

MACROECONOMIC FACTORS AND THE PROFITABILITY OF SHARIA BANKS

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Abstract

This study assesses the factors that affect the profitability of Sharia banks in Indonesia. This study used Return on Asset (ROA) as a dependent variable, while independent variables include CAR, NPF, FDR, BOPO, DPK, Mudarabah financing, Murabaha financing, Interest Rate, and inflation. The research period from 2015 to 2020 using the autoregressive distributed lag (ARDL) approach. The study found that in the short term, NPF, FDR, BOPO, DPK, Mudarabah financing, Murabaha financing, and inflation are significant variables to profitability. In the long run, significant variables to profitability include CAR, BOPO, DPK, and Interest Rate. Mudarabah and BOPO financing are the variables that have the most impact on profitability. Therefore, sharia bank management needs to pay attention to the risks to financing using a revenue-sharing scheme.

Keywords: Profitability, financing, mudarabah, murabaha, ARDL

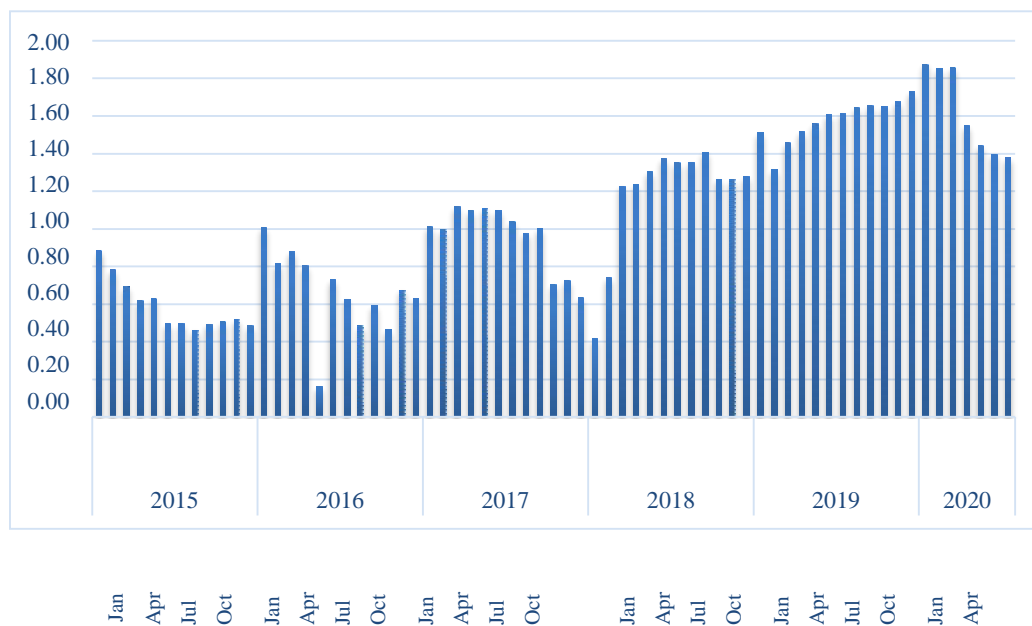
Background

Sharia banks in Indonesia have grown quite rapidly since 1998 until today. The development of sharia banks can be seen from the number of sharia bank offices that have spread in 34 provinces in Indonesia (FSA, 2020). This development cannot be separated from the increasing role of Sharia banks in helping the community economy. Sharia banks can provide the needs of the community through funding products, financing and services owned. The development of Islamic banks is also supported by the quality of services based on technology, such as electronic banking (Solarin et al., 2018). Improving the quality of services makes Sharia banking products increasingly known and more and more products are being utilized by the public (Nasution, 2020). More and more sharia bank products that benefit the public will improve the bank's performance (Anggraini, 2019).

Bank performance is generally seen from the ability to generate profit or profitability. Sharia banks need to pay attention to variables that affect profitability in order for performance to improve over time. Good performance of sharia banks will increase

the level of public trust to store funds, apply for financing and conduct transactions with sharia banks. Increasing funds will provide opportunities for Sharia banks to be able to channel financing in productive sectors. High financing with good financing management will increase profitability. Profitability is used to measure the financial performance of Sharia banks in general. Sharia bank profitability measuring instruments include profit-to-asset ratio or return on asset (ROA). ROA demonstrates the ability of sharia banks to utilize available assets to generate profit in a certain period (Syahri & Harjito, 2020).

Figure 1. Development of Sharia Bank ROA in Indonesia



Source: Financial Services Authority, 2020.

Figure 1. ROA level of sharia banks from January 2015 to July 2020 generally indicates an increase. The lowest ROA value occurred in May 2016, while the highest was in January 2020. ROA value has increased quite stable in 2019, where ROA shows a positive trend from January to December 2019. While in 2020, at the beginning of the year showed the roa value reached the highest value compared to previous years, but in March 2020 showed a decrease in value. The decrease in profitability in 2020 is due to a decrease in economic activity due to Covid-19 which was recorded to start entering Indonesia in February 2020.

There are many factors that are thought to affect profitability, both internally and externally from sharia banks. Based on previous research, internal factors or bank specific factors that affect sharia bank ROA include bank size, financial stability, capital adequacy ratio (CAR), non performing finance (NPF), financial debt ratio (FDR), ratio of operating costs to operating income (BOPO), third party funds (DPK), mudarabah financing (PMD) and murabaha financing (PMB), SBIS, and Minimum Mandatory Current Account (GWM) (Nasution, 2020; Fatmawati & Hakim, 2020;

Anggraini, 2019; Alharbi, 2017; Hanania, 2015; Ubaidillah, 2016; Othman and Asutay, 2018; Ghlamallah, 2021). While external factors or macroeconomic factors that affect ROA are economic growth (GDP), inflation (INF), Interest Rate and exchange rate (Tumewang et al., 2019; Sumarlin, 2016; Ardana, 2018; Alim, 2014; Sahara, 2013). This study tries to analyze the level of profitability based on the financial performance of Sharia banks over the last 5 years. This research model is based on a number of previous studies on profitability over the last 10 years. Internal variables used in this study include; CAR, NPF, FDR, BOPO, DPK, PMD, and PMB, while external variables, consist of; Interest Rate and inflation (INF). In addition, this study tries to analyze the relationship of internal and external variables with profitability levels in the short and long term by using ARDL. Where short-term and short-term analysis with ARDL rarely used research on profitability before.

