EFFECT OF CAR, BOPO RATIO, FDR AND NPF RATIO ON PROFITABILITY

(Sharia Commercial Banks in Indonesia for the Period of 2016-2018)

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Abstract - *This study aims to determine and analyze the effect of CAR, BOPO, FDR and NPF ratios on profitability at Islamic Commercial Banks in Indonesia for the period of 2016-2018.*

This study uses a causal research strategy (cause and effect) with a quantitative approach and hypothesis testing using partial and multiple regression with statistical software Eviews 10. In this study the population is the entire Sharia Commercial Bank in the period 2016 to 2018. The sample is determined based on purposive Sampling by researchers obtained as many as 10 Sharia Commercial Banks so that the number of observations in this study were 30 observations and the data used in the form of secondary data is annual financial reports that are published. The data collection uses the documentation method through the official website of each relevant sharia bank, sharia banking statistics, previous journals, and other publications related to the research hypothesis.

Based on the results and discussion partially shows that CAR has no significant effect on profitability, this is evidenced by the prob t is greater than the value a (0.5276> 0.05) means that H1 is rejected, the OEOI ratio has a significant effect on profitability, this is evidenced by the probability t smaller than the value a (0.0000 <0.05) means that H2 is accepted, FDR has no significant effect on profitability, this is evidenced by the probability t is greater than the value a (0.1875> 0.05) means that H3 is rejected and the NPF ratio does not have a significant effect on profitability, this is evidenced by the probability t is greater than the value of a (0.1056> 0.05) means that H4 is rejected. Simultaneously CAR, BOPO ratio, FDR and NPF ratio have a significant effect on profitability at Islamic Commercial Banks in Indonesia for the 2016-2018 period, this is evidenced by the prob F is smaller than the value a (0.000000 <0.05) means that H5 is accepted.

Keywords: *CAR, BOPO ratio, FDR, NPF ratio, profitability.*

I. PRELIMINARY

Banking is one of the financial institutions that has a strategic role in balancing various elements of development in the economic sector of a country. This is due to the function of the bank as an institution that acts as an intermediary (Financial Intermediary) to collect funds from parties who have funds in the form of deposits and channel funds to parties who need funds in the form of providing credit effectively and efficiently. In the banking system, to determine the level of profit generated by a bank, it can be seen from the amount of profitability generated.

Phenomena that occur in Indonesia regarding the profitability of Islamic banking, which reflects the performance of companies, among others. The case of a decrease in PT Bank BRI Syariah's net profit in 2019 by 62.6% yoy to Rp 56.46 billion, this was due to an increase in other operating expenses which reached 15% yoy to Rp 1.7 trillion, based on published reports of increased operating expenses due to impairment losses on financial assets, (Business Finance, 2019). From the cases that occur, the BOPO ratio shows that the level of efficiency of the bank in carrying out its operations has an effect on the income earned by the bank, the higher the OEOI will result in a bad profit and a negative impact on ROA, because the level of efficiency at the bank in operation is not right, so it shows that operating expenses must be low so that the net profit received by banks increases (Rohmiati *et al*., 2019: 43).

Banks must be able to attract trust and increase trust from customers by always maintaining the level of financial health to maintain and develop their business. The profitability ratio is the most appropriate indicator to measure the financial performance of a bank and is used by potential investors as a basis for evaluating the level of management effectiveness of a bank. The higher the level of profitability, the better the financial performance. Bank Indonesia, which holds the banking authority, has determined one of the ratios that can be used to measure the level of profitability of a bank, namely Return On Asset (ROA). ROA is important for banks because ROA is used to measure how effective and efficient bank management is in generating profits from managing assets owned.

The dynamics of the movement of Islamic banking financial ratios from December 2016 to July 2019 are shown in the table as follows:

Table 1 Sharia Banking Financial Ratio Data for the Period of December 2016 - July 2019

Indicator (%)	**2016**	**2017**	**2018**	**2019 July**
ROA	0,63	0,63	1,28	1,62
CAR	16,63	17,91	20,39	19,27
BOPO	96,22	94,91	89,18	85,58
FDR	85,99	79,61	78,53	79,90
NPF	4,42	4,76	3,26	3,36

Source : Statistik Perbankan Syariah

Table 1 above explains empirically that it appears that financial ratios from year to year have changed. In addition there are deviations from the theory which states the relationship of several indicators to ROA. FDR in 2017 and 2018 decreased by 6.38% and 1.08%, respectively, however the ROA ratio in 2017 was stagnant with the same percentage as the previous year and in 2018 it increased by 0.65%. So that FDR has a negative impression and has no effect on ROA. Meanwhile, in theory, it is said that FDR has a positive effect on ROA. Based on the table above, in 2017, ROA was relatively stagnant with the same figure. This contrasts with the theory which states that CAR, OEOI, FDR and NPF affect the profitability (ROA) of Islamic banking.

In a partial study conducted by Mahampang and Harjanti (2016: 139), it is suggested that the Capital Adequacy Ratio (CAR) which presents capital adequacy can have a positive effect on ROA in line with the research results of Yusuf (2017: 148) Research according to Munir (2018: 95) shows

that CAR has no effect on ROA. Meanwhile, Indyarwati and Handayani (2017: 12) stated that CAR has a negative effect on ROA.

Operational Cost to Operating Income (BOPO) the second variable that presents operational efficiency. According to Yusuf (2017: 148), in the results of his research, the BOPO variable has a positive effect on ROA. Whereas in the research of Syakhrun *et al.,* (2019: 8) it shows that OEOI has a negative effect on ROA, this is in line with the results of research by Rohmiati *et al.,* (2019: 43). Financing to Deposit Ratio (FDR) is the third variable that represents the intermediation function or liquidity of a bank. In the research of Indyarwati and Handayani (2017: 14), partially the results show that FDR has a negative effect on ROA, which is not in line with the research results of Syakhrun *et al.,* (2019: 9) which suggest that FDR has a positive effect on ROA. Meanwhile, research conducted by Munir (2018: 95) shows that ROA is not influenced by the FDR variable.

