THE PROFITABILITY ON PERSPECTIVE: CAPITAL, LIQUIDITY, CREDIT QUALITY AND EFFICIENCY OF SHARIA COMMERCIAL BANKS BEFORE AND AFTER THE PANDEMIC[*]

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Abstract

The ability of a bank to generate profits from its operational activities is a crucial factor in assessing its financial performance. The fluctuations in profitability, as measured by the Return on Assets (ROA), can be attributed to various factors such as the Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), and Operating Expenses Operating Income (BOPO). This research aims to investigate the impact of CAR, FDR, NPF, and BOPO on the ROA of Sharia Commercial Banks (BUS) in Indonesia, both individually and collectively. The purpose of this study is to examine how the Capital (CAR), Liquidity (FDR), Credit Risk (NPF), and Efficiency (BOPO) ratios impact the Profitability (ROA) of Sharia Commercial Banks in Indonesia from 2019 to 2021. This research follows a descriptive quantitative approach, utilizing the Annual financial statements of 11 selected Sharia Commercial Banks during the mentioned time frame. These financial statements were collected from the official websites of each respective bank. For this study, the researchers utilized panel data regression analysis as their method. The outcomes of the simultaneous hypothesis tests (Test F) for CAR, FDR, NPF, and BOPO variables indicate a noteworthy impact on the profitability (ROA) of Islamic Commercial Banks. In the partial test (Test t), it was found that the CAR variable does not possess a considerable positive influence on the ROA of Islamic commercial banks. Conversely, the FDR variable exhibits a significant negative influence on ROA, whereas the NPF and BOPO variables exhibit a meaningful positive influence on ROA.

Keywords: Capital Adequacy Ratio (CAR), Financing to Deposit Ratio (FDR), Non-Performing Financing (NPF), Operating Cost to Operating Income (BOPO), Profitability (ROA)

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1. Introduction

One of the key factors in achieving Good Corporate Governance in Indonesian banking is the transparency of the Bank's financial condition to the public, which holds great significance at present. By being transparent, there is a heightened expectation that it will bolster the public's confidence in national banking institutions. Simultaneously, enhancing the transparency of the Bank's financial condition will diminish information gaps (known as asymmetric information), allowing market participants to provide fair evaluations and fostering the development of market discipline (Chakri et al., 2023). Hence, it is mandatory for Banks to meticulously create and present financial records in the manner specified by Bank Indonesia regulations. These records encompass Annual Reports, Quarterly and Monthly Published Financial Reports, as well as consolidated financial reports. Notably, the Quarterly Publication financial reports comprise a range of bank financial ratios (Bank Indonesia Regulations, 2001).

The financial ratios of this bank offer three distinct advantages to three different groups (Wang et al., 2021). Firstly, for managers, the analysis of these ratios serves as a valuable tool for both financial planning and control. Secondly, it proves beneficial for credit analysis in the banking sector, aiding in the evaluation of applicants' capacity to repay their debts. Lastly, securities analysts find it advantageous as they can utilize these ratios to assess the equity and potential of security prices, including determining the ratings for long-term debts.

The financial reports of sharia commercial banks, published quarterly, consist of various financial ratios. These ratios cover important areas such as capital, productive assets, profitability, liquidity, and compliance. One of the key ratios used to assess capital is called the CAR. CAR considers factors like credit risk/fund distribution, market risk, and fixed assets in relation to capital. Moving on to productive assets, there is a specific aspect called non-performing financing (NPF) that is taken into account. When it comes to evaluating profitability, we rely on a couple of important ratios: ROA and Operational Costs to Operational Expenses. These ratios help us gauge the financial health of a company. Additionally, we use the FDR to assess the liquidity of a bank. By understanding these ratios, we can make informed decisions about the financial performance of an organization (Najam et al., 2022).

In this research, we will be exploring the impact of financial ratios by analyzing various indicators mentioned earlier. Among these six factors, profitability stands out as the ultimate goal for banking institutions. Hence, in order to capture this aspect effectively and commonly used financial ratio, we have selected ROA (Return on Assets) as our Dependent Variable (Fig. 1).

There are several factors that have an impact on a bank's ROA. These factors include CAR, Bank Operating Profitability, NPLs, and FDR. CAR is a financial measure that is closely linked to the amount of capital held by a bank. The level of capitalization has a direct influence on the bank's ability to effectively carry out its operations. If a bank possesses sufficient capital to absorb unexpected losses, it can efficiently manage its activities, leading to an increase in shareholder wealth. On the other hand, inadequate capitalization can hamper the bank's performance. Thus, CAR plays a crucial role in determining the overall performance of a bank (Fig. 2).

As per the regulations set by Bank Indonesia, BOPO represents a comparison of the overall operating costs and income of a bank. Its purpose is to gauge the effectiveness of operational activities in Sharia banks (as stated in the Bank Indonesia Circular Letter) (Desai 2022). A higher BOPO signifies lower efficiency in carrying out these activities. On the contrary, if operations are conducted efficiently, it leads to increased profits and ultimately enhances financial performance. Consequently, the bank's ROA is influenced by its operating efficiency, which can be observed through the BOPO ratio.

Banks, in their day-to-day activities, are not immune to the presence of Fund Distribution Risk. This risk refers to the potential loss faced by a bank when it is unable to recover the funds it

has lent or invested (as stated in Bank Indonesia Regulations, 2005). NPF, on the other hand, is a financial indicator that pertains to financing risk. NPF is like a comparison, you know, between the total problematic financing and the total financing given to debtors. So, when a bank has a high NPF, it means that the amount of problematic financing is actually more than the amount of credit they give out to debtors. And let me tell you, when a bank has a high NPF, it's not good news for them. It ends up increasing their costs in different ways - like having to set aside reserves for productive assets and other costs. In simpler terms, the higher a bank's NPF is, the more it messes up their overall performance.