Literature Review

Profitability of Sharia Banks

Sharia banks as business institutions have a purpose in their operations to obtain the maximum level of profitability. Profitability is the ability to use all the potential of the bank's production to generate profit in a certain period (Majid & Ulina, 2020; Hanania, 2015). Profitability is measured by the ratio of revenue to assets or return on assets (ROA) by taking into account the ability of sharia banks to profit from available assets. The level of profitability with roa approach is used to measure the ability of Sharia banks in managing their assets to generate revenue. The increase in ROA reflects the bank's financial performance in generating profitability so that the increase in ROA indicates an increase in profitability (Mahmudah & Harjanti, 2016). Profitability gets the attention of sharia bank owners and managers because the bank's activities ultimately aim to get maximum profit. Therefore the entire strategy is designed by bank management to realize the expected profitability target (Menicucci & Paolucci, 2016)

Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) is a ratio to measure capital adequacy that shows the extent of the bank's ability to provide capital used to overcome the risk of bank losses as a result of operational activities conducted (Ubaidillah, 2016). CAR levels are directly proportional to the bank's ability to survive in crisis situations or CAR is negatively related to the possibility of financial distress. Sharia banks that have high CAR tend to have the ability to optimize funds in a number of business units that generate profit. Research of Aysan et al. (2018), Majid and Ulina (2020), Muhaemin and Wiliasih (2016) and Mahmudah and Harjanti (2016) found positive influences, while Setiawan and Andriani (2016) and Ubaidillah, (2016) found a negative relationship between CAR and profitability. On the other hand, Wibowo and Syaichu (2013) did not find car's influence on profitability.

Non-Performing Financing (NPF)

Non-Performing Financing (NPF) or financing risk is a ratio used to determine debtors or fund users who fail to meet their obligations to banks at maturity (Hanania, 2015). Sharia bank management must be able to maintain the risk of possibly violating the normative provisions of financing and the Maximum Limit of Lending (BMPK) (Ubaidillah, 2016). If sharia banks can minimize financing risk then sharia banks will be able to maximize profitability. Aysan et al. (2018), Othman and Asutay (2018), Ubaidillah (2016), Muhaemin and Wiliasih (2016), and; Yusuf and Mahriana (2016) found a negative relationship between NPF and profitability. Meanwhile, Wibowo and Syaichu (2013) found that NPF had no effect on profitability.

Financing to Deposit Ratio (FDR)

Financing to Deposit Ratio (FDR) is the ratio of financing to funding owned by banks in a certain period (Mahmudah & Harjanti, 2016). The higher FDR indicates that the funds disbursed in the form of financing are relatively increased towards funding. The level of financing will affect the amount of potential revenue that will be received from the customer. However, the increase in FDR is not only due to increased financing to dpk, but also due to the decrease in deposit to financing. Therefore, the level of funding tends to affect the level of financing. The level of financing affects the amount of profitability that sharia banks will obtain. The higher FDR will improve the bank's ability to generate expected profitability. Research by Aysan et al. (2018), Majid &Ulina (2020), Ghlamallah (2021), Muhaemin and Wiliasih (2016), Ubaidillah, (2016) found a positive influence between FDR and profitability. In contrast to Sumarlin's research (2016) found that there is no effect of FDR on profitability

Operating Expenses to Operating Income (BOPO)

Operating Costs versus Operating Income (BOPO) or efficiency levels are used to determine the bank's ability to use the revenue earned to cover operating costs in a given period. If sharia banks can take advantage of the costs incurred to make the most of their income, management is able to manage costs efficiently (Ubaidillah, 2016). Therefore, bank management strives to minimize bopo level as an effort to maximize profitabiliytas. Fatmawati and Hakim (2020), Ubaidillah, (2016) and Muhaemin &Wiliasih (2016) found a negative influence of BOPO on profitability. On the other hand, Wibowo &Syaichu (2013) found a positive relationship, and Ghlamallah (2021) found no influence between BOPO and profitability.

Third Party Funds (DPK)

Third Party Funds (DPK) are funds obtained by Sharia banks from individual customers or business entities invested or deposited in the form of savings, deposits and current accounts. Higher deposit value will increase the chances of bank management to channel to several profitable business units. Bank funds derived from deposit are mostly channeled in the form of financing that has the potential to generate higher profitability than stored in the form of Bank Indonesia Wadiah Certificate (SWBI) or in the conversion of securities in the secondary market. Therefore, the higher deposit will increase the potential of Sharia banks to generate

higher profits. Othman and Asutay (2018); and, Setiawan and Andriani (2016) found a positive relationship between dpk and profitability. On the other hand, Ghlamallah (2021), Yusuf and Mahriana (2016); and, Hanania (2015) found in the long run dpk negatively affect profitability.

Mudarabah and Musyarakah Financing

Mudarabah financing is a financing agreement conducted by two parties, namely shahibul maal and mudharib to conduct a joint venture activity (Hasibuan, 2019; Solarin et al, 2018). Sharia banks act as shahibul maal which provides 100% of the funds requested by customers as mudharib. The profit obtained by sharia banks is in the form of profit sharing ratios that have been agreed between the two parties bound by the agreement. The small amount of profit earned can also affect the profitability level of the bank (Rahman & Fatmawati, 2020). Meanwhile, murabaha financing is a buying and selling agreement conducted by two parties, namely the seller who will sell the goods and the buyer who will buy the goods. In a trade transaction conducted with murabaha agreement, the seller asks for the profit that has been determined on the sale of the goods. Hasibuan (2019); and, Rahman and Rochmanika (2012) found a positive relationship between mudarabah financing and profitabilitas, but on the other hand found murabaha financing is not as significant to profitability at Muammalat Bank. Meanwhile, Fatmawati and Hakim, (2020) found mudarabah and murabaha financing had no effect on profitability. Similarly, Faradilla et al. (2017) and Romdhoni & Yozika (2018) found mudarabah financing had no effect on profitability.

