ANALYSIS OF INTERNAL AND EXTERNAL DETERMINANT VARIABLES TOWARDS PROFITABILITY OF ISLAMIC BANKING IN INDONESIA (2014-2020)

Febri Ramadhani¹

**Universitas Airlangga, Surabaya, Indonesia
febri.ramadhani-2019@feb.unair.ac.id**

Muhammad Rizkan²

**National Dong Hwa University, Hualien, Taiwan
rizqonie2014@gmail.com**

Abstract

Indonesia is a country that adheres to a dual banking system, namely conventional and Islamic Banking. The growth rate of Islamic banking in the last three years is higher than conventional banking. However, in total assets, Islamic banking is still far behind conventional banking. Therefore, it is necessary to study further the performance of Islamic banking reflected in its profitability. So, it becomes an alternative input in determining Islamic banking policies. This study aims to know the factors affecting the profitability (ROA) of Islamic Banking in Indonesia. The data used are the 2014-2020 monthly data in the amount of 79 data. The method used in this study is a Vector Error Correction Model (VECM) to determine the effect of long-run and short-run relationships. The results of the study showed that the long-run relationship of the NPF variable affected and was significant positive toward ROA, CAR affected and was significant negative toward ROA, while the inflation variable had a negative relationship and not significant toward ROA. The results of the short-run relationships showed that the NPF and CAR variables positively affected ROA, while the inflation variable did not significantly affect the ROA.

Keywords: Profitability, NPF, CAR, Inflation.

INTRODUCTION

The banking system in Indonesia using a dual-banking system, namely Islamic and conventional banking (Rohendi, 2010). Islamic banking in Indonesia continues to experience an increase in assets every year. However, the total asset ratio is still far less than conventional banking. Based on data from the Financial Services Authority (OJK) it was noted in 2020 the total assets of conventional banking reached Rp 7,387 trillion. Meanwhile, the total assets of Islamic banks have only reached Rp 561 trillion.

In addition, based on data from the Financial Services Authority (OJK, (SNLKI) Strategi Nasional Literasi Keuangan Indonesia, 2020) in 2020, it was found that the level of literacy and inclusion of Islamic finance in Indonesia is still far from optimal. It was found that 100 percent of the Muslim population, only 9.1 percent of people who understand Islamic financial services or do not reach 10 percent. Of course, this is a concern to see that the majority of the population in Indonesia is Muslim. Their conditions give the sense that conventional banking has a greater opportunity to grow and gain profitability to be able to provide notes for Islamic banking in Indonesia to have a competitive nature and competitiveness to improve their financial performance.

Performance is an illustration of the success of banking in allocating all forms of funds obtained through activities carried out by banking (Haryanti, 2018). The benchmark in banking financial performance is the ratio of Return On Assets (ROA). This is because the ROA ratio reveals the final result (profit) of all operational decisions made by banking management. Therefore, the study aims to know the factors affecting the profitability of Islamic banking in Indonesia, both in the long-term or short-term, to grow and compete. The determinants of profitability use internal variables, namely the health condition of banking using Non-Performing Financing (NPF) and Capital Of Ratio (CAR). While the external variable using inflation.

REVIEW OF LITERATURE

Return on Assets (ROA)

Return on Assets (ROA) is a ratio used to measure the company's ability to generate profit on some assets owned by the business unit. The greater the ROA, the greater the overall level of profit achieved by the bank and the better the position of the company in terms of asset use. In another theory defines that ROA is the ability of the capital invested in all assets to generate a net (Riyanto, 2001).

Many variables affect the Return on Assets (ROA). In internal banking conditions, ROA is generally influenced by CAR, BOPO, NPF, FDR, etc. Meanwhile, external factors are usually macro variables such as inflation, interest rates, exchange rates, etc. In this study, the variables of NPF, CAR, and inflation were selected.