Rofiqo and Afrianti (2019: 547) in their research suggest that partially NPF which presents NPF has a negative effect on profitability in line with the research of Indyarwati and Handayani (2017: 13) and Afrizal (2017: 207) suggesting that NPF has a negative effect on ROA. In contrast to the results of research conducted by Munir (2018: 95) which shows that NPF has a positive effect on ROA. However, in the research of Syakhrun *et al.,* (2019: 8), it is stated that NPF does not have a significant effect on ROA. With the inconsistency of research results and phenomena that occur in Islamic banks, it is necessary to investigate further how the bank characteristics influence the profitability of Islamic banking, which is proxied by CAR, OEOI, FDR and NPF on ROA because they are considered to be still consistent. From the results of the above explanation, the author wishes to develop previous research conducted by Syakhrun *et al.,* (2019: 1) entitled The Effect of CAR, BOPO, NPF and FDR on profitability in Islamic Commercial Banks in Indonesia. The difference with this research is that with different years which are more recent and managing data with different software, because it is necessary to analyze annually the profitability of Islamic banking for future performance evaluations in order to remain competitive with conventional banks and increase public interest in Islamic banking. This study aims to further determine the effect of the CAR, BOPO, FDR and NPF variables on ROA in order to obtain certainty because each study has different results.

II. LITERATURE REVIEW

2.1. Theoritical Basis

2.1.1. Bank Health

Based on the assessment system for the soundness level of commercial banks based on sharia principles, the issuance of Bank Indonesia Health Regulation Number 9 / PBI / 2007 dated January 24, 2007 concerning the assessment system for the soundness level of commercial banks based on sharia principles. This arrangement is necessary considering that Islamic banking service products are increasingly complex with direct superior product innovation. The consequence of the increasing increase in Islamic banking services is the increased risk exposure faced by Islamic banks. Yusmad (2018: 216).

2.1.2. *Capital Adequacy Ratio* (CAR)

Capital Adequacy Ratio (CAR) is the ratio of bank performance to measure the adequacy of the bank's capital to support assets that contain or generate risk, for example, loans. According to Kasmir (2014: 46) CAR is the ratio between the ratio of capital to risk-weighted assets (RWA) and according to government regulations. According to Sudirman (2013: 112) RWA is the amount of risk scales for balance sheet assets and bank administrative accounts. CAR in this case is an assessment of the capital in a bank, so that the capital adequacy ratio can be used as a tool for making investment decisions for banks circulating shares through the financial health of the bank which is reflected in their financial statements. According to Muhamad (2015: 140) capital adequacy is an

important thing in the banking business, a bank that has a good level of capital adequacy shows an indicator of being a healthy bank. According to Hasibuan (2015: 60) the amount of CAR value of a bank can be calculated using the formula:

$$\text{CAR} = \frac{\text{OWNER'S EQUITY}}{\text{ATMR}} \times 100\% \quad (1)$$

2.1.3. Operating Costs against Operating Income Operasional (BOPO)

According to the Indonesian Bankers Association (2016: 287), BOPO is the ratio between total operating expenses and operating income. Costs are expenses incurred by a company in order to create or earn income. The purpose of the cost here is a cost that is directly or indirectly used to create income in a certain period. BOPO can be formulated based on the provisions of the Indonesian Bankers Association (2016: 287) as follows:

$$\text{BOPO} = \frac{\text{OPERATING COSTS}}{\text{OPERATIONAL INCOME}} \times 100\ \% \quad (2)$$

2.1.4. *Financing to Deposit Ratio* (FDR)

Financing to Deposit Ratio (FDR) is a ratio to measure the composition of the amount of financing provided compared to the amount of public funds and own capital used by Cashmere (2012: 319). According to the Indonesian Bankers Association (2016: 287) FDR is a comparison between the amount of financing provided and sources of funds originating from public funds (current accounts, savings and time deposits). This ratio represents financing to other banks against third party funds. The formula for determining FDR according to the Indonesian Bankers Association (2016: 287) is:

$$\text{FDR} = \frac{\text{PAYMENT GIVEN}}{\text{THIRD} - \text{PARTY FUNDS}} \times 100\ \% \quad (3)$$

2.1.5. *Non Performing Financing* (NPF)

Non Performing Financing or financing problems is a key indicator for assessing the performance of bank functions. One of the functions of a bank is as an intermeditary institution or a liaison between parties who have excess funds and those who need funds. Non-performing financing is a risk faced by banks because they channel their funds in the form of financing to the public. Due to various reasons, the debtor may not be able to fulfill his obligations to the bank in returning the financing provided by the bank. With this problem, of course the bank suffers a loss due to the large amount of receivables in the community. The formula for determining the NPF according to the Indonesian Bankers Association (2016: 84) is:

$$\text{NPF} = \frac{\text{PROBLEM FINANCING}}{\text{TOTAL FINANCING}} \times 100\ \% \quad (4)$$

2.1.6. Profitability

According to Hery (2016: 192) profitability is a ratio used to measure a company's ability to generate profits from its normal business activities. The level of profitability of Islamic banks in Indonesia is best measured by the ratio of profit to assets (ROA), both for the full fledge bank category and for the category of sharia business units. According to Kasmir (2015: 156) to measure the level of profit of a bank, the profitability ratio is used.

2.1.6.1. Return On Assets (ROA)

According to Sujarweni (2017: 56) ROA is a ratio used to measure the ability of capital invested in all assets to generate net profits. ROA is the company's profit ratio related to earnings or profitability aspects. ROA functions to measure the effectiveness of a company in generating profits by utilizing its assets. ROA was chosen as an indicator to measure the financial performance of banks. The greater the ROA, the greater the profits achieved by the bank. According to the Indonesian Bankers Association (2016: 286), mathematically, ROA is formulated as follows:

$$ROA = \frac{EARNING\ BEFORE\ TAX}{TOTAL\ ASSETS} \times 100\ \% \qquad (5)$$

2.2. Relationship Between Research Variables

2.2.1. Effect of CAR on profitability (ROA)

Capital Adequacy Ratio (CAR) or capital adequacy is an important factor in developing a business and accommodating the risk of loss. The higher the CAR, the stronger the bank's ability to bear the risk of each risky credit / earning asset. If the CAR value is high (according to BI provisions at 8%) then the bank is able to finance bank operations, this favorable situation will make a huge contribution to profitability (Yusuf, 2017: 144). This is in line with research by Mahampang and Harjanti (2016: 139) and Yusuf (2017: 149) which states that CAR has a significant positive effect on profitability (ROA). Meanwhile, research conducted by Indyarwati and Handayani (2017: 12) and Syakhrun *et al.*, (2019: 9) states that CAR has a negative effect on profitability (ROA) and research conducted by Afrizal (2017: 201), Munir (2018) : 95) and Rofiqo and Afrianti (2019: 546) who argue that CAR does not have a significant effect on profitability (ROA).