Interest Rate

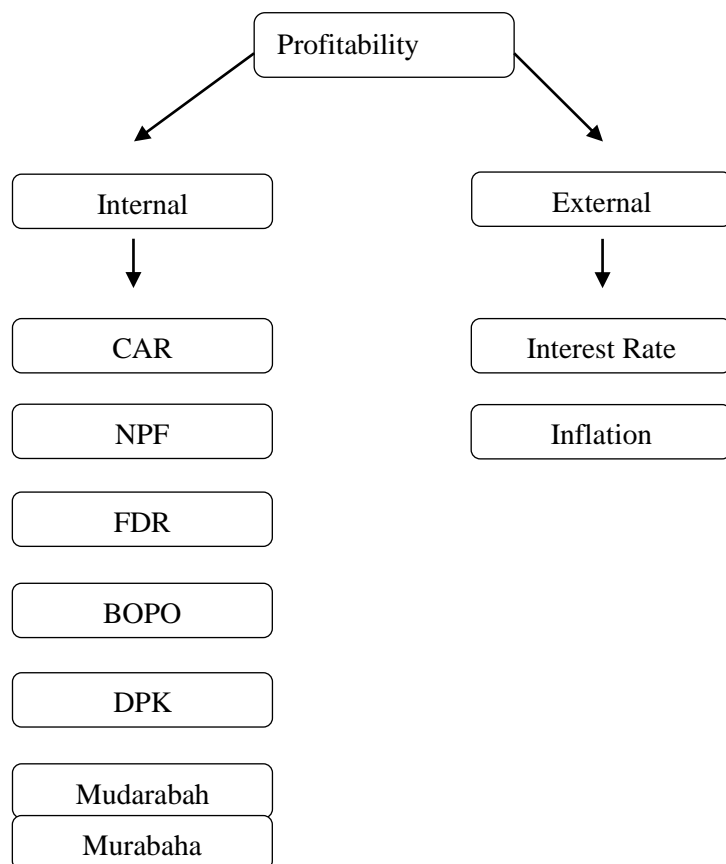
BI Rate or the benchmark Interest Rate is an Interest Rate set by Bank Indonesia as a reflection of monetary policy. If the benchmark Interest Rate increases it will encourage people to deposit their funds into the bank. However, this increase in the benchmark Interest Rate will decrease people's desire to apply for conventional bank loans. On the other hand, lower Interest Rates will lower people's desire to keep funds but will likely increase the desire to apply for credit. Sharia banks tend to follow conventional bank policies related to this Interest Rate so as not to be left behind by customers. This means that the increase in Interest Rate will lower the value of sharia bank financing which will eventually decrease profitability (AlHarbi, 2017). Tumewang, et al. (2019), Hanania (2015), Alim (2014) and, Sahara, (2013) found a negative relationship between Interest Rates and profitability, while Wibowo and Syaichu (2013) found that Interest Rates had no effect on profitability.

Inflation

Inflation is characterized by rising prices of goods in general which makes the value of the currency decrease (Sumarlin, 2016). Inflation is characterized by a low desire of the public to keep their money in the bank. People prefer to use the money they have to consume. The business sector is relatively increasing at a time of high

inflation as production output is absorbed in the market. This situation occurs because the Interest Rate is relatively low so that entrepreneurs get lighter production costs. Light interest increases the company's production and increases the ability of the entrepreneur to pay his obligations to the bank. However, the increase in inflation in the long term will reduce the purchasing power of the community, thereby reducing the absorption of production output (Wildan, 2021). Finally, the entrepreneur will have difficulty paying his obligations to the bank thus lowering the profitability of the bank. This situation is in line with the research of Aysan et al. (2018) and Tumewang et al. (2019) found a negative relationship between inflation and profitability. On the other hand, Ardana (2018) and Alim (2014) found that inflation had no effect on profitability.

Figure 2. Research Framework



RESEARCH METHODS

This study uses monthly data from January 2015 to July 2020. This period was chosen because the data used is data of sharia commercial banks non Sharia Business Unit (UUS). Meanwhile, the data before 2015 provided on the website of

Financial Services Authority (FSA) is a combination of data of commercial banks and UUS. Data sources for internal variables, such as CAR, NPF, FDR, BOPO, DPK, PMD, and PMB come from the website of the Financial Services Authority (FSA), while external variables such as Interest Rate and INF from the website of the Central Statistics Agency (BPS). FSA and BPS were chosen as the main sources of data because these two institutions are government agencies that have competence in releasing financial and economic data at the national level.

The analysis techniques used in this study are Autoregressive Distributed Lag (ARDL). In the ARDL model there are several stages of testing; the first stage is a stationary test using the Augmented Dickey Fuller (ADF) test. Stationary test to see if time-running data contains the root unit. The second stage, is a co-integration test using Bound Testing Approach. The co-integration test aims to determine whether or not there is a long-term relationship between variables in the ARDL model. The third stage is the estimation of ARDL models in the short and long term (Aysan et al. (2018)).

RESULTS AND DISCUSSION

Table 1 shows a statistical description of each variable used in this study. The average value of dependent variables is ROA, at 1.06% with a standard deviation of 0.441%. The average of CAR variables is 17.659% with a standard deviation of 2.480%. The average of SHARIA BANK CAR is relatively high, which means that the position of SHARIA BANK CAR in January 2015 to July 2020 is in a safe position and shows that Sharia Banks always pay attention to their capital adequacy ratios well. The average npf value is 4.47% with a standard deviation of 0.845%.

If seen, the average NPF value of sharia banks is still in the safe category, because the maximum limit of good NPF value is 5%.