Capital Adequacy Ratio (CAR)

According to (Dendawijaya, 2009), the capital adequacy ratio is a performance ratio used by banking to show capital adequacy and then used to support assets and contain risks when used as credit or financing by banking. A good level of capital adequacy is one of the beliefs of customers in saving their funds in the bank. The higher the capital adequacy ratio, the higher the bank's profitability.

Research by Nuriyah et. al (2018) examines the effect of CAR, TPF, and NPF on profitability. The method used is the Vector Error Correction Model (VECM). The result is that in the short run CAR, TPF and NPF have a positive effect on the profitability of Islamic banking. In the long run, CAR has a significant negative effect, and TPF, NPF has a significant positive effect on the profitability of Islamic banking. Then research by Aryani (2010) regarding the effect of CAR, FDR, BOPO, and FDR and NPF toward the profitability of Islamic banking. Where the results show CAR in the short run has a significant positive effect on profitability (ROA).

Non-Performing Financing (NPF)

Non-Performing Financing (NPF) is one of the risks in banking in the form of non-performing financing or bad loans. NPF is closely related to the financing disbursed by Islamic banking to their customers (partners). If the NPF shows a low value, it is expected to increase profits and indicate that non-performing financing is also decreasing. Conversely, if the NPF value is high, it indicates an increase in non-performing financing.

Research has been conducted by (Suprpto, 2015) on the factors that affect the Return on Assets (ROA) in Mu'amalat Islamic banks. The variables used are ROA, CAR, NPF, BOPO, and FDR, while the method uses VECM. The results show that in the short run CAR and NPF do not affect ROA. While BOPO and FDR have a significant negative effect on ROA. In the long run, CAR does not affect profitability, while NPF, BOPO, and ROA have a significant negative effect on profitability.

Inflation

Inflation is when prices increase continuously and occur not only in one good (Mankiw, 2006). In this case, even though there is an increase in the price of goods but not in the same percentage, but it occurs within a certain period, it can still be called inflation. Meanwhile, it cannot be called inflation if there is an increase in the price of goods in a large percentage but only once. Inflation greatly affects the economy, both the real sector and the financial sector. In theory, when inflation rises, the impact on profitability will decrease.

Research has been conducted by (Rahmawati, 2016) on micro and macro variables toward the profitability of Islamic banking. The variables used are FDR and BOPO for the micro economy, while the macro variables use inflation, BI rate, IPI, and JCI. The method used is VECM. Where the results of the study show that in the short run for the micro-economic variables, namely FDR and BOPO, there is no significant effect. Meanwhile, the long-run effect of IPI, Inflation, and JCI have a significant negative effect on ROA. Then the next research by (Sumarlin, 2016) is to analyze the effect of inflation, CAR, FDR BOPO, and NPF on the profitability of Islamic banking. The results showed that the variables ROA, NPF, CAR have a significant negative effect on ROA. Meanwhile, negative inflation is not significant and positive FDR is not significant.

RESEARCH METHODS

Types and Sources of Data

In this study, the data used is secondary data in the form of *time series*. The data in this study amounted to 79 monthly data from the period 2014 to 2020 in monthly form. The data are as follows:

Table 1
Monthly Data of ROA, NPF, CAR and Inflation 2014-2020

YEAR	MONTH	ROA (%)	NPF (%)	CAR (%)	INFLATION (%)
2014	January	0.08	3.01	16.76	8.22
	February	0.13	3.53	16.71	7.75
	March	1.16	3.22	16.21	7.32
	April	1.09	3.49	16.68	7.25
	May	1.13	4.02	16.85	7.32
	June	1.12	3.91	16.21	6.7

