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Analysis of the Effect of Financing on the Profitability of Islamic Commercial Banking in 2016-2020

Aguk Triyanto[1*], Imam Mukhlis[1]

[1] Development Economy Program Study, Faculty of Economy and Business, Universitas Negeri Malang, Malang, Indonesia

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Corresponding author:
Aguk Triyanto

E-mail address:
aguk.triyanto.1804326@students.um.ac.id

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ABSTRACT

This study was conducted to determine the effect of mudharabah, musyarakah, murabahah, and non-performing financing (NPF) financing on the profitability of sharia commercial banks registered with the Financial Services Authority (OJK) for the 2016-2020 period. The analysis used in this study uses vector error correction models (VECM) analysis techniques. The results of this study indicate that in the short term there is only one significant variable on return on assets (ROA), namely the NPF variable. Meanwhile, the results of the long-term analysis show that the mudharabah and NPF variables have a significant effect on ROA at the 5% level. Meanwhile, the musyarakah and murabahah variables have no significant effect on ROA. Meanwhile, the impulse response function (IRF) of the mudharabah, musyarakah and murabahah variables have a positive and negative effect, while the NPF variable has a negative effect. For FEVD the variable that has a major contribution to ROA is mudharabah financing, followed by murabahah and NPF, then the last contribution is the musyarakah variable.

1. Introduction

Banking is a financial institution that has a role as an intermediary between the owner of capital and the recipient. In Indonesia, banks are divided into two types, namely conventional banks and Islamic banks. Banks with a sharia system were formed to avoid interest and emphasize a profit-sharing system.[1] Indonesia which is the majority of the people are Muslims, of course, this has a very big opportunity for the development of Islamic banking in Indonesia. Sharia Bank is a financial intermediary institution that has the potential and can compete and make sharia banking performance is better and more efficient than banks with systems conventional banks as financial institutions must be able to mediate institutionally and play a very roles important to the state, especially to improve an economy.

The improvement and development of Islamic banking as a financial institution in recent years has experienced. The fairly good and significant increase is proven that in 2016 Islamic commercial banks had total assets of 254,184 billion while in 2020 Islamic commercial banks had total assets of 411,461 billion.[2]

The operational principles of Islamic banking financing transactions use three systems, namely with the rules in the form of profit-sharing (mudharabah and musharaka), with rules and regulations sell buy (murabaha, etc.), and use the rental system (ijarah). This financing is a transaction that is mostly carried out in the system, especially for sharia general banking products. A study states that The high level of profitability is in line with the high level of financing management carried out and the higher the level of financing given the greater the risk that will be accepted.[3]

Financing products run by banks are a potential indicator of the many many factors related to the increase in assets with the many profitabilities obtained by Islamic banking. The results of the financing operations will be rewarded with profits and will increase revenue. The indicator to see if a bank has a good or bad performance in its activities is to look at the level of profitability.[4,5] Profitability is a ratio or benchmark of a company in seeking profit.[6] The more profit or profit obtained from the operations carried out indicates the successful performance of the banking sector. The profitability of a bank can be seen from the level of return on assets (ROA). ROA is used herein to assess bank performance to get profit or profit from customer funds that have been deposited in the islamic bank Distribution of financing products to customers or companies can pose a risk of non-performing financing that can harm the bank.

Previous research stated that mudharabah financing affects profitability significantly.[7] Mudharabah financing has no effect, murabahah has a positive and significant effect, and musyarakah has a positive and significant effect on the profitability of Islamic banking.[8,9] This study aims to determine the long-term and short-term effect of the variable mudharabah, musyarakah, murabahah, and non-performing financing (NPF) on the return on assets (ROA) of Islamic banking in 2016-2020.

Profitability is defined as the ability of a company to generate profits, one of which is measured by using the company's return on assets (ROA).[10] Return on assets (ROA) in this case is used in assessing the performance of banks in generating a profit from customer funds that have been deposited with Islamic banks. ROA can project past, present, and future profits. The high and low levels of ROA in Islamic banking will determine the level of profit obtained and the success in using the assets owned by the Islamic bank. Profit here is an indicator to assess the performance of a company both in the past and in the future.

