

CHAPTER V

RESULT AND DISCUSSION

This chapter will examine the effect of interest rates, inflation and also the exchange rate on the total demand for money in Indonesia (M1 and M2 in the conventional sector and M1ISL and M2ISL in the Shariah sector) in the period January 2013 - February 2018. As explained in the chapter previously, that the testing to be carried out in this study was to use the Vector Auto Regression (VAR) method to carry out time series research that is often used in research, especially in economics and also the Vector Error Correction Model (VECM) which is a derivative method of VAR (Agus Tri Basuki, 2018). This test is done using the E-views 7 program.

A. RESULT

1. Stasinonary Test

The method used to do the Stationary Test data is ADF (Augmenteed Dick Fuller) test using the real level of five percent. If the t-ADF value is smaller than the MacKinnon value, it can be concluded that the data used are stationary (does not contain unit roots). The unit root testing is carried out at the level up to the first difference. Because most do not pass the data level, we test the data using in 1st difference level . (Agus Tri Basuki, 2018).

Table 5.1
Result of Stationary Test Table

Variable	Unit Root Test			
	Level		1st different	
	ADF	Prob	ADF	Prob
M1	-1.08885	0.715	-7.779353	0.0000
M2	-1.57808	0.4876	-7.653816	0.0000
M1ISL	-1.17935	0.1288	-11.16089	0.0045
M2ISL	-1.397353	0.4903	-7.272382	0.4565
INFLATION	-1.572714	0.6772	-2.963258	0.0000
EXCHANGE RATE	-2.46615	0.5769	-1.638194	0.0000
INTEREST RATE	-0.962166	0.7613	-6.527164	0.0000
RS	-1.742354	0.4052	-7.089851	0.0000

Source : Result Regression E-Views 7

From the results of the stationary test based on the Dickey-Fuller test, data that is not stationary at the data level is obtained or has not reached stationary with a significance of 5%. However, the stationary level is achieved in the ADF test which is at the level of first difference for all variables (Inflation, Exchange Rate, Interest, Sharia Return, M1, M2, and M1ISL) where the probability value can be smaller or less than 0.05 (5%) except M2ISL variables with probabilities exceeding 5% which are equal to 0.4565.

2. Lag Length Criteria

Test result in lag length can eliminate the problem of autocorrelation in the VAR system. The following are the results of testing the lag length in M1, M2, M1ISL, M2ISL:

Table 5.2
Result of Lag Length Criteria

Dependent Variables	Optimal Lag Length
M1	1
M2	1
M1ISL	1
M2ISL	2

Source : Result Regression E-Views 7

In the lag length test there are five criteria that are considered to form the length of lag, namely: LR model (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Swachrz Information Criterion (SC), and the last is Hannan_Quinn Information Criterion (HQ). Based on the long lag test found in the dependent variable M1, M2, and M1ISL, the maximum length result is 1 while the M2ISL variable dependent gets the maximum length result in lag 2.

In M1, both for FPE, AIC, SC, and HQ criteria get the most asterisks. While the difference with M2, the M2 LR variable is also included in the criteria for the maximum lag length 1. The conditions contained in M1ISL show the same criteria as M1 at the maximum lag length 1. Unlike the M2ISL variable, the criteria for M2ISL variables are the same as M2 but with a different maximum lag length. In M2ISL the maximum lag length used is 2.

3. VAR Stability Condition Test

The system estimation results of the VAR equation that has been formed need to be tested for stability through VAR Stability Condition Check in the form of Roots of Characteristic Polynomial for all variables used multiplied by the number of lags of each VAR. VAR stability needs to be tested because if the estimation results are not stable, it will affect when analyzing the IRF and FEVD which will be unstable. Based on the results of these tests, a VAR system is said to be stable if all its roots or roots have modulus smaller than one (<1). (Agus Tri Basuki, 2018).