		July	1.05	4.31	15.62	4.53
		August	0.93	4.58	14.73	3.99
		September	0.97	4.67	14.54	4.53
		October	0.92	4.75	15.25	4.83
		November	0.87	4.86	15.66	6.23
		December	0.81	4.33	16.11	8.36
	2015	January	0.88	5.56	14.16	6.96
		February	0.78	5.83	14.38	6.29
		March	0.69	5.49	14.43	6.38
		April	0.62	5.21	14.51	6.79
		May	0.63	5.44	14.37	7.15
		June	0.51	5.09	14.09	7.26
		July	0.51	5.31	14.47	7.26
		August	0.46	5.31	15.05	7.18
		September	0.49	5.14	15,15	6.83
		October	0.51	5.16	14.96	6.25
		November	0.52	5.13	15.31	4.89
		December	0.49	4.84	15.02	3.35
	2016	January	1.01	5.46	15,11	4.14
		February	0.81	5.59	15.44	4.42
		March	0.88	5.35	14.91	4.45
		April	0.81	5.48	15.43	3.5
		May	0.16	6.17	14.78	3.33
		June	0.73	5.68	14.72	3.45
		July	0.63	5.32	18.86	3.21
		August	0.48	5.55	14.87	2.79
		September	0.59	4.67	15.43	3.07
		October	0.46	4.81	15.27	3.31
		November	0.67	4.68	15.78	3.58
		December	0.63	4.42	15.95	3.02
	2017	January	1.01	4.72	16.99	3.49
		February	1	4.78	17.04	3.83
		March	1.12	4.61	16.98	3.61
		April	1.1	4.82	16.91	4.71
		May	1.11	4.75	16.88	4.33
		June	1.1	4.47	16.42	4.37
		July	1.04	4.5	17.01	3.88
		August	0.98	4.49	16.42	3.82
		September	1	4.41	16,16	3.72

		October	0.7	4.91	16.14	3.58
		November	0.73	5.27	16.46	3.3
		December	0.63	4.77	17.91	3.61
2018		January	0.42	5.21	18.05	3.25
		February	0.74	5.21	18.62	3.18
		March	1.23	4.56	18.47	3.4
		April	1.23	4.84	17.93	3.41
		May	1.31	4.86	19.04	3.23
		June	1.37	3.83	20.59	3.12
		July	1.35	3.92	20.41	3.18
		August	1.35	3.95	20.46	3.2
		September	1.41	3.82	21.25	2.88
		October	1.26	3.95	21.22	3.16
		November	1.26	3.93	21.39	3.23
		December	1.28	3.26	20.39	3.13
2019		January	1.51	3.39	20.25	2.82
		February	1.31	3.44	20.31	2.57
		March	1.45	3.44	19.85	2.48
		April	1.51	3.58	19.61	2.83
		May	1.55	3.49	19.62	3.32
		June	1.6	3.36	19.56	3.28
		July	1.61	3.36	19.72	3.32
		August	1.64	3.44	20.36	3.49
		September	1.65	3.32	20.39	3.39
		October	1.65	3.49	20.54	3.13
		November	1.67	3.47	20.48	3
		December	1.73	3.23	20.59	2.72
2020		January	1.88	3.46	20.29	2.68
		February	1.85	3.38	20.47	2.98
		March	1.86	3.43	20.36	2.96
		April	1.55	3.41	20.47	2.67
		May	1.44	3.35	20.62	2.19
		June	1.4	3.34	21.21	1.96
		July	1.38	3.31	20.93	1.54

Source: Financial Service Authority and Bank Indonesia, 2020 (processed)

Data in this research were retrieved from the Financial Service Authority (OJK, 2019) and (Indonesia, 2020). The variables used were return on Asset (ROA), non-performing financing (NPF), capital adequacy ratio (CAR) as internal variables, and inflation as an external variable.

Data Analysis Method

This research utilized the Vector Error Correction Model (VECM) to explain the short-run and long-run relationship. The first step of this method was conducting a stationary test to avoid false regression. The stationary test utilized was a unit root test. The unit root test in this research utilized the Augmented Dickey-Fuller test. Furthermore, for no autocorrelation, the next step to conduct was an optimal lag test.