Table 1. Description of Statistics

Variable	Mean	Std. Deviation	Maximum	Minimum
Roa	1.06	0.441	1.88	0.16
CAR	17.65969477	2.480	21.39	14.09
NPF	4.47	0.845	6.17	3.23
Fdr	83.07	4.619	92.56	77.02
BOPO	91.53	4.610	99.04	82.78
DPK	224.573	42866.36964	293.374.23	162.816.58
PMD	6.673	1315.739273	8.582.53	4.104.04
PMB	109.580	12079.14296	130.220.49	90.506.87
Interest Rate	5.630597015	1.172	7.75	4.00
Inf	0.248507463	0.305	0.97	-0.45

Source: Data processed, 2021

For the average value of FDR is 83.07% with a standard deviation of 4.619%. The average value of FDR is still in a safe position, because the normal limit of FDR value according to Bank Indonesia is 78%-100%. While the average value of BOPO is 91.53% with a standard deviation of 4,610%. The value is still classified as safe, but also included in the high criteria. The average deposit value is Rp 224.573 billion. PMD has an average value of Rp 6,673 billion, while PMB has an average value of Rp 109,580 billion. Judging from these figures, PMB has a higher average value, which means that PMB contributes more to the profitability of Sharia Banks in Indonesia from January 2015 to July 2020. For Interest Rate, the average value is 5.63% with a standard deviation of 1.172%. For inflation, the average value is 0.24% with a standard deviation of 0.305%.

Table 2. Stationary Test Results

Variable	Level I(0)			First Difference I(1)		
	Intercept	Trend	None	Intercept	Trend	None
ROA	-1.6175	-3.7614**	-0.3032	-10.0712***	-9.9907***	-10.1186***
CAR	-0.8311	-2.1952	1.6872	-8.0161***	-7.9517***	-7.7084***
NPF	-1.0278	-3.4385*	-1.1130	-3.8124***	-3.7800**	-3.7015***
FDR	-1.2777	-0.9388	-1.2767	-10.8915***	-10.9159***	-10.7868***
BOPO	-0.9140	-3.3298*	-0.8819	-8.4727***	-8.4306***	-8.4533***
DPK	-0.0777	-3.0606	4.2701	-10.7186***	-10.6327***	-2.7964***
PMD	0.2949	-3.4571*	-2.2063**	-6.5349***	-6.5992***	-6.1802***
PMB	-0.4278	-2.1008	2.6293	-8.5242***	-8.4574***	-7.6899***
Interest Rate	-1.1420	-1.3910	-1.5727	-5.6568***	-5.5983***	-5.4540***
Inf	-7.2588***	-7.6662***	-1.0917	-8.5090***	-8.4987***	-8.5832***

Information:

Data processed using E-Views 10

Description of significance level: (*) = 10% ;(**) = 5% ;(***) = 1%

Table 2 shows the results of the ADF test of the variables used in this study. It can be seen that the variables used have different levels of stationarity. Inflation is stationary at the level which means the ADF value of the inflation variable > Test Critical Values (1%, 5%, and 10%). While other variables, including: ROA, CAR, NPF, FDR, BOPO, DPK, PMD, PMB and Interest Rate are not stationary at the level. This indicates that stationary testing should be conducted at a later level until a stationary result can be obtained. From the results of the stationary test at the first difference level shows the results that all stationary variables, where the ADF value of variables ROA, CAR, NPF, FDR, BOPO, DPK, PMD, PMB, Interest Rate, and inflation > Test Critical Values (1%, 5%, 10%). This means that most of the variables are above stationary at I (1) and there is only one stationary variable at I (1).

Table 3. ARDL Estimation Results

Variable	Coefficient	Std. Error	T-Statistic	Prob.	information
ROA(-1)	-0.664440	0.206627	-3.215652	0.0051	Significant
ROA(-2)	0.131192	0.174747	0.750753	0.4631	Insignificant
ROA(-3)	0.164822	0.098281	1.677053	0.1118	Insignificant
ROA(-4)	-0.172408	0.097572	-1.766987	0.0952	Significant
CAR	0.011619	0.023207	0.500653	0.6230	Insignificant
CAR(-1)	0.041024	0.031538	1.300796	0.2107	Insignificant
CAR(-2)	-0.028563	0.036231	-0.788353	0.4413	Insignificant
CAR(-3)	0.010669	0.034901	0.305687	0.7636	Insignificant
CAR(-4)	0.071252	0.035907	1.984381	0.0636	Significant
NPF	0.138642	0.068580	2.021620	0.0592	Significant
NPF(-1)	-0.132173	0.053438	-2.473375	0.0242	Significant
NPF(-2)	-0.007939	0.060208	-0.131866	0.8966	Insignificant
NPF(-3)	-0.114730	0.070260	-1.632935	0.1209	Insignificant
NPF(-4)	0.146710	0.067677	2.167804	0.0447	Significant
Fdr	0.063892	0.029604	2.158234	0.0455	Significant
FDR(-1)	-0.018514	0.021131	-0.876131	0.3932	Insignificant
FDR(-2)	-0.021275	0.022001	-0.967019	0.3471	Insignificant
FDR(-3)	-0.019839	0.025049	-0.792004	0.4393	Insignificant
FDR(-4)	0.010770	0.010241	1.051714	0.3077	Insignificant