In the meantime, FDR is a measure of a bank's capability to meet its responsibilities. Therefore, if the FDR is higher, it indicates greater profits for the bank (assuming that the bank can efficiently allocate funds). As the bank's profits grow, so does its overall performance. Consequently, the magnitude of a bank's FDR ratio has an impact on its performance (Fig. 3).

The truth is, not all theories like the ones mentioned earlier (where the impact of CAR and FDR are directly linked to ROA and the impact of BOPO and NPF are inversely linked to ROA) align with the actual evidence we have (Fig. 4). Just like what occurred during the emergence of Sharia Commercial Banks from 2019 to December 2021 (before and after the pandemic), there was a discrepancy between theory and the real-world proof we had (Wang et al., 2022). When it comes to the information regarding the changes in financial ratios of Sharia Commercial Banks from 2019 to December 2021, the overall representation can be observed through Fig. 5. The following observations can be made from it.
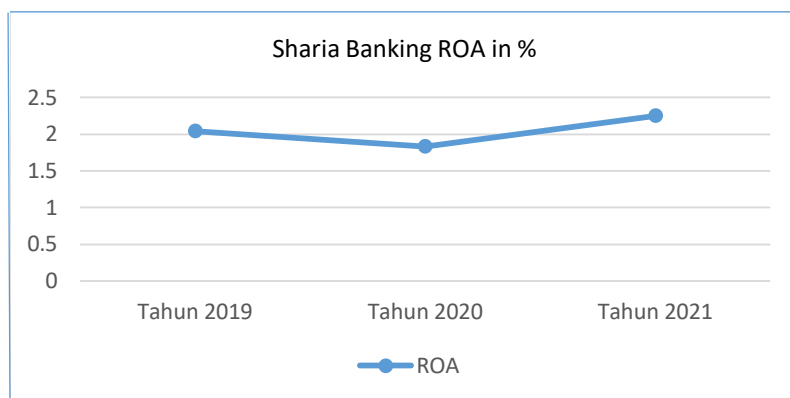
Fig. 1. Sharia Banking ROA before and after the pandemic for the period 2019 to 2021
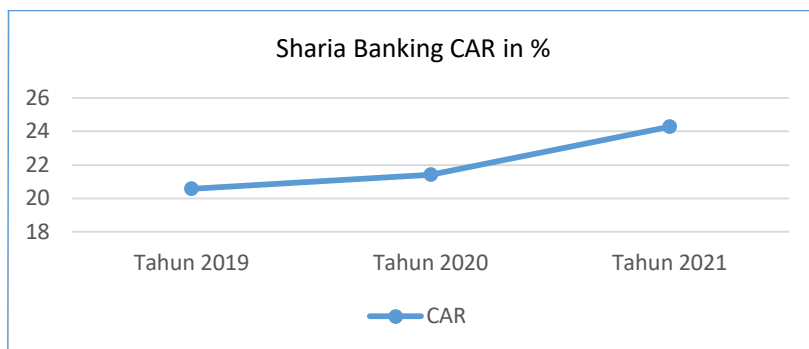
Fig. 2. Sharia Banking CAR before and after the pandemic for the period 2019 to 2021
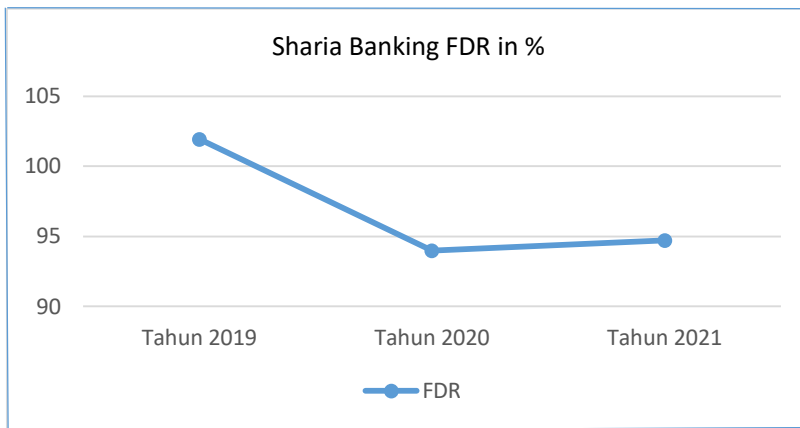
Fig. 3. Sharia Banking FDR before and after the pandemic for the period 2019 to 2021
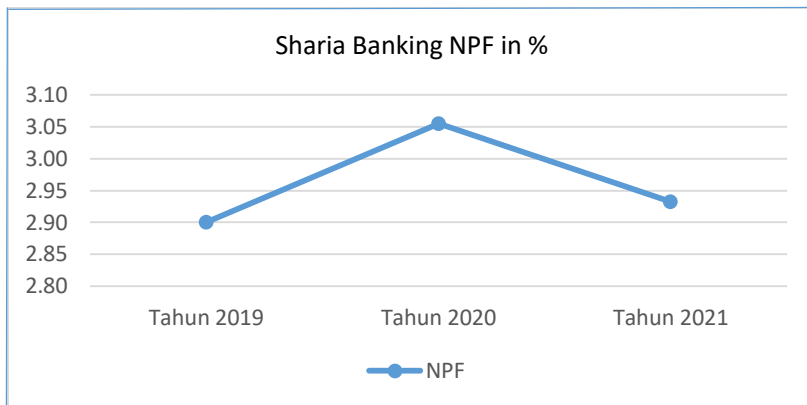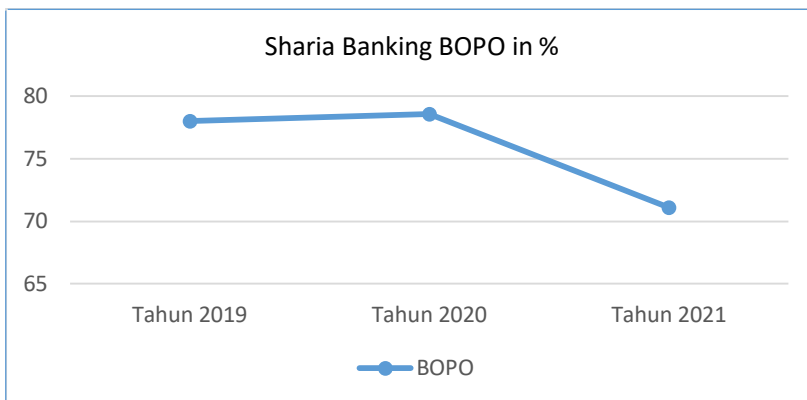