2.2.2. Effect of BOPO ratio on profitability (ROA)

BOPO is the ratio between operating costs and operating income, the lower the BOPO ratio, the better the bank's management performance, because it is more efficient in using existing resources in the company. The BOPO ratio that banks in Indonesia can tolerate is 93.52%, this is in line with the provisions issued by Bank Indonesia (Syakhrun *et al.*, 2019: 5). According to research by Syakhrun *et al.*, (2019: 9) which states that OEOI has a significant negative effect on profitability (ROA) in line with research conducted by Indyarwati and Handayani (2017: 12).

2.2.3. Effect of FDR on profitability (ROA)

According to Indyarwati and Handayani (2017: 6), in Islamic banking used in measuring liquidity using the Financing to Deposit Ratio (FDR). The FDR states how far the bank's ability to repay depositors' withdrawals by relying on credit provided as a source of liquidity. FDR is actually the same as LDR in conventional banks, this difference in designation is because in sharia-based banks there is no loan or loan but financing. The higher the FDR ratio level, the disbursed financing will increase and vice versa, the lower the FDR number, the lower the financing channeled by the bank. According to Bank Indonesia Circular No.3 / 30 / DPNP, the amount of FDR follows developments in Indonesia's economic conditions, and since the end of 2001 a bank is considered healthy if the FDR is between 80% and 110%. According to research by Abdillah *et al.*, (2016: 147), Indyarwati and Handayani (2017: 6), Yusuf (2017: 149) and Risalah *et al.*, (2018: 243) suggest that FDR has a significant positive effect on profitability (ROA)).

2.2.4. Effect of NPF ratio on profitability (ROA)

According to the Indonesian Bankers Association (2016: 84) NPF is a comparison between non-performing financing and total financing. Financing is financing as stipulated in the Bank Indonesia provisions concerning asset quality. Non-performing financing is financing with less current, doubtful and bad quality and is calculated based on the carrying value in the balance sheet.

Total financing is calculated based on the recorded value in the balance sheet. Through Bank Indonesia regulations stipulate that the NPF ratio is 5%. The higher the NPF ratio, the worse the bank credit quality is because the number of non-performing loans is getting bigger. If the number of non-performing loans is greater, it will affect the decline in income due to an increase in the cost of earning assets reserves, thus it is concluded that NPF has a negative effect on ROA (Syakhrun *et al.,* 2019: 9). In accordance with the research of Indyarwati and Handayani (2017: 6), Afrizal (2017: 201) and Rofiqo and Afrianti (2019: 546).

2.3. Hypothesis Development

The hypothesis is a temporary answer to the problem and sub-problem posed by the researcher, described from a literature review and is still being tested. Through this scientific research, the hypothesis will be declared accepted or rejected. Based on the influence between variables previously described, the hypotheses in this study are as follows:

H1: CAR affects profitability (ROA).
H2: BOPO ratio affects profitability (ROA).
H3: FDR affects profitability (ROA).
H4: NPF ratio affects profitability (ROA).
H5: CAR, BOPO, FDR and NPF have a simultaneous effect on profitability (ROA).

2.4. Conceptual Framework

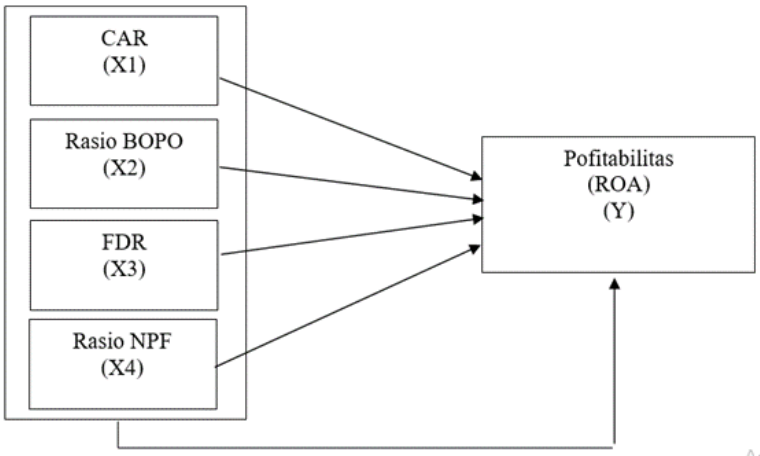


Figure 1 Research Conceptual Framework

Based on Figure 1, it can be seen that the influence of the four independent variables consisting of CAR (X1), BOPO Ratio (X2), FDR (X3) and NPF Ratio (X4) on the dependent variable, namely profitability / ROA (Y). As stated by one of the previous researchers,Syakhrun *et al.,* (2019: 9)revealed that the research simultaneously variables CAR, BOPO, NPF and FDR have an effect on profitability and partially BOPO has a significant negative effect on ROA, FDR has a significant positive effect on ROA. Meanwhile, CAR and NPF have no significant effect on ROA. The conceptual framework is based on literature review and several phenomena studied and made to make it easier to understand the relationship between independent variables and the dependent variable.

III. RESEARCH METHOD

The research strategy used by the author is causality research with the aim of explaining how much influence the relationship between CAR, BOPO ratio, FDR and NPF ratio on profitability with

a quantitative approach and data obtained from secondary data, the data analysis technique used by researchers for hypothesis testing is using partial and multiple regression techniques with statistical software Eviews 10. The population used in this study were 14 Islamic Commercial Banks (BUS) registered with the Financial Services Authority in the 2016-2018 period. Determination of the sample using purposive sampling method, the Sharia Commercial Bank as a sample is 10 BUS so that there are 30 total observations (10 BUS x 3 years). In this study, secondary data sources were obtained from the annual report website of each Islamic Commercial Bank concerned and the Financial Services Authority (OJK) website in which there are Islamic Banking Statistics in the form of independent variable data, namely Capital Adequacy Ratio / CAR (X1), Operational Costs. Operating Income / BOPO (X2), Financing to Deposit Ratio / FDR (X3), Non Performing Financing / NPF (X4) and the dependent variable, namely Return On Asset / ROA (Y) in the 2016-2018 period which can be accessed via the www site .ojk.go.id and their respective banks. The method of collecting data is the documentation method. This data is used to obtain empirical evidence in analyzing the specified hypothesis. The following is the general form of the regression equation model used in this study:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + € \quad (6)$$