BOPO	-0.149046	0.013179	-11.30945	0.0000	Significant
BOPO(-1)	-0.082381	0.033436	-2.463865	0.0247	Significant
BOPO(-2)	0.040410	0.030800	1.312013	0.2070	Insignificant
DPK	0.009081	0.007727	1.175210	0.2561	Insignificant
DPK(-1)	-0.005001	0.006764	-0.739407	0.4697	Insignificant
DPK(-2)	-0.003808	0.007267	-0.524071	0.6070	Insignificant
DPK(-3)	-0.020395	0.009597	-2.125161	0.0485	Significant
PMD	-0.291998	0.081554	-3.580413	0.0023	Significant
PMD(-1)	0.168873	0.078556	2.149722	0.0463	Significant
PMD(-2)	0.054873	0.075608	0.725752	0.4779	Insignificant
PMD(-3)	-0.113173	0.065574	-1.725896	0.1025	Insignificant
MD(-4)	0.102746	0.058796	1.747501	0.0986	Significant
PMB	-0.031307	0.014546	-2.152228	0.0460	Significant
PMB(-1)	0.008422	0.014160	0.594781	0.5598	Insignificant
PMB(-2)	-0.008066	0.015124	-0.533324	0.6007	Insignificant
PMB(-3)	0.036429	0.012807	2.844347	0.0112	Significant
PMB(-4)	0.017192	0.008376	2.052443	0.0559	Significant
Interest Rate	-0.191029	0.070923	-2.693482	0.0154	Significant
Interest Rate(-1)	-0.012310	0.097689	-0.126016	0.9012	Insignificant
Interest Rate(-2)	0.128496	0.113413	1.132997	0.2729	Insignificant
Interest Rate(-3)	-0.237086	0.128409	-1.846333	0.0823	Significant
Interest Rate(-4)	0.189930	0.087176	2.178702	0.0437	Significant
Inf	0.109487	0.044175	2.478484	0.0240	Significant
INF(-1)	0.070489	0.049425	1.426180	0.1719	Insignificant
INF(-2)	-0.003357	0.041537	-0.080809	0.9365	Insignificant
INF(-3)	-0.060051	0.041344	-1.452462	0.1646	Insignificant
C.	19.01873	7.114816	2.673116	0.0160	Significant

Statistical Values

R-squared	0.997246
Adjusted R-squared	0.989957

F-statistic	136.8038
Prob(F-statistic)	0.000000
Diagnostic	
LM 1	0.1035
LM 2	0.0005
ARCH 1	0.1128
ARCH 2	0.2255

Source: data processed, 2021

Table 3 shows the ardl estimation results using ardl models (4, 4, 4, 4, 2, 3, 4, 4, 4, and 3). The model shows that many variables are significant, although there are insignificant variables in some lags. Thus, the ARDL model can be continued to the next stage. While the values LM (1), LM(2), ARCH(1), and ARCH(2) show that there are no autocorrelation or heteroscedasticity problems in the data used, so the ARDL model can be continued to the next stage. While adjusted values R-Squared and R-Squared are relatively high values of 0.989957 and 0.997246, which means 98.9% and 99.7% variation of profitability (ROA) can be explained by each free variable selected in the ARDL model.

Table 4. Cointegration Test Results

F-Statistic Value = 3.568396				
Significance	Lower Bound	Upper Bound	Lower Bound	Upper Bound
10%	1.8		2.8%	
5%	2.04%		2.08%	
1%	2.5%		3.68%	

Source: data processed, 2021

Table 4. Showed the results of the co-integration test which stated that the calculated F value and critical F value at various levels of significance. Critical F values consist of upper limit or upper bound critical F and critical F lower bound. The result is the value of F calculates > critical F values at the limit I (0) and I (1) is 3.568396 > 1.8 and 2.8. So the results show that we reject H0, which means that the data has a co-integration value. That is, there is a long-term relationship between dependent variables, namely profitability and independent variables namely CAR, NPF, FDR, BOPO, DPK, PMD, PMB, Interest Rate, and inflation.

Table 5. Short Term ARDL Estimation Results

Variable	Coefficients	Std. Error	T-Statistic	Prob.	Information
D(ROA(-1))	-0.123606	0.118313	-1.044738	0.3108	Insignificant
D(ROA(-2))	0.007586	0.050514	0.150174	0.8824	Insignificant
D(ROA(-3))	0.172408	0.048362	3.564969	0.0024	Significant
D(CAR)	0.011619	0.014618	0.794802	0.4377	Insignificant
D(CAR(-1))	-0.053358	0.015456	-3.452199	0.0030	Significant
D(CAR(-2))	-0.081921	0.018036	-4.542112	0.0003	Significant
D(CAR(-3))	-0.071252	0.018744	-3.801401	0.0014	Significant
D(NPF)	0.138642	0.033009	4.200120	0.0006	Significant
D(NPF(-1))	-0.024041	0.030519	-0.787745	0.4417	Insignificant
D(NPF(-2))	-0.031980	0.029548	-1.082336	0.2942	Insignificant
D(NPF(-3))	-0.146710	0.034395	-4.265474	0.0005	Significant
D(FDR)	0.063892	0.013921	4.589539	0.0003	Significant
D(FDR(-1))	0.030344	0.013535	2.241981	0.0386	Significant
D(FDR(-2))	0.009069	0.012130	0.747649	0.4649	Insignificant
D(FDR(-3))	-0.010770	0.006704	-1.606552	0.1266	Insignificant
D(BOPO)	-0.149046	0.007096	-21.00382	0.0000	Significant
D(BOPO(-1))	-0.040410	0.015888	-2.543372	0.0210	Significant
D(DPK)	0.009081	0.003678	2.468810	0.0245	Significant
D(DPK(-1))	0.024203	0.005112	4.734996	0.0002	Significant
D(DPK(-2))	0.020395	0.005143	3.965183	0.0010	Significant
D(PMD)	-0.291998	0.043003	-6.790107	0.0000	Significant
D(PMD(-1))	-0.044445	0.035371	-1.256532	0.2259	Insignificant
D(PMD(-2))	0.010427	0.033156	0.314494	0.7570	Insignificant
D(PMD(-3))	-0.102746	0.033941	-3.027153	0.0076	Significant
D(PMB)	-0.031307	0.007675	-4.079125	0.0008	Significant
D(PMB(-1))	-0.045554	0.008952	-5.088667	0.0001	Significant
D(PMB(-2))	-0.053621	0.010240	-5.236623	0.0001	Significant
D(PMB(-3))	-0.017192	0.004859	-3.538240	0.0025	Significant

D(BI_RATE)	-0.191029	0.044595	-4.283641	0.0005	Significant
D(BI_RATE(-1))	-0.081340	0.043605	-1.865362	0.0795	Significant
D(BI_RATE(-2))	0.047156	0.047426	0.994309	0.3340	Insignificant
D(BI_RATE(-3))	-0.189930	0.054477	-3.486436	0.0028	Significant
D(INF)	0.109487	0.022963	4.767901	0.0002	Significant
D(INF(-1))	0.063407	0.022392	2.831740	0.0115	Significant
D(INF(-2))	0.060051	0.021261	2.824476	0.0117	Significant
CointEq(-1)*	-1.540834	0.195149	-7.895693	0.0000	Significant

Source: Data processed, 2021

From the short-term ARDL estimation in table 5, cointeq value (-1) is obtained. The variable is a variable that indicates the error correction of the model used. The CointEq value (-1) of the result indicates negative and significant, where the cointEq value (-1) has a probability of 0.0000 and a coefficient of -1.540834, significant at various alpha levels of 1%, 5%, and 10%. That is, the ARDL model is valid. In addition, from the result is also obtained the probability value t-statistics, where from that value compared to the value of the degree of significance will be known whether or not the influence of independent variables on dependent variables. A probability value that is smaller than the value of significance, it can be said that there is a significant influence of independent variables on dependent variables.