To determine the relationship of every variable towards others, the granger causality test was carried out. Furthermore, a cointegration test was carried out to study the long-run equilibrium, in which the VECM test would be carried out if any cointegration occurred (Firdaus, 2011). Then, a VECM test might be carried out, wherein this research the following models were utilized:

$$ROA_t = \beta_0 + \beta_1 NPF_1 + \beta_2 CAR_t + \beta_3 INFLASI_t + et \dots (1)$$

Equation (1) above was used during the unit root test, in which the result was non-stationary so that equation (2) below would be used:

$$ROA_t = \beta_0 + \beta_1 \Delta NPF_1 + \beta_2 \Delta CAR_t + \beta_3 \Delta INFLASI_t + et \dots (2)$$

In the aforesaid equation, ROA is the dependent variable, while NPF, CAR, and INFLATION are the independent variables. After the models were made, the following step was data processing. The data processing step in this research used the E-Views 10.

RESULTS AND DISCUSSION

Stationary Test

The first step to obtaining the VECM estimation was conducting a stationary test. Data tested was every variable in this research, both the dependent variable and independent variable. The method utilized in this stationary test was the Augmented Dickey-Fuller (ADF) test using a significance level of 10%. If the t-ADF values are less than the McKinnon critical values, it can be concluded that the data used are stationary or not containing unit root (Basuki, 2015)

Table 2
Stationary Data Test Result at Level

Variable	Trend and Intercept			Data Test Result
	Level			
	Prob	ADF	McKinnon 5 %	
ROA	0.0835	-2.671988	-2.899115	Non-stationary
NPF	0.5445	-1.467.623	-2.900670	Non-stationary
CAR	0.8698	-0.572274	-2.899619	Non-stationary
INFLASI	0.2531	-2.080.224	-2.899115	Non-stationary

Table 2 contains the stationary data test result at the level. It can be seen that the ROA, NPF, CAR, and INFLASI variables are non-stationary. Such state is determined from the t-statistical ADF probability values of ROA, NPF, CAR, and inflation variables in which the values are 5% greater than the McKinnon values (t-statistical ADF > McKinnon value of 10%). Therefore, the unit root test was increased at the first difference level.

Table 3
Stationary Data Test Result at First Difference Level

Variable	Trend and Intercept			Data Test Result
	Level			
	Prob	ADF	McKinnon 5%	
D(ROA)	0.0001	-10.28994	-2.899619	Stationary
D(NPF)	0.0010	-4.261.053	-2.587.691	Stationary
D(CAR)	0.0001	-12.480.420	-2.899619	Stationary
D(INFLASI)	0.0000	-7.007.035	-2.899619	Stationary

Based on the unit root test result, it can be seen that all variables in this research are stationary at the first difference level. This is because the t-statistical ADV values of all variables are less than the McKinnon values of 10% (t-statistical ADF < McKinnon value of 10%). Therefore, the next step was then carried out.

Optimal Lag Test

The optimal lag length test was important to conduct for reducing autocorrelation in the VECM system. The problem of autocorrelation was expected not to occur due to the optimal lag length. The optimal lag test results are as follows:

Table 4
Optimal Lag Test Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-4.662.459	NA	6.651637	13.24636	13.37384*	13.29706*
1	-4.500.557	30.10010	6.622228	13.24101	13.87838	13.49447
2	-4.331.408	29.54149	6.483177*	13.21523*	14.36251	13.67147
3	-4.195.059	22.27676	7.008018	13.28186	14.93903	13.94086
4	-4.092.458	15.60698	8.414468	13.44354	15.61062	14.30532
5	-3.932.043	22.59365	8.703548	13.44237	16.11935	14.50692
6	-3.709.356	28.85515*	7.692222	13.26579	16.45267	14.53311
7	-3.580.188	15.28187	9.056936	13.35264	17.04942	14.82273

From table 4 above, it can be seen that the optimal lag length was located at lag 2. This is because the most (*) mark was located at the lag 2 column, in the amount of 2 (*) marks. After obtaining such a result, the stability test was then carried out for the next step.