Information:

Y : Profitability (ROA)
α : Constant Coefficient
β1 : Capital Adequacy Ratio (CAR) Regression Coefficient
X1 : *Capital Adequacy Ratio* (CAR)
β2 : Operational Revenue Cost Regression Coefficient (BOPO)
X2 : Operating Expenses Operating Income (BOPO)
β3 : *Financing to Deposit Ratio* (FDR) Regression Coefficient
X3 : *Financing to Deposit Ratio* (FDR)
β4 : *Non Performing Financing* (NPF) Regression Coefficient
X4 : *Non Performing Financing* (NPF)
€ : Error rate

IV. RESEARCH RESULT

4.1. Description of Research Object

The sample in this study were 10 Islamic Commercial Banks in Indonesia for the period 2016-2018. The focus of this research is to analyze the effect of CAR, BOPO ratio, FDR, and NPF ratio on profitability. In this study is information about the company's financial statements. Samples were taken based on their completeness and compliance with the criteria set in this study. The companies sampled are:

Table 2 Sample of Islamic Commercial Banks Research Period 2016-2018

No	Code	Name of Sharia Commercial Bank (BUS)
1	BNTBS	PT. BPD Nusa Tenggara Barat Syariah
2	BMI	PT. Bank Muamalat Indonesia
3	BVS	PT. Bank Victoria Syariah
4	BRIS	PT. Bank BRI Syariah
5	BNIS	PT. Bank BNI Syariah

6	BSM	PT. Bank Syariah Mandiri
7	BMSI	PT. Bank Mega Syariah
8	PBS	PT. Bank Panin Dubai Syariah
9	BSB	PT. Bank Syariah Bukopin
10	BCAS	PT. BCA Syariah

4.2. Data Description

Descriptive statistics of each of the variables studied are as follows:

Table 3 Descriptive Analysis of the Variable Statistics Under Study

	ROA	CAR	BOPO	FDR	NPF
Mean	0.504333	21.15433	94.02533	85.90500	2.678667
Median	0.655000	19.72500	91.20500	85.87500	2.780000
Maximum	3.850000	36.78000	258.2500	100.6600	7.220000
Minimum	-11.30000	11.51000	66.72000	72.25000	0.040000
Std. Dev.	2.421035	6.586307	33.44074	7.746048	1.635272
Observations	30	30	30	30	30

Source: www.idx.co.id (Data processed with E views 10)

This analysis is used to provide an overview or description of data, where the data obtained comes from the results of descriptive analysis, which shows the average (mean), highest (maximum) value, lowest (minimum) value and standard deviation of each variable under study. both the independent variable and the dependent variable, namely: CAR is the first variable (X1), the OEOI ratio is the second variable (X2), FDR is the third variable (X3), the NPF ratio is the fourth variable (X4), and Profitability is the fifth variable (Y).

Based on the calculation results, it can be seen that the dependent variable profitability using ROA has a minimum value of -11.3 obtained from PT. Panin Dubai Syariah Bank in 2017, this means that the bank has not been maximally generating profits so it experiences losses due to the negative ROA value. Meanwhile, the maximum value is 3.85 obtained from PT. BPD Nusa Tenggara Barat Syariah in 2016, this means that the bank is very maximal in generating profits so that it can make a profit. The average value of ROA is 0.504333. This shows that the ROA ratio is not in accordance with OJK regulations, namely 0.5% to 1.25 with the criteria of "fairly healthy". With an average value of 0.570667, with the provisions of the OJK, the criteria are "unhealthy" in the 2016-2018 period with a sample of 10 Islamic Commercial Banks in Indonesia.

The independent variable CAR has a minimum value of 11.51 obtained from PT. Panin Dubai Syariah Bank in 2017, this means that the bank's capital is good to support assets that contain or generate risk. Meanwhile, the maximum value is 36.78 obtained from PT. BCA Syariah in 2016, this means that the bank's capital is optimal in supporting assets that contain or generate risk. The average CAR is 21,15433. This shows that the CAR ratio is in accordance with OJK regulations, which is above 8% even above the “very healthy” criteria of 12%.

The independent variable BOPO has a minimum value of 66.72 obtained from PT. BPD Nusa Tenggara Barat Syariah in 2016, this means that the bank has been efficient in reducing operating expenses and increasing its operating income. Meanwhile, the maximum value is 258.25 obtained from PT. Panin Dubai Syariah Bank in 2017, this means the bank has not been efficient in reducing operating expenses and increasing operating income. The average value of BOPO is 94.02533. This indicates that the BOPO ratio does not comply with OJK regulations because it is above 89% with the criteria of "unhealthy".

The independent variable FDR has a minimum value of 72.25 obtained from PT. Bank BRI Syariah in 2017, this shows a good level of bank liquidity because the bank will be able to fulfill its obligations to third party funds. Meanwhile, the maximum value of 100.66 was obtained from Bank PT. Bank Victoria Syariah in 2016, this shows the level of bank liquidity that is not healthy. The average FDR value is 85.90500. This shows that the FDR ratio is categorized as "unhealthy" with OJK provisions, namely 100% to 120%, far above OJK provisions of 75% to 85% with the criteria of "healthy".

The independent variable NPF has a minimum value of 0.04 obtained from PT. BCA Syariah in 2017, this means that banks can minimize problematic financing. Meanwhile, the maximum value is 7.22 obtained from PT. Bank BRI Syariah in 2018, this means that problematic financing is very high. The average value of the NPF is 2.678667. This shows that the NPF ratio is in accordance with OJK regulations, namely 2% to 5% with the criteria of "healthy".

4.3. Statistic analysis

4.3.1. Analysis of the panel data model estimation method test

Analysis with panel data is used to calculate how much influence the CAR, BOPO ratio, FDR, and NPF ratio on the profitability of the calculation or analysis of panel data using Eviews 10. Find out the most efficient method of the three equation models, namely the Least Square Panel or Common Effect Model (CEM), Fixed effect Model (FEM) and Random effect Model (REM) each need to be tested using the panel data model test method, with the following results:

Testing the estimated regression equation, the following tests can be used:

1) *Chow Test*

Chow test namely testing to determine the most appropriate Fixed effect or Common effect model to use in estimating panel data. The hypothesis in the Chow Test is:

H_0 : *Common effect Model*
H_1 : *Fixed effect Model*

Table 4 *Chow Test*

Redundant Fixed Effects Tests
Pool: POOL01
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.008111	(9,16)	0.4725
Cross-section Chi-square	13.476088	9	0.1422

Source : Data processed with E views 10.