Table 6. Long Term ARDL Estimation Results

Variable	Coefficient	Std. Error	T-Statistic	Prob.	Information
CAR	0.068795	0.024410	2.818263	0.0118	Significant
NPF	0.019801	0.094221	0.210159	0.8360	Insignificant
Fdr	0.009757	0.012057	0.809225	0.4296	Insignificant
BOPO	-0.123970	0.008072	-15.35883	0.0000	Significant
DPK	-0.013060	0.001756	-7.437599	0.0000	Significant
PMD	-0.051063	0.044363	-1.151015	0.2657	Insignificant
PMB	0.014712	0.010003	1.470737	0.1596	Insignificant
Interest Rate	-0.079178	0.036741	-2.155017	0.0458	Significant
Inf	0.075654	0.058412	1.295169	0.2126	Insignificant
C.	12.34314	3.127020	3.947255	0.0010	Significant

Source: Data processed, 2021

Table 6 shows the long-term estimated results, in which CAR has a positive and significant impact on profitability. That is, with the increasing value of CAR sharia banks means the better the position of capital owned by the bank. This capital adequacy ratio can be used by Sharia banks to deal with the risk of possible losses. This research is in accordance with the research of Aysan et al. (2018), Majid and Ulina (2020), Muhaemin and Wiliasih (2016), Mahmudah and Harjanti (2016) which showed a positive and significant relationship between CAR and ROA variables. However, the results of this study are not in line with the research of Setiawan and Andriani (2016), Ubaidillah (2016) and Sumarlin (2016), which showed that car variables have a negative and significant relationship to ROA.

NPF has no effect on profitability in the long run. That is, the high low NPF level does not directly affect the level of profitability of sharia banks. The results of this study are in accordance with research conducted by Wibowo and Syaichu (2013) which found that NPF has no effect on ROA. This finding shows that sharia bank management is able to manage funds channeled to each type of financing. The procedure for providing financing through financial scoring becomes the starting door for banks to see the level of security of financing to be channeled. Financial scoring is what makes banks able to predict financing risks in the future. The npf value during the research period shows that bank management is relatively able to minimize the increasing risk of financing beyond the expected target. Although the results of this study are not in accordance with the research of Aysan et al. (2018), Othman and Asutay (2018), Ubaidillah (2016), Muhaemin and Wiliasih (2016) and Yusuf and Mahriana (2016) who found negative influences between npf and profitability. However, this result shows positive results for financing risk management in sharia banks.

FDR has no effect on profitability in the long run. The value of funding obtained from dpk shows a steady increase, as well as the value of breeding channeled to the production, consumptive and service sectors. Sharia bank management during the research is able to maintain liquidity well by maintaining the proportion of funds disbursed and incoming funds. The business orientation of sharia banks is not only on efforts to maximize profitability but also to take into account the level of security in managing funds owned by the principle. The results of this study are in accordance with Sumarlin's research (2016) which found that there is no effect of FDR on profitability. However, these results differed from the research of Aysan et al. (2018), Majid and Ulina (2020), Ghlamallah (2021), Muhaemin and Wiliasih (2016), and Ubaidillah, (2016) which found a positive influence between FDR and profitability.

BOPO negatively affects profitability in the long run. Bank management is able to maximize the operational costs incurred in order to optimize the profit that will be obtained by the bank. The costs incurred by sharia banks in the research period are in line with the bank's expected revenue target by bank management. This means that bank management is quite careful in determining policies related to bank expenses or costs (overhead costs). Management policy is called efficient when the

amount of operational costs is positively correlated to the expected amount of revenue. The results show that bank management is able to manage operational costs so as to maximize the profitability of the bank. This result is in accordance with the findings of Fatmawati and Hakim (2020), Ubaidillah, (2016) and Muhaemin and Wiliasih (2016) found that BOPO negatively affects profitability. However, this study is not in accordance with the research of Ghlamallah (2021) and Wibowo & Syaichu (2013).

Deposit negatively affects the profitability of sharia banks. The results of this study are in accordance with research conducted by Ghlamallah (2021) and Yusuf and Mahriana (2016) and Hanania (2015) which found in the long run dpk negatively affect profitability. Deposit level does not directly affect the bank management to channel funds in the form of financing. The negative relationship between deposit and profitability due to the increase in deposit has no effect on the level of financing or the increase in financing is not influenced by the large value of deposit. Bank management considers the level of security of financing so that it is more careful in providing financing to customers. This situation that causes the development of deposit with financing tends to be less aligned in the research period. These results are different from setiawan and andriani (2016) and Othman and Asutay (2018) research which found a positive relationship between deposit and profitability.

Mudarabah financing has no effect on the profitability of sharia banks. Mudarabah financing is a financing whose return depends on the level of business income obtained by the customer. The Bank will get additional financing refunds as long as the customer gets the benefit. The Bank cannot expect a consistent return on income from customers over time. Bank management tends to minimize the funds owned to be channeled to mudarabah financing because this financing cannot be ascertained the amount of profit provided by the bank. This situation that causes mudarabah financing has no effect on profitability. The results of this study are in line with research conducted by Fatmawati and Hakim (2020), Faradilla et al. (2017) and Romdhoni & Yozika (2018) which found that mudarabah financing had no effect on profitability.

