021 have lower financial performance (ROA) of -2.213.750 than National Islamic banks that have implemented E-Banking technology before 2021. This is consistent with what was discovered of a study done by Ayuning & Purwanti (2020), which found that the quantity of e-banking usage has a negative impact on the financial performance of Islamic banks.

Table 3's findings provided a significant value for the BI Rate of 0.4696 and a regression coefficient of -0.336655 for the outcomes of this investigation. Because the significance level is higher than 0.05 and the regression coefficient is -0.336655, these findings suggest that the BI Rate has a positive but negligible influence on the ROA of the national Islamic banks under study. The national Islamic banks' ability to finance and distribute money will be impacted by changes in the BI Interest Rate, which may. However, it will not necessarily considerably lower the income and earnings of Islamic banks. This concurs with the findings of studies by Alim (2014) and Fitriany & Nawawi (2021), which found that the BI Rate had a detrimental but not very substantial impact on return on assets (ROA).

The findings of this study, which focused on Table 3, yielded a significance value for inflation of 0.7551 and a regression coefficient of 0.257978. Because the significance level is higher than 0.05 and the regression coefficient is 0.257978, these results show that inflation has a detrimental but negligible impact on the ROA of the national Islamic banks under study. This suggests that, albeit not drastically, the return on assets will increase as inflation rises. This is a consequence of the interest system not being followed by the Islamic banking system. The findings of this study concur with those of Anindya et al. (2022) and Alim (2014), who found that inflation had a favorable impact on ROA. This effect, though, is small. Inflation is thus not as disruptive to managed money as it would be in the case of conventional banks.

**Conclusion**

The findings of this study revealed that, from 2015 to 2021, the credit risk variable (NPF) had a negative and significant impact on the financial performance (ROA) of national Islamic banks, the liquidity variable (FDR) had a not significantly positive impact, and the operational efficiency variable (BOPO) had a significantly negative impact. Additionally, dummy variables included in this study as controls, such as E-Banking, have a considerable detrimental impact on financial success (ROA). While the BI rate has little negative influence on financial performance (ROA) and a marginally beneficial impact on inflation. Following the study's findings, national Islamic banks, namely Bank BSI, Bank Muamalat, Bank Bukopin Syariah, Bank BTPN Syariah, Bank Aladin Syariah, Bank Panin Dubai Syariah, and Bank Victoria Syariah need to maintain financial ratios to improve their financial performance. These national Sharia banks need to monitor credit, liquidity, operational efficiency, and technology risks more effectively by conducting regular assessments. From these findings, national Islamic banks are advised to reduce the margin percentage or loan profit sharing prudently so that more customers can access loans which can reduce credit risk.

Furthermore, national Islamic banks are advised to increase profitability further because the Islamic banking industry has been running well in achieving its profitability. In addition, Islamic banks need to pay attention to liquidity risk to maintain bank conditions that they remain in a healthy financial condition. To reduce operational efficiency risks, it is hoped that Islamic banks will improve their operational management. To reduce technological risk, it is hoped that Islamic banking will be more responsive in detecting and overcoming problems that will be faced later. Even though e-banking is a form of Islamic banking business strategy, adopting e-banking can increase banking operational risks.

Regarding Islamic banking, operational risk is caused by several factors; weak internal control processes result in losses for Islamic banking, human error, system and technology failures, and external factors caused by natural disasters, terrorist attacks, etc. Finally, the BI Rate and Inflation variables do not significantly affect the return on assets of Islamic banking in Indonesia. This is because the operational system used in Islamic banking is interest-free

(usury) and is not directly affected by inflation and banking interest rates. However, as a financial institution, changes in interest rates will affect the operational risk of Islamic banks, although not significantly.

For further research, researchers can use other variables beyond those used in this study, such as capital (CAR) and market risk (NIM). Furthermore, researchers can study topics outside Indonesia's Islamic banks in the broader banking sector. As research on bank financial ratios advances, it is anticipated that it will be able to reach conventional banks and Islamic banks, both of which have sizable client bases in Indonesia.

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