The results of the Chow Test in the table above can be concluded that H0 is accepted as H1 is rejected because the results of the Prob Cross-section F are greater than alpha (0.4725> 0.05), so the model used in this study is the **Common Effect Model**.

2) *Hausman Test*

After doing the Chow Test and finding the correct model is the Common effect, then we will then test which model the Fixed effect or Random effect is the most appropriate, this test is called the Hausman Test. Hypothesis in the Hausman Test:

H_0 : *Random effect Model*
H_1 : *Fixed effect Model*

Table 5 *Hausman Test*

Correlated Random Effects - Hausman Test
Pool: POOL01
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.230499	4	0.3757

Source : Data processed with E views 10.

Based on the Hausman test, it can be concluded that H0 is accepted, H1 is rejected because the result of the Prob Cross-section Random is greater than alpha (0.3757> 0.05), so the model used in this study is the **Random Effect Model**.

3) Lagrange Multiplier Test

Lagrange Multiplier (LM) is a test to determine whether the Random Effect model or the Common Effect model is most appropriate to use. The LM significance test was developed by Breusch Pagan. The Breusch Pagan method for the Random Effect significance test is based on the residual value of the CEM method. The hypothesis used is:

H_0 : *Common Effect Model*
H_1 : *Random Effect Model*

Table 6 *Lagrange Multiplier Test*

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis Cross-section	Time	Both
Breusch-Pagan	7.595593 (0.1076)	2.642490 (0.1040)	76.83360 (0.0000)

Source : Data processed with E views 10.

Based on table 6 the value of Prob. Breusch-Pagan (BP) of 0.1076 indicates that H0 is accepted, H1 is rejected, so the model used in this study is the **Common Effect Model.**

4) Summary of Panel Data Regression Model Testing

Table 7 Summary of Panel Data Regression Model Testing

No	Method	Testing	Result
1	*Chow-Test*	*Common Effect* vs *Fixed Effect*	*Common Effect*

2	*Hausman Test*	*Random Effect vs Fixed Effect*	*Random Effect*
3	*Lagrange Multiplier Test*	*Common Effect vs Random Effect*	*Common Effect*

Source: The results of data processing with Eviews version 10.0, (2020).

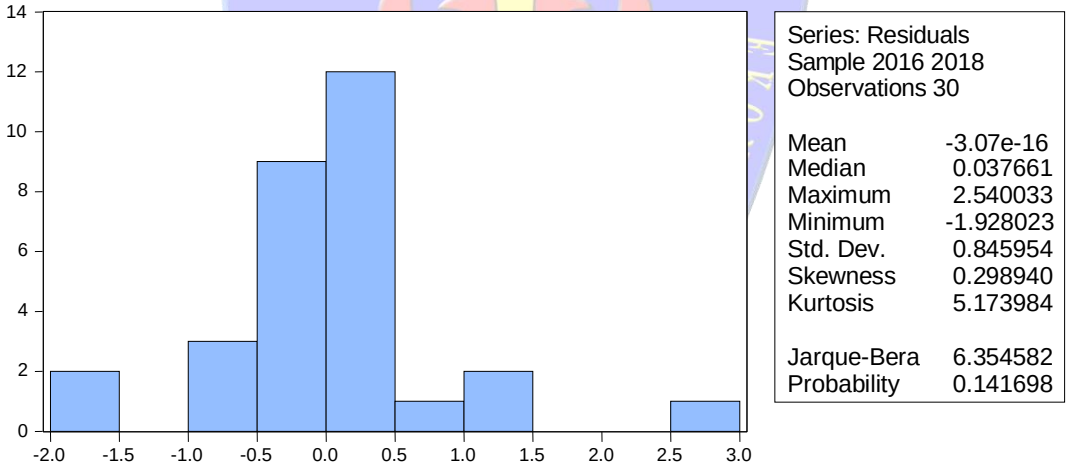
It means that the Common effect model is selected in the Lagrange Multiplier test. Based on the Chow-test model test, it shows that the Polled / Common Model is selected. On the other hand, the results of the Hausman model test show that the Random Effect Model is selected and the results from the Lagrange Multiplier model test indicate that the Common Effect is selected. From these results, it is evident that the panel model chosen is the **Common Effect Model**.

4.3.2. Classic assumption test

The classical assumption test is a prerequisite test if you use linear regression analysis. These tests include the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. If these assumptions are violated, for example the regression model is not normal, multicollinearity occurs, heteroscedasticity occurs or autocorrelation occurs. The following will discuss each classical regression assumption test as follows:

1) Normality Test

This test is done to find out whether the data used is present or has a normal distribution or in other words it can represent a normal distribution population. This test uses the histogram graph method and the Jarque-Bera statistical test (JB test) as follows:



Source: Data processed with E views 10.

Figure 2 Data Normality Test

The histogram above the probability value is 0.141698 looking at the number of independent variables that we use, in this case 4 independent variables and the significant value we use in this case is 0.05 or 5%.

- If p-value < α, then H_0 rejected
- If p-value > α, then H_0 is accepted

The conclusion is that with a confidence level of 95%, it can be said that the error terms are normally distributed.

The results of the normality test above show that the data is normally distributed because the probability value is 0.141698> 0.05 so there is no need for transformation so that the data is normally.

2) ***Multicollinearity Test***

This multicollinearity test aims to test and find out whether the regression model that was processed found a correlation or relationship between independent variables. Testing multicollinearity problems can be seen from the correlation matrix values and can be seen in the table below:

Table 8 Multicollinearity Test

	ROA	CAR	BOPO	FDR	NPF
ROA	1	0.4662923372316437	-0.9221651459800386	0.07982630567547181	-0.3252993015593653
CAR	0.4662923372316437	1	-0.4655869925727488	0.2120909762171933	-0.4227987990251052
BOPO	-0.9221651459800386	-0.4655869925727488	1	0.03984679960787473	0.4623623882392919
FDR	0.07982630567547181	0.2120909762171933	0.03984679960787473	1	0.0562960731216037
NPF	-0.3252993015593653	-0.4227987990251052	0.4623623882392919	0.0562960731216037	1

Source: Data processed with E views 10.