M1

Table 5.3
Result of VAR Stability Test on M1

VAR Stability Check (M1)	
Root	Moduls
0.960471 - 0.038613i	0.961247
0.960471 + 0.038613i	0.961247
0.740530 - 0.161240i	0.757881
0.740530 + 0.161240i	0.757881
-0.363254 - 0.070754i	0.37008
-0.363254 + 0.070754i	0.37008
0.198985 - 0.152311i	0.250587
0.198985 + 0.152311i	0.250587

Source : Result Regression

E-Views 7

M2

Table 5.4
Result of VAR Stability Test on M2

VAR Stability Check (M2)	
Root	Moduls
0.949497 - 0.034809i	0.950135
0.949497 + 0.034809i	0.950135
0.767610 - 0.129410i	0.778442
0.767610 + 0.129410i	0.778442
-0.463092	0.463092
0.156507 - 0.197643i	0.252105
0.156507 + 0.197643i	0.252105
-0.071407	0.071407

Source : Result Regression

E-Views 7

M1ISL

Table 5.5
Result of VAR Stability Test on M1ISL

VAR Stability Check (M1ISL)	
Root	Moduls
1.000520	1.000520
0.908749	0.908749
0.854202	0.854202
-0.457437	0.457437
0.292915 - 0.257391i	0.389935
0.292915 + 0.257391i	0.389935
0.219184	0.219184
-0.110893	0.110893

Source : Result Regression

E-Views

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M2ISL

Table 5.6
Result of VAR Stability Check Test on M2ISL

VAR Stability Check (M2ISL)	
Root	Moduls
0.959608	0.959608
0.834482 - 0.080382i	0.838344
0.834482 + 0.080382i	0.838344
-0.439298	0.439298
0.403586	0.403586
0.257718 - 0.0206690i	0.330363
0.257718 + 0.0206690i	0.330363
-0.219804	0.219804

Source : Result Regression

E-Views

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Based on the results of the VAR model stability test, VAR model that was formed has been stable in its optimal lag, ie lag 1. Therefore, the VAR estimation will be used for stable and valid IRF and FEVD analysis.

4. Co-Integration Test

After determining the Maximum Lag Length and stability testing, then what is done is doing the Cointegration Test. Cointegration Test is a test carried out to determine the existence of a long-term relationship, namely the presence or absence of similarities in movement and stability of the relationship between the variables studied. In this research, we used *Johansen Cointegration Test* to see whether or not there was cointegration.

In the M1 variable, it can be seen that the results shown in the Trace Test value are much smaller, contained in the value of Critical Value. In conditions where the Critical Value is greater than the Trace Test, the resulting Probability will exceed 5%. So that in the position of none, at most 1, at most 2, and also at most 3 there is no value below 0.05 or 5%. Likewise produced in test Max Eigen value generated by none, at most 1, at most 2, and at most 3 shows that the absence of figures from the Max-Eigen which exceeds the value of the Critical Value, with automatic probability produced was exceeded 0.05 or 5%.

What happens in the M2 variable is, it is the same as the condition M1. However, it can be seen from the table, even though in the Trace test and also Max-Eigen Test the resulting value is smaller than the Critical Value which results in a probability exceeding 5%, in the conditions at most 3 both in the Trace

Test and Max-Eigen not so far the interval is 5% because the Trace Test and Max-Eigen test differences are only slightly different from the Critical Value.

Thus, the results of the cointegration test indicate that between the movements of M1, M2, Inflation, Exchange Rates and interest rates have a relationship of stability or balance and similarity of movements in the long run. In other words, in each short-term period, all variables tend to adjust to each other, to achieve long-run equilibrium.