Fig. 4. Sharia Banking FDR Before and After the Pandemic for the Period 2019 to 2021

Fig. 5. Sharia Banking BOPO before and after the pandemic for the period 2019 to 2021

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Upon observing the depicted image, it is evident that the trajectory of ROA, CAR, FDR, NPF, and BOPO in the market of Sharia banking exhibits a noteworthy augmentation. It is worth noting that despite experiencing a decline in 2020 during the onset of the pandemic compared to 2019, as reported by Republika Online (2020), Vaithilingam et al., (2024), expounds that sharia banking's progress in terms of financing surpasses the growth rate of general banking credit. This notion finds support in the significant expansion of third party funds. During the month of July in the year 2020, the growth rate of conventional bank credit was recorded at a modest 1.04 percent. On the other hand, Sharia bank financing experienced a significant growth rate of 10.23 percent. Additionally, deposits witnessed an increase of 8.78 percent for sharia banks and 8.44 percent for conventional banks. Vaithilingam et al., (2024), an expert in the field, stated that despite the global financial sector's downturn, sharia banking has exhibited its resilience. In fact, due to the relatively young age of Islamic banking in Indonesia, several banks have managed to develop digital services that surpass those provided by conventional banks in terms of efficiency and robustness. Vaithilingam et al., (2024), also emphasized that not all Islamic banks share the same financial ratios, highlighting their unique characteristics and diversity within the industry. Despite the ongoing pandemic, it is noteworthy that sharia banks have managed to maintain a commendably high CAR of approximately 20-22 percent. What is particularly interesting is that this ratio is evenly distributed among Book I, II, and III sharia banks. However, when we delve deeper into the financial performance of Islamic banks in Books I and II, we find that their ROA and NOM are disappointingly low, standing at less than one percent. On the other hand, Book III sharia banks exhibit a slightly better ROA and NOM of around two percent. It is worth mentioning that Bank Buku II and Bank Buku I encounter the challenge of high deposit costs due to customers' preference for directing their funds towards larger banks.

The performance or profitability of Islamic banks in Books I and II is also remarkable, with an impressive rate exceeding 90 percent, in contrast to the BOPO of Islamic banks in Book III, which stands at approximately 81 percent. This figure is quite competitive and even surpasses the efficiency of conventional banks. The ratios pertaining to troublesome financing for Islamic banks in Books I and II are still documented as notably high, hovering around 5.3 percent and 3.6 percent respectively. In the meantime, sharia banks featured in Book III possess superior infrastructure and exhibit a more advanced approach to risk management. Furthermore, in the year 2021, as per the account provided by the Managing Director of BSI, Hery Gunardi, via online cash finance (2021), amidst the trying economic circumstances caused by the Covid-19 pandemic, the total assets of sharia banking on a national scale are projected to maintain an upward trajectory. Specifically, in July of 2021, there was an observed growth of approximately 16.35% in Islamic banking assets within the country. Moreover, financing experienced a growth rate of 6.82%, while Third Party Funds (DPK) exhibited a growth rate of 17.98%. It is worth noting that even in these challenging economic conditions, BSI, being the largest sharia bank in the nation, managed to achieve commendable results. In the first semester of 2021, BSI achieved a net profit of IDR 1.48 trillion, marking a noteworthy increase of approximately 34.29% compared to the previous year. This commendable growth in profits can be attributed to the expansion in financing activities and the acquisition of high-quality third party funds (DPK). As a result of this favorable performance, BSI's total assets reached IDR 247.3 trillion by June 2021, representing a substantial rise of around 15.16% from the previous year. In terms of financing alone, BSI disbursed IDR 161.5 trillion, demonstrating an impressive growth rate of approximately 11.73% year on year. These remarkable figures testify to BSI's ability to solidify its position as a key player in the Indonesian Sharia banking industry at present. To ensure that we keep growing in the future, BSI will make further enhancements to our digital capabilities. This is evident from the notable increase in the number of transactions through BSI's digital channels during the second quarter of 2021. By June 2021, the total value of transactions conducted through BSI's digital channels had reached IDR 95.13 trillion.

This impressive growth can be attributed to the rising number of mobile banking users, which has now reached a staggering 2.5 million.

According to a report by Business Finance (2021), the assets of sharia banks in 2021 were recorded at IDR 632 trillion, showing a significant growth of 15.80 percent compared to the previous year. On the other hand, conventional banking experienced a comparatively slower growth of 8.07 percent, reaching IDR 8,954 trillion. When it comes to credit or financing, Islamic banks witnessed a growth rate of 7.35 percent, amounting to IDR 405 trillion, while conventional banks only had a minimal growth rate of 0.17 percent, reaching IDR 5,302 trillion. Additionally, sharia bank DPK showed impressive performance with a growth rate of 16.54 percent, totaling IDR 501 trillion. Conversely, conventional banks saw a growth rate of 10.88 percent, totaling IDR 6,586 trillion. According to Anton, this implies that sharia banking has the potential for improvement. Nonetheless, there is a hindrance in the form of literacy or public comprehension. In comparison to nations like Saudi Arabia, where the share stands at 63 percent, Indonesia lags significantly in terms of Sharia banking.