The table above can be seen that the value of the correlation coefficient between the independent variables is less than 0.80, thus the data in this study can be identified that there is no multicollinearity problem between the independent variables and it can be said that this model can be used to estimate the effect of CAR, BOPO ratio, FDR, and NPF ratio to profitability in Islamic Commercial Banks in Indonesia for the period 2016-2018

Variance Inflation Factors
Date: 05/17/20 Time: 05:44
Sample: 2016 2045
Included observations: 30

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
CAR	0.000984	17.41166	1.491771
BOPO	3.72E-05	13.33285	1.452655
FDR	0.000520	139.8254	1.090401
NPF	0.014853	5.238983	1.387534
C	3.874218	140.0083	NA

Source: Data processed with E views 10.

Based on the results of the multicollinearity test output shown in the table above, it can be seen in the Coefficients table (Tolerance and VIF values) that of the four independent variables it can be seen that the VIF value is less than 10 and the Tolerance value is greater than 0.1, it can be concluded that the model regression does not occur multicollinearity problems.

3) Heteroscedasticity Test

Heteroscedasticity test aims to test whether in the regression model that is formed there is an inequality of variants of the regression model residuals. Good data is homoscedasticity data. The Glesjer test can identify heteroscedasticity problems from the calculation results that identify no heteroscedasticity because the regression coefficient value of the independent variable is not significant to the dependent variable RESABS. The hypothesis used is:

H_0 : There is no heteroscedasticity problem

H_1 : There is a heteroscedasticity problem

Table 9 Heteroscedasticity Test

Heteroskedasticity Test: Glejser

F-statistic	4.725685	Prob. F(4,25)	0.0056
Obs*R-squared	12.91678	Prob. Chi-Square(4)	0.1117
Scaled explained SS	16.04681	Prob. Chi-Square(4)	0.0030

Source: Data processed with E views 10.

The results of the heteroscedasticity test can be concluded that H0 is accepted because the probability result of each independent variable is 0.1117 is greater than alpha (0.05), or in other words, the regression coefficient value of the independent variables, so that the data in this regression model can be said that there is no heteroscedasticity problem.

4) Autocorrelation Test

The autocorrelation test in this study was carried out using the Durbin-Watson (DW) method. The best model in the regression formed is the **Common Effect Model**, it can be seen that the DW value of the regression equation formed is 1.737567 so it can be concluded that the DW value of the regression model formed in this study has no autocorrelation.

4.3.3. Multiple linear regression equation test

Multiple linear regression analysis is intended to test the extent and direction of the influence of the independent variables on the dependent variable. The independent variable in this study is CAR, BOPO ratio, FDR, and NPF ratio, while the dependent variable is profitability using the **Common Effect Model**.

Table 10 Multiple Linear Regression Equation

Dependent Variable: ROA
Method: Pooled Least Squares
Date: 05/17/20 Time: 05:38
Sample: 2016 2018
Included observations: 3
Cross-sections included: 10
Total pool (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.441990	1.968303	1.748709	0.0926
CAR	0.020098	0.031375	0.640573	0.5276
BOPO	-0.069832	0.006098	-11.45176	0.0000
FDR	0.030906	0.022808	1.355043	0.1875
NPF	0.204646	0.121873	1.679174	0.1056

Source: Data processed with E views 10.

Based on the results above, the multiple linear regression equation can be as follows:

ROA = 3.441990 + 0.020098CAR - 0.069832BOPO + 0.030906FDR + 0.204646NPF + e

Information :

Y = Profitability (ROA)
X_1 = CAR
X_2 = BOPO Ratio
X_3 = FDR
X_4 = NPF Ratio
α = Constant
e = Error rate

Based on the multiple linear regression equation, it can be analyzed the effect of each independent variable on the dependent variable, namely:

1. Constant value α of 3.441990 states that if the value of CAR (X1), OEOI Ratio (X2), FDR (X3) and NPF ratio (X4) are kostan (0) then the amount of profitability is 3.441990
2. The regression coefficient X1 has a positive effect of 0.020098 for CAR, meaning that every 1 change in the CAR value, the profitability will increase by 0.020098
3. The regression coefficient X2 has a negative effect of 0.069832 for the OEOI Ratio, meaning that every 1 change in the value of the OEOI Ratio, the profitability will decrease by 0.069832
4. The regression coefficient value X3 has a positive effect of 0.030906 for FDR, meaning that every change of 1 in the FDR value, the profitability will increase by 0.030906
5. The regression coefficient X4 has a positive effect of 0.204646 for the NPF ratio, meaning that every 1 change in the value of the NPF ratio, the profitability will increase by 0.204646

4.3.4. Hypothesis testing

Hypothesis testing, the researcher will present table 11 of the results of the regression analysis of the **Common effect model** which has stated that the model is more appropriate for this study.

Table 11 Hypothesis testing

Dependent Variable: ROA
Method: Pooled Least Squares
Date: 05/17/20 Time: 05:38
Sample: 2016 2018
Included observations: 3
Cross-sections included: 10
Total pool (balanced) observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.441990	1.968303	1.748709	0.0926
CAR	0.020098	0.031375	0.640573	0.5276
BOPO	-0.069832	0.006098	-11.45176	0.0000
FDR	0.030906	0.022808	1.355043	0.1875
NPF	0.204646	0.121873	1.679174	0.1056

R-squared	0.877907	Mean dependent var	0.504333
Adjusted R-squared	0.858372	S.D. dependent var	2.421035
S.E. of regression	0.911121	Akaike info criterion	2.802729
Sum squared resid	20.75352	Schwarz criterion	3.036262
Log likelihood	-37.04093	Hannan-Quinn criter.	2.877438

F-statistic	44.94040	Durbin-Watson stat	1.737567
Prob(F-statistic)	0.000000		

Source: Data processed with E views 10.

These results prove that the panel model chosen is the **Common Effect Model**.