Table 5.7

Result of Cointegration Test on M1 and M2

M1						
	Trace Test	Critical Value	Prob**	Max-Eigen	Critical Value	Prob**
None	30.90**	47.85**	0.6714	13.24**	27.58**	0.8709
At Most 1	17.66**	29.79**	0.591	9.70**	21.13**	0.7717
At Most 2	7.95**	15.49**	0.4699	5.84**	14.26**	0.6338
At Most 3	2.11**	3.84**	0.1457	2.11**	3.84**	0.1457

Continued Table 5.7

M2						
	Trace Test	Critical Value	Prob**	Max-Eigen	Critical Value	Prob**
None	31.83**	47.85**	0.6215	13.28**	27.58**	0.8685
At Most 1	18.54**	29.79**	0.5262	10.20**	21.13**	0.7256
At Most 2	8.34**	15.49**	0.4296	5.17**	14.26**	0.7193
At Most 3	3.16**	3.84**	0.0752	3.16**	3.84**	0.0752

Source : Result Regression E-Views 7

Table 5.8
Result of Cointegration Test on M1ISL and M2ISL

M1ISL						
	Trace Test	Critical Value	Prob**	Max-Eigen	Critical Value	Prob**
None	40.44**	47.85**	0.2069	15.47**	27.58**	0.7095
At Most 1	24.96**	29.79**	0.1625	12.27**	21.13**	0.5212
At Most 2	12.69**	15.49**	0.1263	7.82**	14.26**	0.3967
At Most 3*	4.87**	3.84**	0.0273	4.87**	3.84**	0.0273

Continued Table 5.8

M2ISL						
	Trace Test	Critical Value	Prob**	Max-Eigen	Critical Value	Prob**
None	38.95**	47.85**	0.2619	15.75**	27.58**	0.6866
At Most 1	23.20**	29.79**	0.2361	11.87**	21.13**	0.56
At Most 2	11.33**	15.49**	0.1919	6.52**	14.26**	0.5467
At Most 3*	4.80**	3.84**	0.0284	4.80**	3.84**	0.0284

Source : Result Regression E-Views 7

Switching to the condition of the variables produced by the sharia sector, namely M1ISL and M2ISL can be seen that in the Trace Test and Max-Eigen the value test produced from these two variables is greater than the Critical Value value at the Of most position 3. This means that at the most 3 these two variables, M1ISL and also M2ISL have probability values below 0.05 or 5%. The probability generated by M1ISL in the Trace Test and Max-Eigen test is 0.0273 or 2%. In the M2ISL variable the probability value generated is 0.0284 both on the Trace Test and the Max-Eigen test.

The conclusion is based on the econometric analysis above, it can be seen that among the variables used in this study, there is one cointegration at a significant level below 0.05 or 5%. Thus, the results of the cointegration test indicate that between the movements of M1ISL, M1ISL, Inflation, Exchange Rate, Sharia Return has no relationship to stability or balance and the similarity of long-term movements.

5. VAR and VECM Model

After testing the cointegration relationship between the variables used in the research below, then the next is to form the VAR model in M1 and M2 and form the VECM model on M1ISL and M2ISL. Because, as explained by Ascarya, if there is a cointegration relationship between the research variables, the estimation is done with VECM and the variable that has a cointegration value is the M1ISL variable and also M2ISL, the VECM model must be formed.

Table 5.9
Model of VAR on M1

Vector Autoregression Model (VAR M1)		
Variable	Coefficient	t-Statistics
LOG(M1(-1))	0.908955	[5.24021]
LOG(M1(-2))	-0.07132	[-0.38853]
LOG(EXCHRTE(-1))	0.147031	[0.27302]
LOG(EXCHRTE(-2))	-0.281975	[-0.52653]
INF(-1)	-1.723105	[-0.91351]
INF(-2)	1.873213	[0.98226]
INTEREST_RATE(-1)	-0.000899	[-0.01365]
INTEREST_RATE(-2)	-0.024826	[-0.39537]
C	3.647549	[1.16390]

Source : Result Regression E-Views 7

$$\log M1_t = \Phi_0 + \Phi_1 \log EXCHRTE_t + \Phi_2 INF_t + \Phi_3 INTEREST_RATE_t + e_t$$

$$\begin{aligned} \log M1_t = & 3.647549 + 0.147031 * \log(EXCHRTE(-1)) - \\ & 0.281975 * \log(EXCHRTE(-2)) - 1.723105 * INF(-1) + 1.873213 * INF(-2) - \\ & 0.000899 * INTEREST_RATE(-1) - 0.024826 * INTEREST_RATE(-2) \end{aligned}$$

The regression coefficient of the exchange rate variable has a positive effect of 1 percent on the M1 in the lag 1 means that the rupiah exchange rate has appreciated against the dollar in this condition. Whereas the opposite situation occurs in lag 2 because of the negative relationship between the exchange rate and M1. For the inflation variable if the demand for money M1 rises, it will reduce inflation because of the negative relationship between inflation and M1 in lag 1, the opposite of the inflation lag 2 has a positive effect on the M1. In the interest rate variable, in lag 1 and lag 2 the relationship between interest rates and M1 is negative.