Several scholars have conducted an in-depth analysis of the variables employed in this study, including esteemed researcher Budi Ponco, who delved into the investigation of the impact of CAR, NPL, BOPO, NIM, and LDR on banking ROA listed on the Indonesia Stock Exchange during the 2004-2007 timeframe. In his comprehensive exploration, Ponco identified CAR, BOPO, and LDR as the pivotal factors that exert influence over ROA. To ascertain the extent of their impact, he opted to employ a research tool known as multiple linear regression equation. The compelling outcomes derived from this meticulous study reveal that both CAR and LDR yield a favorable and noteworthy effect on ROA. On the other hand, BOPO demonstrates a detrimental yet significant influence on ROA. Intriguingly, while NPL does exhibit a negative impact on ROA, its statistical significance remains inconclusive.

During the research, Xu et al., (2022) delved into the impact of CAR, BOPO, NPL, NIM, and LDR ratios on the financial performance of banking companies listed on the JSE. Analyzing data from June 2002 to June 2007, he concluded that both CAR and LDR had a positive and noteworthy influence on banking performance, as evident in the return on assets (ROA). On the other hand, the variable BOPO exhibited a negative and substantial effect on ROA. Interestingly, no discernible effect was observed when it came to the NPL variable and its impact on ROA.

Jhonannes R.W. Simorangkir conducted a study on how the performance of National Private Commercial Banks in relation to Foreign Exchange impacts the Indonesian Stock Exchange. His findings indicated that CAR (capital adequacy ratio) had a positive impact on ROA (return on assets), however, it was not statistically significant. On the other hand, both BOPO (operational costs) and NPL (non-performing loans) were observed to have a negative influence on ROA. Although the negative impact of LDR on ROA is observed, it does not hold much significance. This finding aligns with Indira Januarti's study, which focused on using the CAMEL proxy variable and various bank characteristics to anticipate bank bankruptcy in Indonesia. The research concluded that Equity, NIM, ROA, Core Insider, and Logsize serve as viable indicators for predicting bank bankruptcy.

The research conducted by Tarmizi Achmad and Willyanto Kartiko Kusumo delves into the realm of financial ratios as indicators to anticipate the likelihood of banking bankruptcy in Indonesia. In this study, various financial ratios are employed as variables to explore their correlation with the potential for bank failure. It is observed that the potential for bank failure is influenced by factors such as capital strength, assessed through CAR and DER, asset quality evaluated through RORA and ACTA, level of management efficiency scrutinized via COF and COM, profitability measured by ROE, ROA, and NIM, as well as liquidity factors examined through Quick Ratio, LDR, and Interbank Ratio. In this study, a total of 25 different types of banks were examined. Out of these, 15 banks were found to be financially stable, while the remaining 10

banks were on the verge of bankruptcy. To analyze the data, the researchers employed the multiple linear regression technique. The findings from this investigation indicate that factors associated with the quality of productive assets and profitability play a significant role in determining whether or not a bank will face bankruptcy.

Almalia is conducting research on the various factors that impact a company's likelihood of facing bankruptcy and financial hardships. The study includes several variables such as CAR, APB, NPL, PPAPAP, ROA, NIM, and BOPO. To analyze the data, a multiple linear regression equation is employed as the research method. The findings indicate that both CAR and BOPO are significant indicators when it comes to predicting bankruptcy and financial difficulties within the banking industry.

In his research, Muhammad Sarifudin found that the BOPO variable had a significant impact on profits. However, the variables CAR, OPM, NPM, NIM, DER, and LDR showed no significant effect on profits. Agus Suyono's study revealed that the ratios of CAR, BOPO, and LDR had a significant influence on ROA. On the other hand, NIM, NPL, operating profit growth, and credit growth did not yield any noteworthy results in terms of ROA. Merkusiwati conducted an evaluation on the impact of CAMEL on company performance. The variables considered in this research were CAR, RORA, NPM, ROA, and LDR. The method employed for conducting the research involved utilizing the multiple linear regression equation. The results of the study indicate that during the time period encompassing 1996-2000, the CAMEL ratio exerted a noteworthy and beneficial influence on the ROA. It is worth highlighting that in the year 1997, however, the CAMEL ratio did not yield a significant impact on the ROA.

2. Methods

In this particular research, the chosen method of investigation is a quantitative approach that combines both descriptive and verification methods (Anggraeni, et al., 2021; Anggraeni and Winarningsih, 2021; Waty, et al, 2023). The researchers have focused on utilizing the quantitative method to analyze the financial reports of sharia banking institutions that have been registered with the Financial Services Authority during the period of 2019 - 2021. To aid in this analysis, they have employed panel data regression techniques with the assistance of the e-views application.

Data collection techniques

This research focuses on studying the sharia banks that were registered with the Financial Services Authority between 2019 and 2021. A total of 15 sharia banks make up the population for this study, but not all of them will be used as research subjects. To ensure accurate results, a sample will be taken using the same sampling technique. The chosen technique is non-probability sampling, specifically the purposive sampling technique. As explained by Bachri et al., (2024), purposive sampling involves selecting samples based on specific considerations.

The purpose behind choosing samples through purposive sampling is due to the fact that not all samples possess criteria that align with those identified by the researcher. Consequently, the chosen sample was determined based on certain criteria established by the researcher in order to acquire a representative sample. The banking criteria employed as samples in this research are outlined below:

Sharia banking companies have been registered with the OJK in a consecutive manner from 2019 to 2021.

There are Sharia banking companies that are registered with the OJK and possess all the necessary information and data for the period spanning from 2019 to 2021.

Based on these specific criteria, we managed to acquire a set of 11 sharia banks. For the purpose of this research, we will be utilizing the sharia banks as given in Table .