Stability Test

The next step was conducting a stability test. This was intended to test the validity of IRF and VDC. The stability test result in this research are as follows:

Table 5
Stability Test Result

Root	Modulus
-0.451017 - 0.448341i	0.635944
-0.451017 + 0.448341i	0.635944
0.183585 - 0.443912i	0.480376
0.183585 + 0.443912i	0.480376
-0.040275 - 0.455256i	0.457034
-0.040275 + 0.455256i	0.457034
0.061096 - 0.080953i	0.101421
0.061096 + 0.080953i	0.101421

A VAR system is stated to be stationary if any of its roots have modulus values that are less than 1 and located within the unit circle. Table 5 above shows the modulus values between 0.101421 – 0.635944 or included in the unit circle. Based on such results, it can be concluded that the VAR model is stable.

Cointegration Test

At this fifth step, a cointegration test was carried out. The cointegration test was intended to determine the long-run relationship of every variable. The condition in the VECM estimation

is the existence of a cointegration relationship therein. If there is no relationship, the VAR model will be utilized. The cointegration test result is as follows:

Table 6
Cointegration Test Result

Hypothesized No. Of CE (s)	Eigenvalue	Trace Statistic	0.05 critical value	Prob.**
None *	0.420175	106.4777	40.17493	0.0000
At most 1 *	0.336884	65.60052	24.27596	0.0000
At most 2 *	0.247239	34.79007	12.32090	0.0000
At most 3 *	0.164613	13.48953	4.129906	0.0003

From table 6 above, it can be seen that the trace statistic value and maximum eigenvalue at $r=0$ were greater than the critical value with significance levels of 1 percent and 10 percent. Based on the aforesaid econometric analysis, it can be seen that those four variables in this research were cointegrated. Therefore, the VECM estimation in this research might be continued to the stability test.

Granger Causality Test

The granger causality test is intended to determine the causal relationship of every independent variable towards the dependent variable. In this research, the causality test was addressed to the causative factors of the occurrence of profitability on Islamic banking in Indonesia, namely NPF, CAR, and inflation, which affected the profitability. The test level used in this causality test was at the level of trust of 10% or 0.10 and the lag length used was 6. The granger causality test results are as follows:

Table 7
Granger Causality Test Result

Null Hypothesis:	Obs	lag 2	
		F-Statistic	Prob.
NPF does not Granger Cause ROA ROA does not Granger Cause NPF	77	12.5687	2.E-05
		0.81997	0.4445
CAR does not Granger Cause ROA ROA does not Granger Cause CAR	77	13.9008	8.E-06
		2.66343	0.0766
INFLASI does not Granger Cause ROA ROA does not Granger Cause INFLASI	77	0.35263	0.7040
		0.78609	0.4595

CAR does not Granger Cause NPF NPF does not Granger Cause CAR	77	8.08894	0.0007
		0.54756	0.5807
INFLASI does not Granger Cause NPF NPF does not Granger Cause INFLASI	77	3.20677	0.0463
		1.35943	0.2633
INFLASI does not Granger Cause CAR CAR does not Granger Cause INFLASI	77	2.94065	0.0592
		2.54501	0.0855

The probability that existed in the granger test result above was important to note. If the probability is greater than 0.05 percent, it can be concluded that no causality occurs among the variables. Therefore, from the significant test results, it can be concluded that the NPF variable affects the ROA variable (0.00002), but otherwise, the ROA variable does not affect the NPF variable so that a unidirectional relationship occurs. The CAR variable affects the ROA variable (0.000008), but otherwise, the ROA variable does not affect the CAR variable so that a unidirectional relationship occurs. The CAR variable affects the NPF variable (0.0007), but otherwise, the NPF variable does not affect the CAR variable so that a unidirectional relationship occurs. Also, the Inflation variable affects the NPF variable (0.0463), but otherwise, the NPF variable does not affect the Inflation variable so that a unidirectional relationship occurs. Meanwhile, other variables do not affect.