Meanwhile, murabaha financing has a positive effect on the profitability of Sharia banks. Sharia bank management distributes more financing in the form of murabaha because this financing is relatively more certain in providing profit. Sharia banks as business institutions need certainty of future revenues to serve as the basis for management in making policies. Likewise, the owner of the bank (principle) requires certainty that the bank owned is far from the possibility of loss or bankruptcy. The owner of savings and deposit funds also does not want to lose with the uncertainty of the revenue share obtained. Therefore, the bank's management distributes more financing in the form of murabaha to generate the expected revenue. This result is similar to the findings of Fatmawati and Hakim (2020) and Rahman and Rochmanika (2012) where murabaha financing has a positive effect to improve the profitability of Sharia banking.

Interest Rate or the reference Interest Rate negatively affects the profitability of sharia banks. These results are in line with Tumewang's research, et al. (2019), Hanania (2015), Alim (2014) and Sahara, (2013) stating that the benchmark Interest Rate negatively affects the profitability of Sharia banks. Rising Interest Rates create contingencies for the increasing capital burden of the company because the Interest Rate is the price of debt (credit). If the Interest Rate is high then the customer will get the burden to return the excess from the higher principal. Therefore, most customers reduce debt to the bank at a time when Interest Rates are rising. Sharia banks do not use Interest Rates but sharia banks still use Interest Rates as a reference to determine margin and profit sharing ratios. This situation, which causes the impact of increasing margins and profit sharing ratios on sharia banks, is not much different from the Interest Rate in conventional banks.

Inflation has no effect on the profitability of sharia banks. That is, the rising inflation rate does not affect the level of profitability of Sharia banks. This research is in accordance with the research of Ardana (2018) and Alim (2014) which found that inflation has no effect on profitability. However, this research is not in accordance with the research conducted by Aysan et al. (2018) and Tumewang et al. (2019) and Hidayati (2014) which found that inflation had a positive influence on the profitability of Sharia banks. Inflation will cause people's purchasing power to decline, thus affecting the decrease in production output. The income of entrepreneurs will decrease if the source of opinion obtained is not absorbed by the market because the price of goods and services is relatively expensive. This situation causes the ability of entrepreneurs to return financing and margins or share the proceeds to sharia banks decreases so that the profitability obtained by sharia banks decreases.

Cover Based on the data, it can be concluded that in the short and long term, variables CAR, NPF, FDR, BOPO, DPK, PMD, PMB, Interest Rate, and inflation have different influences on profitability levels. In the short term, the internal variables of sharia banks that affect profitability are NPF, FDR, BOPO, DPK, and PMB. In the long run, CAR and PMB have a positive influence, while BOPO and Interest Rate negatively affect profitability. Meanwhile, NPF, FDR, DPK, PMD and inflation have no effect on profitability.

Sharia bank management needs to maintain the principle of daily prudence in managing financing in order to reduce financing risk. The attitude of bank management prioritizes murabaha financing is a concession of efforts to be able to generate maximum profit. In addition, this policy is an effort to avoid the risk of uncertainty in mudarabah financing. In addition, the bank's management efforts in improving efficiency by maximizing the added value of bank expenditures to maximize revenues need to be maintained. The attitude of bank management to make Interest Rates as a reference in determining margin and profit sharing ratios need to be reduced in order to be stuck in the ribawi system.

This study has a number of limitations, among others; first, the number of observations as much as 67 months is relatively less to get comprehensive data

results. Therefore, it is recommended to add observation data or use panel data from every 14 Sharia banks from 2015 to 2020. Second, the number of external variables or macros needs to be increased to get more balanced information between internal and external variables that affect profitability. Recommended variables of economic growth or GDP, exchange rates or investments can be included as macro-economic variables. Third, the variables used mostly use quantitative variables so that this study has not been able to digest the policy behind the emergence of the data in its entirety. Qualitative data should be considered as an important part of the next profitability research model.

References

- Alharbi, A.T. (2017), Determinants of Islamic banks' profitability: international evidence, 10(3), 331-350. <https://doi.org/10.1108/IMEFM->
- Alim, S. (2014). Analysis of the Effect of Inflation and Bi Rate on Return on Assets (Roa) of Sharia Banks in Indonesia. *Journal of Modernization Economics*, 10(3), 201-220. <https://doi.org/10.21067/jem.v10i3.785>
- Anggraini, M. (2019). Islamic Banking Development and Economic Growth: A Case Study of Indonesia. *Asian Journal of Islamic Management*, 1(1), 51-65. <https://doi.org/10.1108/AJIM.vol1.iss1.art5>
- Ardana, Y. (2018). External and Internal Factors Affecting the Profitability of Sharia Banks in Indonesia. *Horizons*, 13(1), 51. <https://doi.org/10.31603/cakrawala.v13i1.2042>
- Aysan, A. F., Disli, M., & Ozturk, H. (2018). Bank lending channel in a dual banking system: Why are Islamic banks so responsive? *The World Economy*, 41(3), 674–698.
- Central Bureau of Statistics. 2021. BI Rate. Retrieved February 21, 2021, from www.bps.go.id
- Central Bureau of Statistics. 2021. Indonesia's Consumer Price index and Monthly Inflation for 2006-2020. Retrieved January 11, 2021, from www.bps.go.id
- Ezzedine Ghlamallah, Christos Alexakis, Michael Dowling, Anke Piepenbrink. (2021). The topics of Islamic economics and finance research, *International Review of Economics and Finance*, Vol 75, Sep 21, pp. 145-160
- Faradilla, C., Muhammad, A., & Shabri, M. (2017). The Effect of Murabaha, Istishna, Ijarah, Mudarabah and Musyarakah Financing on The Profitability of Sharia Banks in Indonesia. *Journal of Master of Accounting*, 6(3), 10–18.
- Fatmawati, N. L., & Judge, A. (2020). Analysis of Sharia Banking Profitability In Indonesia. *Baabu Al-Ilmi Journal of Sharia Economics and Banking*, 5, 1–15. <https://doi.org/10.29300/ba.v4i2>
- Hanania, L. (2015). Internal and External Factors Affecting The Profitability of Sharia Banking in the Short and Long Term. *Perbanas Review*, 1(1), 151–68.
- Hasibuan, F. U. (2019). Analysis of the Effect of Murabaha, Mudarabah, and Musyarakah Financing on Return on Asset Case Study at PT Bank Muamalah Indonesia TBK. Period 2015-2018. *Human Falah*, 6(1), 19-36.
- Hidayati, A. N. (2014). Effect of Inflation, BI Rate and Exchange Rate on Profitability of Sharia Banks in Indonesia. *An-Nisbah*, 01(46), 72–97.
- Mahmudah, N., & Harjanti, R. S. (2016). Analysis of Capital Adequacy Ratio, Financing to

Deposit Ratio, Non Performing Financing, and Third Party Funds to The Profitability Level of Sharia Banks for the Period 2011-2013. *National Seminar on Applied Science*, 1(1), 134–143.