Table 1. Sharia commercial bank data used as sample

No	Bank
1	PT. Bank ACEH
2	PT. Bank NTB Syariah
3	PT. Bank Muamalat Indonesia
4	PT. Bank Victoria Syariah
5	PT. Bank Jabar Banten Syariah
6	PT. Bank Syariah Indonesia
7	PT. Bank Mega Syariah
8	PT. Bankk Panin Dubai Syariah Tbk
9	PT. Bank KB Bukopin Syariah
10	PT. Bank BCA Syariah
11	PT. Bank BTPN Syariah Tbk

3. Results

- *Panel data regression model selection test*

We can test the three models above using the Chow Test, Hausman Test, and Langrange Multiplier (LM) Test to determine which one is the best.

The Chow test is a test used to determine whether the Common Effect Model and Fixed Effect Model are more appropriate to use. The hypothesis used in the Chow test is as follows:

H0 = Common Effect Model
Ha = Fixed Effect Model

The Chow test is a helpful tool for determining the p-value. When the p-value falls below the significance level of $\alpha=5\%$, we can confidently reject the null hypothesis (H0). This implies that the Fixed Effect Model would be a better fit for our analysis. Conversely, when the p-value exceeds $\alpha=5\%$, we accept the null hypothesis (H0), indicating that the Common Effect Model would be more appropriate. The data processing results obtained through the application of the Chow test are presented in Table 2.

Table 2. Chow test results

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	7.471703	(10,18)	0.0001
Cross-section Chi-square	54.092955	10	0.0000

After carefully analyzing the outcomes of the Chow test mentioned earlier, it is evident that the Cross-section F probability value amounts to 0.0000. This clearly indicates that the p-value is lower than $\alpha=5\%$, leading us to reject H0. Consequently, it can be concluded that the Fixed Effect Model would be more suitable for implementation.

- *Hausman test*

The Hausman test is a valuable tool employed to ascertain the suitability of either the Random Effect Model or the Fixed Effect Model. It allows us to determine which model should be utilized in a given scenario. The hypothesis utilized in the Hausman test is as follows:

H0 = Random Effect Model

Ha = Fixed Effect Model

The Hausman test is a tool that helps us determine the probability value of F. If this probability value of F is found to be less than α=5%, then we reject H0, suggesting that the Fixed Effect Model is the more suitable choice. On the contrary, if the probability value of F exceeds α=5%, then we accept H0, indicating that the Random Effect Model would be a better fit. Let's take a look at the outcomes of data analysis conducted using the Hausman as presented in Table 3.

Table 3. Hausman test results

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	69.812467	4	0.0000

After analyzing the Hausman test results, we found a random cross-section probability value of 0.0000. This indicates that the p-value is greater than α=5%, leading us to accept H0. Consequently, the Fixed Effect Model is deemed more suitable in this case. As a result, there is no need to conduct the Langrange multiplier test.

- *Panel data regression model analysis*

After performing the Chow and Hausman tests, the Fixed Effect Model (FEM) estimation results are then obtained following a significance test (Table 4).

Table 4. Panel data regression analysis

Dependent Variable: LNROA			
Method: Panel Least Squares			
Date: 10/07/23 Time: 12:12			
Sample: 2019 2021			
Periods included: 3			
Cross-sections included: 11			
Total panel (balanced) observations: 33			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.429480	1.885884	-2.879010	0.0100
BOPO	0.059316	0.009483	6.254972	0.0000
CAR	0.059771	0.043381	1.377835	0.1851
FDR	-0.035037	0.011431	-3.065173	0.0067
NPF	0.707412	0.282354	2.505408	0.0221
Effects Specification			
Cross-section fixed (dummy variables)			

Based on Table 4, the multiple linear regression equation expressed by Eq. (1) is obtained:

LNROA = -5.42948005637 + 0.0593159020513*BOPO + 0.0597713919518*CAR - 0.0350373094083*FDR + 0.707412275586*NPF + [CX=F]   (1)

As follows, the equation can explain the panel data regression.

The variable constant, indicating a result of -5.429480, serves as evidence that the independent variable is equal to zero. This suggests that the average level of bank ROA has experienced an increase of -5.429480 units, while keeping other variables constant.

The regression analysis of the independent variable CAR, which has a positive direction of analysis, indicates that an increase in every one unit of the CAR ratio can lead to a rise in the bank's ROA level by 0.059771 units. This is based on the assumption that the other constant variables remain unchanged. The regression analysis shows that the independent variable FDR has a negative impact on the bank's ROA level. For every one unit increase in the FDR ratio, the ROA level decreases by -0.035037 units. This relationship holds true when all other variables remain constant. The regression analysis reveals that there is a negative relationship between the independent variable FDR and the bank's ROA level. Specifically, for every one unit increase in the FDR ratio, the bank's ROA level decreases by -0.035037 units. This holds true assuming all other variables remain constant. The regression analysis of the independent variable NPF, which has a value of 0.707412 and is analyzed in a positive direction, demonstrates that an increase in the NPF ratio by one unit can result in a decrease of 0.707412 units in the bank's ROA level, assuming that the other constant variables maintain their constant values.

The analysis of the independent variable BOPO reveals a regression coefficient of 0.059316, indicating a negative relationship. This suggests that for every one unit increase in the BOPO ratio, there is a corresponding decrease in the bank's ROA level by 0.059316 units, assuming all other variables remain constant.

- *Hypothesis testing*

In this research, the hypothesis testing methodology employed encompasses two distinct types of tests. These are the coefficient of determination test, commonly known as R^2, and the F test and t test. As for the outcome of these evaluations, here are the results obtained from both tests:

- Analysis of the coefficient of determination (R^2)

In this research, the coefficient of determination test is demonstrated through the Adjusted R-Square value. This value, derived from the regression model, is utilized to assess the extent to which the independent variables - CAR, FDR, NPF, and BOPO disclosures - are effective in elucidating the dependent variable, ROA (Return on Assets). The Eviews output for this coefficient of determination test is presented in Table 5.