Financing is planned funds provided by institutions or individuals to other parties that are useful for needs and investments. Funds given to the parties concerned must be planned and made for production needs. Mudharabah financing is profit-sharing financing that occurs between the owner of the capital (mudarib) and the recipient of the capital (syahibul maal). According to DSN fatwa No. 115/DSN-MUI/IX/2017 the owner of the capital provides all of the capital 100% and hands it over to the recipient of the capital for business activities whose results are following the mutual agreement.

The bank as the owner of capital will supervise and guide the customer as the recipient of capital, but will not interfere in the business being run. Profit-sharing for mudharabah according to mutual agreement at the beginning of the agreement. The distribution of funds with mudharabah contracts carried out by banks will have the potential to increase the income generated from the cooperation on the financing. The profits obtained by the Islamic bank will certainly affect the profitability of Islamic banking. The bank will get a profit or profit from the financing ratio agreement with the mudharabah contract.[12]

According to the MUI fatwa, musyarakah financing is financing that is carried out when both parties, where the bank and the customer deposit capital together with the profits obtained, are divided according to the paid-in capital in the agreement that was agreed at the beginning. The benefits of musharaka financing, namely the bank will enjoy an increase in a certain amount when the customer's profits increase which results in increased bank profitability. Simultaneously, musyarakah financing has a significant effect on the profitability of Islamic banking. If the greater the musharaka financing is carried out by the bank, the profit of the Islamic bank will be greater and will result in profitability.[13]

Murabahah is a form of sale and purchase contract used between a bank and a customer, provided that the cost of goods and profit or margin is agreed upon in advance, then in its application, the seller must be transparent about the purchase price of the goods. Buying and selling activities can also be carried out by transferring property or transferring ownership of goods.

Goods are traded with the condition that the seller will ask for the excess of the purchase price of an item, where the difference between the purchase price and the profit is called the profit margin. Murababah financing provides benefits to Islamic banking with a margin or mark-up that has been agreed upon by the bank and the customer from the start so that it has the potential to increase profitability.

Good management of murabahah financing can certainly affect the level of profitability of Islamic banking in Indonesia. Murabahah financing carried out by Islamic banking has a positive and significant impact on profitability or return on assets (ROA).[1,3]

Non-performing financing (NPF) is the ratio of non-performing financing to the total financing undertaken. Financing problems can arise from customers who have difficulty repaying either intentionally or not being able to pay off the loan. The unfavorable impact generated by the NPF is that banks suffer losses due to the loss of disbursed financing to reduce profits, the more financing and management carried out by banks is not good, it will have an impact on increasing non-performing financing.

2. Methods

This research was conducted using quantitative methods. The type of data used for this research uses secondary data by taking data from www.ojk.co.id which is the website of the Financial Services Authority (OJK) from 2016 to 2020. Data analysis uses a vector error correction model (VECM) using Evies 10 software to test the variables, namely return on assets (Y), mudharabah (X1), musyarakah (X2), murabahah (X3), and NPF (X4). This research was conducted in several stages including;

Stationary test or unit root test using augmented dikey-fuller (ADF) to determine the non-stationary data. The data is said to be stationary if the profitability value is less than 0.05. The ADF test can be formulated as follows:

$$\Delta yt = a_0 + Zt + a1Ye \quad = \sum_{i=1}^{p} \alpha i \Delta Yt - 1 + \varepsilon\tau$$

The cointegration test uses the Johansen method of detection with a degree of confidence of 5%. The formula used is as follows.

$$\lambda_{Trace}(r) = -T \sum_{i=r-1}^{g} in\ (1 - \lambda_i)$$

$$\lambda_{Max}(r, r-1) = -T\ in\ (1 - \lambda_{r-1})$$

VECM estimation test, in carrying out this test, first perform a cointegration test, if there is cointegration between variables, a VECM test can be carried out and if there is no cointegration, a VAR test is performed.

$$\Delta Y_t = \alpha e_{t-1} - \beta_1 \Delta y_{t-1} - \beta_2 \Delta y_{t-2} - \cdots - \beta_p \Delta y_{t-p-1} - \varepsilon_t$$

Test the impulse response function (IRF) and variance decomposition (VD) to see the future effect.