Majid, M.S.A., &Ulina, S. (2020). Does the 2008-Global Financial Crisis Matter for the Determinants of Conventional and Islamic Banking Performances in Indonesia? *Journal of Islamic Economics and Finance*, 6(2), 77-90. <https://doi.org/10.20885/JEKI.vol6.is.s2.art1>

Menicucci, E., & Paolucci, G. (2016). The Determinants of Bank Profitability: Empirical Evidence from European Banking Sector, *Journal of Financial Reporting and Accounting*, 14(1), 86-115, <https://doi.org/10.1108/JFRA-05-2015-0060>

Muhaemin, A., &Wiliasih, R. (2016). Analysis of Factors Affecting the Profitability of Sharia People's Financing Banks in Indonesia. *Nisbah Journal*, 2(1), 180-206. <http://ojs.unida.ac.id/index.php/JN/article/view/255>.

Muhammad, R., &Triharyono, C (2019). Analysis of Islamic Banking Financial Performance Before, During and After Global Financial Crisis. *Islamic Journal of Economics and Finance*, 5(2), 80-86. <https://doi.org/10.20885/JEKI.vol5.iss2.art5>

Nasution, Z. (2020). Profit efficiency development of Islamic Banking using stochastic frontier approach. *Journal of Islamic Economics and Finance*, 6(1), 55-63. <https://doi.org/10.20885/JEKI.vol6.iss1.art6>

Financial Services Authority. 2021. Monthly Sharia Banking Statistics List. Retrieved February 20, 2021

Othman, J., & Asutay, M. (2018). Integrated early warning prediction model for Islamic banks: The Malaysian case. *Journal of Banking Regulation*, 19(2), 118–130.

Rahman, A. F., &Rochhmanika, R. (2012). Effect of Buy and Sell Financing, Profit Sharing Financing, and Non Performing Financing Ratio to Profitability of Sharia Banks in Indonesia. *Iqtishoduna, Journal of Islamic Economics and Business*, 8(1), 27-53. <https://doi.org/https://doi.org/10.18860/iq.v0i0.1768>

Rahman, T., &Fatmawati, K. (2020). The Influence of Financial Ratios on Non Performing Financing of The Sharia Rural Banks of Special Regions of Yogyakarta (BPRS DIY) Period 2015-2018, *Asian Journal of Islamic Management*, 2(1), 25-35. <https://doi.org/10.1108/AJIM.vol2.iss1.art3>

Romdhoni, A. H., &Yozika, F. El. (2018). The Effect of Mudarabah, Musyarakah and Ijarah Financing on The Profitability of Bank Muamalat Indonesia. *Scientific Journal of Islamic Economics*,4(3), 177-186. <https://doi.org/10.29040/jiei.v4i03.314>

Sahara, A. Y. (2013). Analysis of the Effect of Inflation, BI Interest Rate, and Gross Domestic Product on Return on Assets (ROA) of Sharia Banks in Indonesia. *Journal of Management Science (JIM)*, 1(1), 149–157.

Setiawan, U.N.A., &Andriani, A. (2016). Effect of Third Party Funds (DPK), Capital Adequacy Ratio (CAR), and Non Performing Financing (NPF) on Profitability of Sharia Banks with Financing as Intervening Variables, *Diponegoro Journal of Management*, 5 (4), 1-11.

Shahri, N. A., & Harjito, D A. (2020). The effect of financing using the principle of profit-loss sharing on profitability level of commercial Islamic bank registered in Bank Indonesia, *Asian Journal of Islamic Management*, 2(1), 46-58. <https://doi.org/10.1108/AJIM.vol.2.iss1.art5>

Solarin, S. A., Hammoudeh, S., & Shahbaz, M. (2018). Influence of economic factors on disaggregated Islamic banking deposits: Evidence with structural breaks in Malaysia. *Journal of International Financial Markets, Institutions and Money*, 55, 13–28.

Sumarlin. (2016). Analysis of the Effect of Inflation, CAR, FDR, BOPO, and NPF on Sharia Banking Profitability. *Assets, Journal of Economics, Management and Accounting*, 6.36, 296-313.

Tumewang, Y.K., Nugrohowati, R.N.I., &Musta'in, J.L. (2019). The impact of macro economy towards profitability of Islamic banks. *Asian Journal of Islamic Management*,1(2), 101-108. DOI: 10.1108/AJIM.vol1.iss2.art4

Ubaidillah. (2016). Analysis of Factors Affecting The Profitability of Sharia Banks in Indonesia. *Journal of IslamicEconomics*, 4(1), 151–88.

Wibowo, E. S., & s. Syaichu, M. (2013). Analysis of the Effect of Interest Rates, Inflation, CAR, BOPO, NPF on Profitability of Sharia Banks. *Diponegoro Journal of Management*, 2(2), 10-19.

Wildan, et al. (2021). Macroeconomic Factors Affecting Natural Gas Export Management. *International Journal of Energy Economics and Policy*, 11(1), pp. 639-644

Yusuf, M. Y., &Mahriana, S. (2016). Factors Affecting the Profitability Level of Sharia People's Financing Banks (BPRS) in Aceh, *Iqtishadia: Journal of Islamic Economic and Business Studies*, 9(2): 246. <https://doi.org/10.21043/iqtishadia.v9i2.1731>.