Table 5. Coefficient of determination test results (R^2)

Dependent Variable: LNROA			
Method: Panel Least Squares			
Date: 10/07/23 Time: 12:12			
Sample: 2019 2021			
Periods included: 3			
Cross-sections included: 11			
Total panel (balanced) observations: 33			
Root MSE	0.749	R-squared	0.873
Mean dependent var	-0.155	Adjusted R-squared	0.773
S.D. dependent var	2.13	S.E. of regression	1.014
Akaike info criterion	3.169	Sum squared resid	18.512
Schwarz criterion	3.85	Log likelihood	-37.287
Hannan-Quinn criter.	3.398	F-statistic	8.799
Durbin-Watson stat	2.317	Prob(F-statistic)	0.000

According to the information provided in the Eviews output, we can observe that the Adjusted R-Square value is 0.7733. This figure signifies that approximately 77.33% of the changes in the Profitability variable, which is represented by ROA, can be elucidated by the variables CAR,

FDR, NPF, and BOPO. The remaining portion (which amounts to 22.6649% when subtracted from 100%) is attributed to other factors that lie beyond the scope of the regression model employed in this particular study.

- *Simultaneous Test (f Test)*

The aim of Simultaneous Test is to determine if the dependent variable is significantly affected by the combined independent variables (Table 6).

Table 6. F Test Results

F-statistic	8.799112
Prob(F-statistic)	0.000021

Upon analyzing the F test outcomes mentioned earlier, it is evident that the F-statistic value stands at 8.799112 and the Prob (F-statistic) value is recorded as 0.000021. This implies that the Prob (F-statistic) value is lower than the alpha level of 5%. Consequently, based on these findings, it can be deduced that H1 is accepted while Ho is rejected. Furthermore, this signifies that the variables CAR, FDR, NPF and BOPO collectively exert an influence on the ROA of Islamic banking.

- *Partial Test (t Test)*

The t statistical test is employed to ascertain the impact of each independent variable on the dependent variable, while assuming that the other variables remain constant. To determine whether the hypothesis is accepted or rejected, this is accomplished by comparing the calculated t-value (tcount) with the critical t-value (ttable), and evaluating the significance level ($\alpha = 5\% = 0.05$) against the determined level of significance in this particular research. If tcount exceeds ttable, it implies that the independent variable indeed exerts influence on the dependent variable. Conversely, if tcount is lesser than ttable, it suggests that the independent variable lacks significant influence on the dependent variable.

In this study, we had a total of 33 observations, which we denoted as "n." We also had 5 independent and dependent variables, which we referred to as "k." To calculate the degree of freedom, we subtracted the number of variables from the number of observations: n - k = 33 - 5 = 28. The significance level for our study was $\alpha = 0.05$. To find the ttable value, we used Ms Excel and inserted the function formula accordingly.

ttabel = TINV (probability;deg_freedom)
ttabel = TINV (0,05;28)
ttabel = 1,70113

The results of the t statistical test from the output of the eviews 12 application program are shown in Table 7. As seen in Table 7, it can be concluded as follows:

The CAR is a financial metric that measures the capital strength and stability of a banking institution. It serves as an indicator of the bank's ability to absorb potential losses and withstand adverse economic conditions. The CAR is calculated by dividing the bank's capital (including both Tier 1 and Tier 2 capital) by its risk-weighted assets. A higher CAR signifies a stronger financial position, indicating that the bank has sufficient capital to cover its risks and maintain stability in the face of market fluctuations. Conversely, a lower CAR suggests a higher level of risk exposure for the bank, which may raise concerns about its solvency and ability to meet obligations to depositors and creditors.

Table 7. Partial test results (Uj t)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Dependent Variable: LN_ROA				
Method: Panel Least Squares				
Date: 10/13/23 Time: 22:43				
Sample: 2019 2021				
Periods included: 3				
Cross-sections included: 11				
Total panel (balanced) observations: 33				
C	-5.429480	1.885884	-2.879010	0.01
CAR	0.059771	0.043381	1.377835	0.18
FDR	-0.035037	0.011431	-3.065173	0.00
NPF	0.707412	0.282354	2.505408	0.02
BOPO	0.059316	0.009483	6.254972	0.00

Upon examining Table 7, we observe that the t value associated with the CAR variable is 1.377835, while the t table value is calculated to be 1.70113. Thus, we can deduce that the tcount is smaller than the ttable value ($1.377835 < 1.70113$). By considering the significance value displayed in the test results table, which amounts to 0.1851, we realize that it surpasses the threshold of 0.05 (Sig. $0.1851 > 0.05$). This implies that during partial hypothesis testing, H1 is rejected and Ho is accepted, indicating that CAR does not possess a significant positive impact on profitability in Sharia Commercial Banks.

- *FDR (Financing to Deposit Ratio)*

Based on the data provided in Table 7, it is evident that the t value for the variable FDR is -3.065173, indicating a negative direction. Comparing this to the t table value of 1.70113, we can observe that the t count exceeds the t table ($-3.065173 > 1.70113$). Furthermore, by examining the significance value in the table, which is 0.0067, we can deduce that this value is smaller than 0.05 ($0.0067 < 0.050$). Consequently, we can reach the conclusion that during partial hypothesis testing, H2 is accepted while H0 is rejected. This ultimately signifies that the FDR possesses a significant and detrimental impact on profitability within Sharia Commercial Banks.

NPF, also known as non-performing loans or bad debts, refers to the financial term used to describe loans or financing arrangements that are not generating the expected income or returns. In simpler terms, it signifies those financial obligations that have fallen behind in their scheduled repayments or are unable to meet their contractual obligations. This can be due to a variety of reasons, such as economic downturns, borrower default, or insufficient assets for collateral. NPF is a concern for both lenders and borrowers, as it can have significant implications on the financial health and stability of individuals, businesses, and even the overall economy.