3. Results and discussion

Stationary test

Table 1. Stationarity test results

Variable	Level			Firs Different		
	ADF t-Statistics	Profitability	Description	ADF t-Statistics	Profitability	Description
ROA	-1.697851	0.4269	non-stationary	-7.61287	0.0000	stationary
Mudharabah	-0.657378	0.8486	non-stationary	6.455378	0.0000	stationary
Musyarakah	1.023131	0.9964	non-stationary	-3.79	0.0057	stationary
Murabahah	-0.677672	0.844	non-stationary	-8.06295	0.0000	stationary
NPF	-2.068162	0.2580	non-stationary	-4.576649	0.0005	stationary

Source: EVEWS 10 output (processed data)

The first test was conducted to determine the stationarity of the data to determine whether the variables obtained were stationary or not. In this study, the data stationarity test was carried out using an augmented dickey-fuller (ADF) until the data was said to be stationary. Based on table 1, the results of the unit root test above by looking at the augmented Dicky Fuller Test (ADF test), it can be seen that the profitability of mudharabah, musyarakah, murabahah, and NPF financing is not stationary at the level because it is greater than 0.05 in all variables. Because the data will be considered stationary if the degree of profitability is less than the critical value of 5% (0.05). To avoid the problem of lancing data regression, it is necessary to carry out further tests at the level of "1" difference from the initially non-stationary data to be stationary so that the next step can be taken. Through the process of data differentiation using the ADF integration test, the results obtained first difference with stationary data at = 1% (0.05) and it can be seen that all variables have ADF t-statistics > critical value, so this data is suitable for use in vector error correction model (VECM).

Cointegration test

Table 2. Cointegration test results

Hypothesized No, Of CE(s)	Eigenvalue	Trace Statistics	0.05 Critical Value	Prob**
None*	0.786470	151.132	76.97277	0
At most 1*	0.536727	80.10909	54.07904	0.0001
At most 2*	0.475481	44.71489	35.19275	0.0035
At most 3	0.182977	15.03231	20.26184	0.2245
At most 4	0.117239	5.736241	9.164546	0.2121

The next step is to perform a cointegration test to see if there is a reciprocity of all the variables. The criteria used in cointegration testing are based on the level of trace statistics, if the trace statistic shows a higher number than the critical value of 5% or 0.5, it can be ascertained that the integrated amount is accepted and can be known by the system. So that the variables used have a long-term relationship between variable 1 and the others. From the Johansen cointegration test, it is known that all the variables used have long-term cointegration so that further testing of the Vector Error Correction Model (VECM) can be carried out.

Vector error correction model (VECM) test

Table 3. VECM estimation test

Long-term

Variable	**5.332067**	**t-statistic**
Mudharabah (-1)	5.332067	[4,09687]
Musyarakah (-1)	0.095326	[1.15620]
Murabaha (-1)	0.224947	[1.81862]
NPF (-1)	-4.093984	[-3.33319]

Short-term

Cointegration		
D(NPF(-2))	-0.337999	[-2.72284]
D(NPF(-3))	-0.341096	[-2.72034]

Source: Evews 10 (processed data)

From the test results can be obtained the results of the estimated VECM equation as follows;

D(ROA) = -48.44075 (ECT) + 5.332067((MUDHARABAH(-1)) + 0.095326 (MUSYARAKAH(-1)) + 0.224947(MURABAHAH(-1) + (-4.093984(NPF(-1)) + 0.150837 D(MUDHARABAH(-1))+0.246225D(MUDHARABAH(-2)) + 0.116644 D(MUDHARABAH(-3)) + -0.183264D(MUDHARABAH(-4)) + 0.010659 D(MUSYARAKAH(-1)) + -0.009685D(MUSYARAKAH(-2)) + 0.02546+ D(MUSYARAKAH (-3)) + 0.010675 D(MUSYARAKAH(-4)) +-0.017443 D(MURABAHAH(-1)) + -0.023446 D(MURABAHAH(-2)) + -0.021259 D(MURABAHAH(-3)) + 0.00967 D(MURABAHAH(-4)) + -0.01541 D(NPF(-1)) + -0.337999 D(NPF(-2)) + - 0.341096 D(NPF(-3)) + 0.151498 D(NPF(-4)) + 0.001816