1) Partial Testing (t-test)

a. First Hypothesis (H_1)
The t test can be seen from the results of the partial regression significance test. The results can be seen from table 11 that the probability significance value is 0.5276> 0.05. Then these results indicate that H1 is rejected, meaning that partially CAR (X1) has no effect on profitability (Y). So the hypothesis H1 is not proven.

b. Second hypothesis (H_2)
The t test can be seen from the results of the partial regression significance test. The results can be seen from table 11 that the probability significance value is 0.0000 <0.05. Then these results indicate that H2 is accepted, meaning that the OEOI ratio (X2) partially affects profitability (Y). The effect that occurs is a negative influence. Then the H2 hypothesis is proven.

c. Third hypothesis (H_3)
The t test can be seen from the results of the partial regression significance test. The results can be seen from table 11 that the probability significance value is 0.1875> 0.05. Then these results state that H3 is rejected, meaning that FDR (X3) partially has no effect on profitability (Y). So the hypothesis H3 is not proven.

d. Fourth Hypothesis (H_4)
The t test can be seen from the results of the partial regression significance test. The results can be seen from table 11 that the probability significance value is 0.1056> 0.05. Then these results indicate that H4 is rejected, meaning that the NPF ratio (X4) partially has no effect on profitability (Y). So the hypothesis H4 is not proven.

2) Simultaneous Testing (F-test)

The F test can be seen from the results of simultaneous regression significance testing. The results can be seen in table 4.10 that the F-statistic value is 44.94040 with a significance value of 0.000000 <0.05. Based on these results, the hypothesis which states that CAR, the ratio of OEOI, FDR, and NPF ratio simultaneously affect profitability is accepted. Then the hypothesis is proven influential.

3) Analysis of the coefficient of determination (*Adjusted* R^2)

Based on table 11, it states that the Adjusted R-square value is 0.858372, meaning that the coefficient of determination in this study is 0.858372, this means that the independent variable is able to explain the dependent variable only at 85.84%. The remaining 14.16% is influenced by other independent variables which were not examined in this study.

4.4. Research Findings

Based on the above research, the writer can interpret the independent variables on the dependent variable, especially those that have a significant effect on the dependent variable.

4.4.1. The effect of CAR on profitability

The first hypothesis (H1) which states that CAR has an effect on profitability, is **rejected**. This shows that CAR has no effect on profitability. Based on the test results in this study, CAR has

a t-count value of 0.640573. While the probability value is greater than the significance level (0.5276> 0.05) which indicates that **CAR has no effect on profitability**.

The results of this study support the results of research conducted by Afrizal (2017: 201), Munir (2018: 95) and Rofiqo and Afrianti (2019: 546) which suggest that CAR does not have a significant effect on profitability (ROA). CAR has no effect on profitability due to the attitude of banking management which maintains that the level of CAR in Islamic banking remains in accordance with the compliance determined by the central bank (BI). This causes Islamic banking to not optimally utilize the capital it owns (Munir, 2018: 95).

High CAR in Islamic banks in Indonesia in the 2016-2018 period did not increase profitability. When viewed from the empirical conditions of the research object, it can be seen that most of the Islamic banks have CARs above 8% and have an average CAR of 21.15%. This can be due to the attitude of the management of Islamic banks operating in the 2016-2018 period not optimizing the available funds. This can occur because of the central bank (BI) regulation which requires a Sharia bank CAR of at least 8%, resulting in Sharia banks trying to always keep their CAR in accordance with applicable regulations.

In the theory that discusses the relationship between CAR and profitability, CAR or a ratio that proxies capital adequacy is the most important thing in the banking business, a bank that has a good level of adequacy shows an indicator of being a healthy bank. The purpose of calculating this CAR is to find out how far the bank's ability to cover or bear losses if the bank experiences a loss with the capital it owns must comply with the minimum standard, namely the capital obligation of 8% (Muhamad, 2015: 140). It can be said that this research is not in accordance with the existing theory because the company may only use a large part of its capital to cover operational losses such as other non-performing coaching, the research shows the results that CAR has no effect on profitability,

The results of this study are also not in line with the results of research by Mahampang and Harjanti (2016: 139) and Yusuf (2017: 149) which state that CAR has a significant positive effect on profitability (ROA) in accordance with existing theories. Meanwhile, research conducted by Indyarwati and Handayani (2017: 12) states that CAR has a negative effect on profitability (ROA). The higher the CAR, the stronger the bank's ability to bear the risk of any risky credit or earning assets, if the CAR value is high (in accordance with BI regulations 8%) then the bank is able to finance bank operations, this will make a very large contribution to profitability (Yusuf, 2017: 149).

4.4.2. The effect of the BOPO ratio on profitability

The second hypothesis (H2) which states that the OEOI ratio has an effect on profitability, **received**. This shows that the BOPO ratio has an effect on profitability. Based on the test results in this study, the BOPO ratio has a t-count of -11.45176. While the probability value is smaller than the significance level (0.0000 <0.05) which indicates that the **BOPO ratio take effect on profitability**.

The results of this study support the results of research conducted by Syakhrun *et al.*,(2019: 9) which states that BOPO has a significant negative effect on profitability (ROA). This research is in line with research conducted by Indyarwati and Handayani (2017: 12), Risalah *et al.*, (2018: 243) and Sitompul and Nasution (2019: 237). The higher the BOPO ratio, the bank is declared less efficient in controlling its operational costs so that it affects the decline in profits received by Islamic commercial banks (Syakhrun *et al.*, 2019: 9).

This indicates that the level of efficiency of a bank in carrying out its operations affects the income earned by the bank. The higher the BOPO will result in bad profits and a negative impact on ROA because the level of efficiency at the bank in operations is not right. Conversely, if the BOPO is getting smaller, the company's performance can be said to be increasing or improving, which is shown in the level of operational cost efficiency at the bank concerned so that it allows the bank to be in quite a small problem condition and will increase the profitability of a bank (Indyarwati and Handayani, 2017: 9) .

This research can be said to be in accordance with the theory which states that OEOI has an effect on profitability. Costs are expenses incurred by a company in order to create or obtain income, the meaning of costs here are costs that are directly or indirectly used to create income in a period. A bank with a high BOPO ratio indicates that the bank is not operating efficiently because the high value of this ratio shows the large amount of operational costs that must be incurred by the bank to obtain operating income (Indonesian Bankers Association, 2016: 287).

The results of this study are not in line with the results of Yusuf's (2017: 149) research which reveals that BOPO has a positive effect on profitability. This shows that the higher the BOPO, the higher the amount of return on assets which will increase profitability and of course will increase the return on assets that will be received by Islamic banks. So that the higher this ratio indicates that the bank's operational costs are higher, which means that the bank is less efficient in controlling its operational costs so that it affects the decrease in income generated by Islamic Commercial Banks.