According to the information presented in Table 7, it is evident that the t value for the NPF variable is 2.505408, while the t table value is 1.70113. This suggests that the tcount (2.505408) surpasses the ttable (1.70113). Moreover, by examining the significance value provided in the table, which amounts to 0.0221, it becomes apparent that this value is smaller than 0.05 ($0.0221 < 0.050$). As a result, we can draw the conclusion that during partial hypothesis testing, H3 is deemed acceptable and H0 is rejected. Therefore, it can be inferred that NPF exhibits a substantial positive impact on profitability within Sharia Commercial Banks.

Operating Costs Operating Income refers to the financial measure that encompasses the expenses incurred in the regular operations of a business and the resulting income generated from those operations. It takes into account various expenditures such as salaries, utilities, rent, and

supplies, as well as revenues derived from sales or services provided. This metric allows businesses to evaluate their profitability by comparing the total costs involved in running the business with the revenue generated from its core activities. BOPO provides insights into the efficiency and effectiveness of a company's operations, helping decision-makers assess its financial health and make informed strategic decisions.

According to the data in Table 7, it is evident that the tcount value for the BOPO variable stands at 6.254972, whereas the ttable value is recorded as 1.70113. This signifies that tcount surpasses ttable (6.254972 > 1.70113). Furthermore, by examining the significance value in the table, which is calculated to be 0.0000, we can observe that this value is smaller than the threshold of 0.05 (0.0000 < 0.050). Consequently, it can be deduced that in the process of partial hypothesis testing, H4 is accepted while H0 is rejected. This implies that Operational Costs and Operational Income possess a noteworthy and positive impact on profitability specifically within Sharia Commercial Banks.

4. Discussions

Based on the research's regression model approach and panel data results, it can be explained that the CAR, FDR, NPF, BOPO influence on Sharia Commercial Banks in the 2019-2021 period will be known from the hypothesis testing and Fixed Effect Model.

a. The influence of CAR on ROA in Sharia Commercial Banks

When the CAR variable increases but ROA decreases, this indicates that CAR does not always increase in a negative and insignificant effect on ROA. The bank's profitability does not rely on CAR or overall bank profits, but rather on third party loans as a source of income. Consequently, the lack of influence of CAR on ROA is due to the fact that the bank does not utilize its full capital potential to increase profitability. As a result, any changes in CAR would not affect ROA. In this study, it has been found that Sharia Commercial Banks in Indonesia are required to have a minimum capital ratio of 11.10%. However, the Financial Services Authority Regulation Number 21/POJK.03/2014 states that the minimum capital provision should be at least 8%. This finding contradicts the theoretical expectations, as it suggests that on average, the Sharia Commercial Banks in Indonesia have met the minimum capital requirements set by the OJK. Furthermore, these results align with previous studies conducted by Vita Intan Safitri (2020), Retno Puji Astuti (2022), and Fadrul and Hasbi (2018), all of which concluded that the capital adequacy ratio does not have a significant impact on profitability as measured by ROA.

b. The influence of FDR on ROA in Islamic commercial banks

The findings of the research indicate that the FDR variable has a partial and noteworthy adverse impact on ROA. According to theory, as the FDR increases, so does the distribution of financing in relation to third party funds. This implies that when Islamic banks distribute more funds, they also receive higher profits, thus enhancing profitability as measured by ROA. Consequently, the correlation between FDR and ROA is positive. However, the outcomes of this study contradict this prevailing theory. The findings of the research indicate that FDR, although high, does not guarantee a high income for the bank. This can be attributed to issues with financing and poor management of the provided funds. As a result, there is a substantial amount of outstanding receivables that have not been collected, leading to a decrease in income from disbursed financing. Ideally, this income should have been received upon maturity, but due to the problematic financing, the bank has not yet received it. Consequently, this creates an adverse relationship with ROA (Return on Assets). These research results align with previous studies conducted by Vita Intan Safitri (2020), who also found a significant negative impact of FDR on profitability. On the other

hand, research conducted by Pratama (2022) yielded contrasting results, showing a significant positive effect of FDR on profitability.

c. The influence of NPF on ROA in Islamic commercial banks

Based on the findings of the conducted research, it has been determined that the NPF variable exhibits a partial yet significant positive impact on ROA. In theory, it is posited that an increase in NPF leads to a rise in problematic financing incurred by the bank, consequently diminishing profitability as measured by ROA. Therefore, the expected relationship between NPF and ROA is negative. Astonishingly, the results of this study contradict this theoretical notion. The findings of the research indicate that a significant NPF does not have a negative impact on ROA. This is possible because Sharia Commercial Banks have the ability to address problematic financing by allocating funds to cover any potential losses or allowances for write-offs related to disbursed financing. With every financing transaction, the bank ensures that there is a reserve set aside to account for potential losses associated with productive assets, as there is a risk that the financing may not be repaid. The value of the allowance for losses on productive assets is significant due to the substantial FDR and the generous financing offered by the bank. To safeguard against these potential losses, the bank sets aside a considerable reserve. This ensures that any problematic financing or NPF can be adequately addressed. Consequently, NPF has a positive impact on ROA. By analyzing the available data, we are able to observe the issue of problematic financing in Sharia Commercial Banks. This is evident in the NPF ratio, which has an average of 2.85%. It is worth noting that this falls within the guidelines set by Bank Indonesia Circular, which states that the NPF ratio should be below 5%. These findings align with previous research conducted by Fadrul and Hasbi (2018), who also found a significant impact of the NPF variable on ROA.

d. The effect of BOPO on ROA in Islamic commercial banks

Based on the findings of extensive research, it has been discovered that the BOPO variable has a partial but significant positive impact on ROA. Surprisingly, these results diverge from the established theory which suggests that as the BOPO value increases, the profitability level of Islamic banks decreases. This theory posits that higher BOPO values indicate greater operational costs in relation to operational income. Consequently, it follows that elevated operational costs will inevitably lead to reduced profits for Sharia Commercial Banks. Banks often face the burden of high operational costs, which in turn affect their income and overall profitability. These costs mainly arise from the expenses incurred by banks to maintain reserves for covering potential financial issues and also to finance profit sharing with investment fund owners. If the bank manages to successfully recover disbursed funds, thereby decreasing provision costs, its income will witness an upward trend.