VECM Estimation Test

This step is to determine the VECM modeling, namely short run to long run. The estimation can be carried out using a prior equation by reading the data processing results. If the t-statistical value is greater than the t-table value, it can be concluded that there is a long-run or short-run relationship. In this research, the Akaike model was selected as model one. The results are as follows:

Table 8
Long-run Relationship Test Result

<i>Long Run</i>		
Variabel	Koefisien	t-statistic
NPF(-1)	0.180239	4.72399*
CAR(-1)	-0.001099	-15.3545*
INFLASI(-1)	0.012189	0.46876

The table above shows the long-run relationship test result, in which the NPF variable has a negative relationship with the ROA variable and has a positive and significant effect on the ROA variable. It means that every 1 percent of NPF increase will cause the increase of ROA by

0.180239. It indicates that the problematic financing in Islamic banking is not the only source of funds to Islamic banking. In addition, it indicates that the financing insurance from Islamic banking is greater than the submitted amount of financing. Therefore, when the inability of returning such financing insurance occurs, it includes the banking profit. It is in accordance with (Suprpto, 2015). Hence, Islamic banking must be more selective in selecting its clients to reduce the NPF.

The CAR variable has a negative relationship with the ROA variable. Meanwhile, such a relationship has a significant effect. It means that every 1 percent of CAR increase will cause the decrease of ROA by -0.001099%. It indicates that the big capital reverse in banking does not warrant the increase of profitability. This requires noting that a high CAR value will cause the occurrence of the idle fund. Therefore, the probability of banking to obtain profit will decrease. In this case, it is important to note so that Islamic banking is capable to create an innovation in distributing funds to productive (real) sectors. Such results are in accordance with (Sumarlin, 2016) and (Nuriyah, 2018).

Meanwhile, the Inflation variable in the VECM test does not affect the ROA variable. This result is in accordance with (Sumarlin, 2016). After studying the long-run relationship, the following results are the VECM test results in the short-run relationship.

Table 9
Short-run Relationship Test Result

<i>Short Run</i>		
Variable	Coefficient	t-statistic
CointEq1	-0.445414	-4.339235*
D(ROA(-1))	-0.026451	-0.292771
D(ROA(-2))	0.143919	1.628221
D(NPF(-1))	0.058282	0.986108
D(NPF(-2))	0.110719	1.976453*
D(CAR(-1))	-0.000656	-2.604703*
D(CAR(-2))	0.000265	1.101096
D(INFLASI(-1))	0.033713	1.094394
D(INFLASI(-2))	-0.025433	-0.831084

Table 9 shows the VECM test result in the short-run relationship. The cointegration value of -0.445414 shows the adjustment from the long run to the short run. In the short run, the first factor affecting the profitability of Islamic banking is the NPF variable at lag 2, which means when the NPF variable increases by 1 percent at one prior period, it will increase the ROA

variable by 1.976453 percent. In addition, the CAR variable at lag 1 also affects the profitability, it means when the CAR variable increases by 1 percent at one prior period, it will increase the ROA variable by -2.604703 percent. These results are in accordance with (Nuriyah, 2018). Meanwhile, other variables do not have a significant effect on the ROA variable. It is known that the internal variables, namely NPF and CAR, in the short-run relationship highly affect the ROA variable. The NPF of Islamic banking must be capable to reduce the problematic financing by being selective in selecting its client for cooperation by considering the 5C and 1S (Character, Capacity, Capital, Condition Collateral, and Sharia). In addition, for the CAR variable, the more capital there is in the short term, the lower the profitability. This indicates the number of idle funds underused. Therefore, banking must create innovation for new products of banking in the digital and fintech era like today. In addition, another innovation is by providing the additional new sectors through the implementation of existing agreement roles such as by hitting the property sector and real sector investment, in which such sectors provide less loss and more profit. Also, another innovation is by providing alternative financing options in the midst of much interest-based conventional banking financing.