4.4.3. The effect of FDR on profitability

The third hypothesis (H3) which states that FDR has an effect on profitability, is **rejected**. This shows that the FDR has an effect on profitability. Based on the test results in this study, FDR has a tcount of 1.355043. While the probability value is greater than the significance level (0.1875> 0.05) which indicates that **FDR has no effect on profitability**.

The results of this study support the results of research conducted by Mahampang and Harjanti (2016: 139), (Munir, 2018: 96) and Sitompul and Nasution (2019: 237) which state that FDR has no significant effect on profitability (ROA). This is due to the fact that the financing channeled by Islamic banking has not been running effectively and optimally. So that it causes non-current financing to increase along with the total financing made by banks (Widyaningrum and Septiarini, 2015 in Munir, 2018: 96).

This study is not in line with the existing theory that FDR has a positive effect on profitability. According to Bank Indonesia Circular No.3 / 30 / DPNP The important objective of this FDR calculation is to determine and assess to what extent a bank is in a healthy condition in carrying out its operations or business activities. In other words, FDR is used as an indicator to determine the level of vulnerability of a bank. The higher the FDR, the higher the liquidity, because the amount of funds needed for financing is also increasing and the benefits obtained are also greater. This theory is in line with research conducted by Yusuf (2017: 149) and Rofiqo and Afrianti (2019: 546). With the assumption that this ratio is within the limits set by Bank Indonesia.

The results of this study are not in line with the results of research conducted by Indyarwati and Handayani (2017: 6) and Risalah *et al.,* (2018: 243) suggesting that FDR has a significant positive effect on profitability (ROA). This means that the higher the FDR, the lower the ROA will be, this is due to the possibility of bad financing at Islamic Commercial Banks (Indyarwati and Handayani (2017: 6). In the banking world, a balance is needed between the funds raised and funds collected. distributed so that idle funds do not occur and the funds used must be productive.

4.4.4. The effect of the NPF ratio on profitability

The fourth hypothesis (H4) which states that the NPF ratio affects profitability, is **rejected**. This shows that the NPF ratio has no effect on profitability. Based on the test results in this study, the NPF ratio has a tcount of 1.679174. While the probability value is greater than the significance level (0.1056> 0.05) which indicates that **NPF has no effect on profitability**.

The results of this study support the results of research conducted by Mahampang and Harjanti (2016: 139), Abdillah *et al.,* (2016: 147), Risalah *et al.,* (2018: 243), Sitompul and Nasution (2019: 237) and Syakhrun *et al.,* (2019: 9) which states that FDR has no significant effect on profitability (ROA). It is strengthened by the argument that high and low NPF conditions in one period do not directly result in a decrease in profits in the same period. This is because the significant effect of NPF on ROA is related to determining the level of congestion in financing provided by each

bank and possibly because the NPF of a bank is small so it cannot affect ROA (Mahampang and Harjanti, 2016: 139).

This contradicts the theory that the lower the NPF, the higher the profitability because the smaller the credit risk borne by the bank. Conversely, the higher the NPF, the lower the profitability will be due to the loss of opportunities for banks to earn profits, which means that the NPF ratio has a negative effect on profitability. This theory is in line with the research of Indyarwati and Handayani (2017: 6), Afrizal (2017: 201) and Rofiqo and Afrianti (2019: 546). Large problematic financing can result in a loss of opportunity to obtain income from financing provided by the bank so that it affects profits and affects ROA (Indyarwati and Handayani, 2017: 6).

This is also not in line with Munir's research (2018: 95) which states that NPF has a positive effect on profitability. This positive result indicates that the performance of Islamic banking is good in the NPF. In other words, the default rate channeled by Islamic banking is low, the average value is 2.68 percent (Almunawwaroh and Marliana, 2018 in Munir, 2018: 95).

4.4.5. Influence CAR, BOPO ratio, FDR, and the NPF ratio simultaneously to profitability

Based on the results of the F-statistic value of 215.9231 with a significance value of 0.000000 <0.05 means CAR, the ratio of OEOI, FDR, and NPF ratio simultaneously affect **accepted** profitability. Then the hypothesis is proven influential. Apart from that based onAdjusted R2 value of 0.858372, meaning that the coefficient of determination of this study is equal to 0.858372 This means that the independent variable is able to explain the dependent variable only at 85.84%. The remaining 14.16% is influenced by other independent variables which were not examined in this study. As expressed bySyakhrun *et al*., (2019: 9) that CAR, BOPO, NPF and FDR have an effect on profitability.

V. CONCLUSIONS AND SUGGESTIONS

5.1. Conclusion

Based on the results of research and discussion, it can be concluded as follows:

1. CAR does not have a significant effect on profitability at Islamic Commercial Banks in Indonesia for the 2016-2018 period, meaning that high or low CAR does not have an effect on profitability.
2. The OEOI ratio has a significant effect on profitability at Islamic Commercial Banks in Indonesia for the period 2016-2018, meaning that the OEOI ratio has an influence on profitability. The effect that occurs is a negative influence. This shows that if the BOPO ratio increases, it will cause a decrease in the profitability ratio.
3. FDR has no significant effect on profitability at Islamic Commercial Banks in Indonesia for the 2016-2018 period, meaning that the high and low FDR does not have an effect on profitability.
4. The NPF ratio has no significant effect on profitability at Islamic Commercial Banks in Indonesia for the 2016-2018 period, meaning that the level of the NPF ratio does not have an effect on profitability.
5. CAR, BOPO ratio, FDR and NPF ratio simultaneously have a significant effect on profitability in Islamic Commercial Banks in Indonesia for the period 2016-2018.

5.2. Suggestion

Based on the research that has been done, the suggestions that can be submitted by researchers include:

It is recommended for Islamic Commercial Banks to increase profitability by considering the BOPO ratio, while the CAR, FDR and NPF ratio factors do not need to be considered to increase the profitability ratio because in this study they do not have an effect on profitability.

5.3 Limitations and Further Research Development

The limitations of this study are:

1. Companies that are used as research are limited to Islamic Commercial Banks in Indonesia.
2. This study only uses four independent variables, namely CAR, BOPO ratio, FDR, and the NPF ratio which are only the factors that affect return on assets.
3. The observation period in this study was only focused for 3 years, from 2016 to 2018.

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