The BOPO variable has a significant effect on ROA, as proven by the research of Vita Intan Safitri (2018) and supported by previous findings. Furthermore, the research conducted by Retno Puji Astuti (2022) and Pratama (2022) showed that BOPO has a significant negative impact on ROA..

5. Conclusions

For the 2019-2021 period in Indonesia, the influence of CAR, FDR, NPF, and BOPO ratios on ROA of Sharia Commercial Banks was analyzed through data processing and analysis. The following conclusions can be drawn.

The Capital Adequacy Ratio does not have a noteworthy and favorable influence on the Return On Assets. This implies that a partial CAR does not bring about a positive impact on the ROA. Consequently, during the period of 2019-2021, the CAR fails to yield any significant and

beneficial outcome on the ROA of Sharia Commercial Banks. The reason behind this lies in the fact that the bank's ample capital does not solely originate from overall bank profits; instead, it stems from third-party loans as a source of income. Furthermore, the bank does not utilize its entire potential capital to enhance its profitability. As a result, any alteration in the CAR, be it an increase or decrease, has no bearing on the ROA.

The FDR has a noteworthy adverse impact on the ROA. Moreover, the FDR also has a partially positive influence on the ROA. Consequently, it can be inferred that FDR significantly hampers the ROA of Sharia Commercial Banks during the period spanning 2019-2021. This contradictory relationship with established theory implies that although FDR is high, it does not guarantee substantial income for banks due to issues with financing and mismanagement of provided funds.

The phenomenon of Non-Performing Financing has a noteworthy and favorable influence on the Return On Assets. This implies that NPF, to a certain extent, exerts a positive effect on ROA. Consequently, during the time frame of 2019-2021, NPF distinctly displays a beneficial impact on the ROA of Sharia Commercial Banks. It is fascinating to note that the outcomes of this investigation defy conventional wisdom. The findings demonstrate a distinct correlation between NPF and ROA in Sharia Commercial Banks that contradicts prevailing theories. Surprisingly, a higher level of NPF does not diminish ROA. This can be attributed to the resourcefulness of Sharia Commercial Banks in handling challenging financing situations. They manage to compensate for these setbacks by factoring in the expenses incurred from losses or allowances for write-offs of productive assets arising from the disbursed financing.

The expenses incurred in the day-to-day operations of a bank have a notable impact on its ROA. This means that the ratio of operational costs to income, known as BOPO, plays a significant role in determining the ROA of Sharia Commercial Banks during the 2019-2021 period. The findings of this study demonstrate that when a bank's BOPO ratio is higher, it leads to a decline in the bank's performance and operations. This is mainly because the expenses outweigh the income, resulting in lower profitability levels for Sharia Commercial Banks.

References

Anggraeni A.F., Winarningsih S., Suprijadi J., (2021), How to improve the quality of accounting information system in digital era (an empirical study of state-owned enterprises in Indonesia), *Economic Annals-XXI*, **194**, 119-127.

Anggraeni A.F., Winarningsih S., (2021), The effects of accounting information system quality on financial performance, *Economic Annals-XXI*, **193**, 128-133.

Bachri S., Hakiki A.R.R., Wibowo N.A., Amini R., Nursaribilah E., (2024), Developing an education support system for disaster management through an ethnoscience-based digital disaster learning module, *International Journal of Disaster Risk Reduction*, **100**, 104214, https://doi.org/10.1016/j.ijdrr.2023.104214

Chakri P., Pratap S., Gouda S.K., (2023), An exploratory data analysis approach for analyzing financial accounting data using machine learning, *Decision Analytics Journal*, **7**, 100212, https://doi.org/10.1016/j.dajour.2023.100212

Desai R., (2022), Determinants of corporate carbon disclosure: A step towards sustainability reporting, *Borsa Istanbul Review*, **22**, 886-896.

Fadrul F., Hasbi A., (2018), *Factors that Influence the Profitability of Sharia Banks in Indonesia 2011-2015*, Jakarta.

Najam H., Abbas J., Alvarez-Otero S., Dogan E., Sial M.S., (2022)., Towards green recovery: Can banks achieve financial sustainability through income diversification in ASEAN countries?, *Economic Analysis and Policy*, **76**, 522-533.

Pratama A., (2022), A*nalysis of Influencing Factors*, Jakarta, http://doi.org/10.13140/RG.2.2.22224.15369.

Vaithilingam S., Ong C.S., Moisescu O.I., Nair M.S., (2024), Robustness checks in PLS-SEM: A review of recent practices and recommendations for future applications in business research, *Journal of Business Research*, **173**, 114465, https://doi.org/10.1016/j.jbusres.2023.114465.

Wang F., Liu Q., Yu L., Wang Y., (2022), Multi-data source-based recycling value estimation of wasted domestic electrical storage water heater in China, *Waste Management*, **140**, 63-73.

Wang Q., Li S., Jiang F., (2021), Uncovering the impact of the COVID-19 pandemic on energy consumption: New insight from difference between pandemic-free scenario and actual electricity consumption in China, *Journal of Cleaner Production*, **313**, 127897, https://doi.org/10.1016/j.jclepro.2021.127897.

Xu G., Dong H., Xu Z., Bhattarai N., (2022), China can reach carbon neutrality before 2050 by improving economic development quality, *Energy*, **24**3, 123087, https://doi.org/10.1016/j.energy.2021.123087.