Impulse Response Function (IRF) Test

The Impulse Response Function (IRF) is utilized to explain the shock on one variable against other variables, in which the analysis in this test is not only for the short-run period but also for the future horizon as the long-run information. The impulse response function analysis is also utilized to determine the duration of such an event. The impulse response function analysis result can be seen as follows:

Figure 1
ROA Response to NPF
Response to Cholesky One S.D. (d.f. adjusted) Innovations
Response of ROA to NPF

The results of the IRF above show the ROA response to the NPF. The figure above shows that the ROA response continues to decline to NPF. The lowest point is seen in the seventh and tenth periods. This shows that the NPF that continues to increase affects the ROA response to

continuously decrease or in other words the profitability of banking decrease. So that Islamic banking needs to conduct an in-depth study before disbursing financing, if it is not proper and risky, it will cause the NPF to increase continuously and cause the banking profits to decrease continuously. This also informs that the financing carried out by Islamic banking is still in risky sectors. These results are in line with the research of (Suprpto, 2015).

Figure 2
ROA Response to CAR
Response to Cholesky One S.D. (d.f. adjusted) Innovations

The results of the IRF above show the ROA response toward CAR. The figure above shows that the ROA response at the beginning of the period is at zero points but decrease in the second period. At the second point, ROA starts to increase and starts to respond to the CAR. This indicates that public awareness of saving in Islamic banking continuously increases and also affects the financial capital in Islamic banking to increase. In the future the better management of capital funds owned by Islamic banking so that profitability can also increase. These results are in line with the research of (Nuriyah, 2018).

Figure 3
ROA Response to INFLATION
Response to Cholesky One S.D. (d.f. adjusted) Innovations

The results of the IRF above show the ROA response toward CAR. It shows that the ROA response toward inflation in the first to second period increases. However, the profitability then decreases and is stagnate, not exceeding 0. This is because the inflation level in the study period

is not too high or tends to stagnate during the first to tenth year period. So it does not affect the profitability of Islamic banking. This is in line with the research of (Sumarlin, 2016).

VD (Variance Decomposition) Test

After testing the IRF, the next step was to perform a variance decomposition test. This test is conducted to compile forecast error variance of a variable, that is, how big is the difference between variance before being hit by a shock and also after being hit by a shock. This test is also to provide a detailed explanation of how changes in one variable are affected by other variables..

Table 10
Variance Decomposition Test Results

Variance Decomposition on of ROA					
Period	SE	ROA	NPF	CAR	INFLATION
1	0.145709	100,0000	0.000000	0.000000	0.000000
2	0.167268	98.55530	0.174924	0.367204	0.902577
3	0.188524	91.09352	0.182619	7.946870	0.776991
4	0.1952	84.78796	2.559419	11.85817	0.794451
5	0.214338	75.94106	5.194388	18.05057	0.813976
6	0.229838	66.26398	7.723525	25.14965	0.862844
7	0.243795	58.92977	10.43827	29.76548	0.866488
8	0.257290	52.91462	12.49950	33.71985	0.866038
9	0.269918	48.09987	14.15769	36.87607	0.866370
10	0.281365	44,29523	15.54849	39.29676	0.859528

The table above shows the results of the variance decomposition of ROA. The first period shows that ROA is overall affected by the ROA variable itself at 100 percent. In the second period, the ROA variable starts to be affected by the NPF variable at 0.174924, the CAR variable at 0.367204, and the inflation variable at 0.902577. The effect of the NPF, CAR, and inflation variables continuously increases in every period. Until the tenth period, the effect of ROA toward the ROA variable itself is 44,29523. Then, the greatest effect of the CAR variable is 39.29676, while the NPF variable is 15.54849, and the inflation variable is 0.859528. This proves that in the future Islamic banking will be in demand by the public so that the tendency to save in Islamic banking is starting to rise. Then, it causes the Islamic banking capital reserve to increase and be able to provide profitability to the Islamic banking when well managed. This is seen from the effect of CAR which gives an impact of profit increase to the banking. Meanwhile, NPF and Inflation cause the banking profit to decrease.