A data is said to be significant in influencing other variables occurs if the t-table is smaller than the t-statistics with a significance used of 5% [α= 5%] is 2.00487 which means (t-static > 2.00487) Based on the results and the VECM test equation above, it can be said that there is one variable known to have a significant effect on ROA in the short term, namely the variable NPF which has a significant negative effect on lags 2 and 3. In lags 2 and 3, the NPF variable effect by showing the t-statistic numbers of -2.72282 and -2.72034 which means that if the NPF has decreased by 1 percent in the previous period then it will also have an impact on the decrease in the profitability of Islamic banks by [-0.337999] and [-0.341096] in the next 2 or 3 periods. Then the mudharabah, musyarakah, and NPF variables from lag 1 to lag 4 do not significantly affect profitability in the short term in Islamic banking.

Based on table 3, it is found that the long-term effect of all variables affects return on assets (ROA), but there are only two significant variables, namely the NPF variable which has a negative significant effect and the mudharabah variable has a positive significant effect on the ROA of Islamic banking. with a t-statistic of 4.09687, for a long-term estimate with a positive mudharabah financing coefficient value of 5.332067, which means that if there is an increase in financing by 1 percent, it will increase ROA by 5.332067 percent. Large mudharabah financing will certainly provide good profits for Islamic banking, if carried out in good conditions. This is consistent with previous research that mudharabah has a positive impact on ROA.[5]

The next variable is musharaka which has a positive influence on the profitability of Islamic banking. The test results above can be seen that the t-statistic value obtained is 1.15620 with a long-term estimated value of 0.095326. it can be explained that when the musyarakah variable experiences an increase in financing by 1 percent, it will increase the ROA by 0.095326 percent. This is following research from Dita, et al (2017) it is known that there is a positive influence caused by musharaka on the profitability of banking. In its application, musyarakah financing in distribution is more focused on the real sector so that it can close the possibility of being channeled for consumptive interests and productive businesses. The level of musyarakah financing will affect profitability, the greater the distribution issued with collective stability, the higher the level of risk and will have a good effect on Islamic banking.

Any increase experienced by the murabahah financing variable will cause an increase in profitability or ROA *(return on assets)* and vice versa if it decreases it will also cause a decrease in profitability or ROA. From the test data above, it shows a positive effect on profitability with the t-statistic obtained by [1.81862] and obtaining a value of 0.224947 which means that if there is an increase of 1 percent in the murabahah financing variable, it will increase the increase in profitability or ROA by 0.224947. Financing with a murabahah contract has a higher level than another financing, but the higher the demand, the greater the risk.

Then for the NPF variable which has a negative effect in the long term with a t-statistic value of -3.33319, for the long-term estimation with a negative NPF value of -4.093984, which means that if there is an increase in the NPF of 1 percent, it will reduce the ROA by -4.093984 percent. This is following previous research which states that NPF has a negative effect which will have a negative effect on ROA. The higher the level of NPF, which means the level of non-performing financing is high, so it will have a negative impact on ROA. So it is necessary to increase the precautionary principle and be more selective in the distribution of financing to customers.

Impulse response function analysis (IRF)

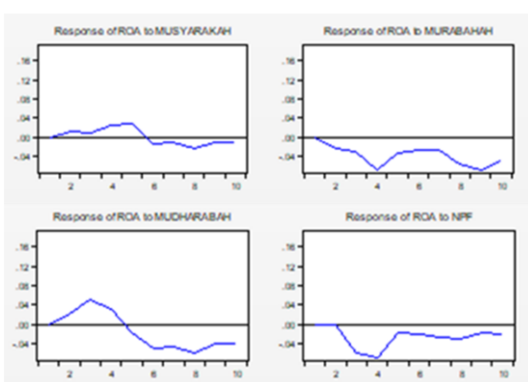

Figure 1. Impulse response function analysis

This IRF analysis is done to see how much shock or shock experienced by one variable with another variable. From the graph above, it can be explained that there is a surprise response from ROA *(return on assets)* to the mudharabah, musyarakah, murabahah, and NPF variables. The response was given to the mudharabah financing variable on positive ROA until period 4 can be seen from the blue line shown above the horizontal line with a number of 0.032267 and experiencing a negative response until the end of the period with a figure of -0.04016 below the horizontal line on the graph. This can explain that when mudharabah financing increases it will increase the return on assets of Islamic banking.