CONCLUSION

Based on the results of the study, it can be concluded that the result of the long-run VECM of the NPF variable have a significant positive effect on ROA at 0.180239 percent. The CAR variable has a significant negative effect on ROA at -0.001099 percent. Meanwhile, the inflation variable has no significant effect on ROA.

The results of short-run VECM variables: (a) on cointegration test, it proves that there is an adjustment of the short-run to the long-run relationship as seen from the t-statistical value is 4.339235 and the coefficient is -0.445414 percent. (b) the NPF variable at lag 2 has a significant positive effect toward ROA at 0.143919 percent. (c) the CAR variable at lag 2 has a significant positive effect toward ROA at -0.000656 percent. (d) the inflation variable has no significant effect on ROA.

In this study, there are research limitations, the number of independent variables used is 3 variables. In further research, other variables can be added, especially external (macro) variables that are so dynamic in order to be able to see the effect of external conditions on the profitability of Islamic banking in Indonesia.

REFERENCES

- Basuki, A. T. (2015). *Electronic Data Processing (SPSS 15 dan EvIEWS 7)*. Yogyakarta: Danisa Media.
- Dendawijaya, L. (2009). *Manajemen Perbankan*. Jakarta: Ghalia Indonesia.
- Firdaus, M. (2011). *Aplikasi Ekonometrika Untuk Data Panel dan Time Series*. Bogor: IPB Press.
- Haryanti, Y. (2018). Pengaruh Rasio Kesehatan Bank Terhadap Kinerja Keuangan Bank Umum Syariah Di Indonesia Periode 2012-2016. *Skripsi Fakultas Ekonomi dan Bisnis Islam Universitas Islam Negeri Raden Intan Lampung*.
- Bank Indonesia. (2020). *Data Inflasi*. Retrieved November 10, 2020, from <https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/Default.aspx>
- Mankiw, N. (2006). *Pengantar Ekonomi Makro Edisi Ketiga*. Jakarta: Salemba Empat.
- Muhammad. (2005). *Manajemen Bank Syariah*. Yogyakarta: UPP AMPYKPN.
- Nuriyah. (2018). Micro, Small-Financial Financing And Its Implication On The Profitability Of Sharia Banks. *Jurnal Manajemen*, 3(2).

- OJK. (2019). *Statistik Perbankan Syariah*. Retrieved November 10, 2020, from OJK: <https://www.ojk.go.id/id/kanal/Syariah/data-dan-statistik/statistikperbankanSyariah>
- OJK. (2020). *(SNLKI) Strategi Nasional Literasi Keuangan Indonesia*. Retrieved November 10, 2020i , from OJK: [https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/ Strategi-Nasional-Literasi-Kuangan-Indonesia-](https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Documents/Pages/Strategi-Nasional-Literasi-Kuangan-Indonesia-)
- Rahmawati. (2016). Pengaruh Faktor Ekonomi Terhadap Kinerja Keuangan Perbankan Syariah di Indonesia. *Skripsi Fakultas Syariah dan Hukum UIN Syarif Hidayatullah*.
- Riyanto, B. (2001). *Dasar-dasar Pembelanjaan Perusahaan*. Yogyakarta: BPFE.
- Rohendi, A. (2010). Sistem Perbankan Indonesia Pasca Undang-Undang Perbankan Syariah (Indonesian Banking System Post Islamic Banking Law). *Jurnal Wawasan Tridharma*, 9.
- Sudarsono, H. (2004). *Bank dan Lembaga Keuangan Syariah Deskripsi dan Ilustrasi*. Yogyakarta: Ekonisia.
- Sumarlin. (2016). Analisis Pengaruh INFLASI, CAR, FDR, BOPO, dan NPF Terhadap Profitabilitas Perbankan Syariah. *Jurnal Universitas Islam Negeri Alauddin Makassar*, 6(2).
- Suprpto, Ummah. (2015). Faktor-Faktor Yang Mempengaruhi Profitablitas Pada Bank Mu'amalat Indonesia . *Jurnal Ekonomi dan Perbankan Syariah*, 3(2), 1-24.