In the musyarakah variable, the shock given to the ROA variable caused a positive response in the period up to 5 of 0.026813 and experienced a negative response until the last period with a number of -0.01058 which means that if the musyarakah variable has increased it will increase the return on assets, whereas if it decreases it will also increase. will have an impact on lowering the return on assets.

Meanwhile, for the murabahah and NPF variables, the response given by the ROA variable is negative from the beginning to the end of the period. For the murabahah variable, negative with a figure of -0.06863, this can be interpreted that a high rate of increase in murabahah will have an impact on the level of profitability or ROA. Meanwhile, the NPF variable caused a negative response from the beginning to the end of the period with a figure of -0.2787. This can be interpreted that the lower the NPF level, the higher the rate of return on assets.

Analysis of variance decomposition

Table 4 shows the test results of variance decomposition. The results of this test show the movement and proportion of profit-sharing financing variables (mudharabah and musyarakah), with buying and selling (murabahah), and non-performing financing (NPF) by looking at the effects of shocks that can be seen in the current and future periods. In the first period from the table above, it shows that there is no influence given by the 4 variables on return on assets (ROA) because the value that affects ROA itself is 100%.

From the second period to the tenth period the ROA variable is still in a superior position compared to other variables. The mudharabah variable has an effect on Return On Assets of 11.4% at the end of the 10th period. Mudharabah financing has a large influence value because from the beginning of period 1 to the end of period 10 continued to increase until at the end of the period it got a figure of 11.47%.

Then for the value of the musyarakah variable that has an influence from period 1 to period 10, it is more likely to fluctuate to Return On Assets (ROA) of 2.5% at the end of the period. For the murabahah variable from period 1 to period 7 it tends to fluctuate and from the eighth to the 10th period it has a good increase with the end of the period obtaining a figure of 9.4%. Furthermore, for the musyarakah variable from the beginning of the period to the 10th period, it tends to fluctuate and affect the Return On Assets with a value of 7.2% at the end of the period. The size of the influence of the variable can be seen from the movement caused by the up and down movement from the beginning to the end of the period.

Table 4. Variance decomposition test results

Variance decomposition using cholesky (d.f adjusted) factors variance decomposition of ROA:

Period	SE	ROA	Mudharabah	Musyarakah	Murabahah	NPF
1	0.191375	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.249918	98.03864	0.843894	0.234454	0.879389	0.003618
3	0.276755	89.07332	3.791153	0.237003	2.416665	4.481860
4	0.302024	78.39691	4.266251	1.630903	6.455277	9.250656
5	0.312528	77.38720	4.129489	3.120766	6.457210	8.905337
6	0.332001	76.44040	6.367184	2.805073	6.078595	8.308752
7	0.348247	75.62776	7.727648	2.613097	5.839350	8.192147
8	0.370104	72.44472	10.23493	2.423955	7.024234	7.872162
9	0.386607	70.31584	10.83730	2.500684	8.892140	7.454042
10	0.399403	69.28572	11.47180	2.507019	9.454717	7.280748

Source: output evews 10 (processed data)

4. Conclusion

Analysis of the short-term effect on return on assets (ROA) there is only one negatively significant variable, namely the NPF variable which affects on lag periods 2 and 3. The mudharabah and NPF have a significant effect on profitability or return on assets at the 5% level. In the variance decomposition test, the variable that has a considerable influence or contribution to the ROA of Islamic commercial banking in Indonesia is mudharabah, then followed by the NPF, musharakah, and Murabahah variables.

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