Table 5.10
Model of VAR on M2

Vector Autoregression Model (VAR M2)		
Variable	Coefficient	t-Statistics
LOG(M2(-1))	0.940931	[6.71468]
LOG(M2(-1))	-0.079149	[-0.55774]
LOG(EXCHRTE(-1))	-0.938368	[-0.74801]
LOG(EXCHRTE(-2))	0.227081	[0.18328]
INF(-1)	-7.545968	[-1.72533]
INF(-2)	8.551032	[1.92734]
INTEREST_RATE(-1)	-0.006795	[-0.05418]
INTEREST_RATE(-2)	-0.022307	[-0.19226]
C	8.778932	[1.60442]

Source : Result Regression E-Views 7

$$\log M2_t = \Phi_0 + \Phi_1 \log EXCHRTE_t + \Phi_2 INF_t + \Phi_3 INTEREST_RATE_t + e_t$$

$$\begin{aligned} \log M2_t = & 8.778932 - 0.938368 * \log(EXCHRTE(-1)) + \\ & 0.227081 * \log(EXCHRTE(-2)) - 7.545968 * INF(-1) + 8.551032 * INF(-2) - \\ & 0.006795 * INTEREST_RATE(-1) - 0.022307 \end{aligned}$$

The equation above shows that the relationship between the exchange rate and M2 in lag 1 is negative but in lag 2 the relationship becomes positive, namely the appreciation of the rupiah. In the inflation variable the relationship between inflation and M2 is negative, if the number of M2 rises, inflation falls to 7%, but the conditions that occur if M2 falls then inflation will rise to 8%. In the interest

rate variable both in lag 1 and 2 the relationship between interest rates and M2 is negative.

Table 5.11
Model of VAR on M1ISL

Vector Error Correction Model (VECM M1ISL)		
Variable	Coefficient	t-Statistics
CointEq1	-0.036324	[-0.41413]
D(LOG(M1ISL(-1)))	-0.292429	[-1.71734]
D(LOG(M1ISL(-2)))	-0.239098	[-1.42168]
D(LOG(EXCHRTE(-1)))	0.502607	[1.37608]
D(LOG(EXCHRTE(-2)))	-0.067202	[-0.17703]
D(INF(-1))	0.881254	[0.72649]
D(INF(-2))	-0.006394	[0.00518]
D(RS(-1))	0.006101	[0.71701]
D(RS(-2))	-0.001807	[-0.21429]
C	0.012908	[1.22552]

$$\log M1ISLR_t = \Phi_0 + \Phi_1 \log EXCHRTE_t + \Phi_2 RS_t + \Phi_3 INF_t + e_t$$

$$\begin{aligned} \log M1ISL_t = & 0.012908 + 0.502607 * \log(EXCHRTE(-1)) - \\ & 0.067202 * \log(EXCHRTE(-2)) + 0.881254 * INF(-1) - 0.006394 * INF(-2) + \\ & 0.006101 * RS(-1) - 0.001807 * RS(-2) \end{aligned}$$

What happens in the sharia sector from the above equation is that the exchange rate has a positive effect on M1ISL, meaning that in lag 1 the increase in M1ISL will appreciate the value of the rupiah, and vice versa in lag 2 if there is an increase by M1ISL. Inflation also has a positive effect on lag 1 and has a

negative effect on M1ISL in lag 2. In the RS variable, what happens is that hospitals can have a positive impact on the short and negative in the long run.

Table 5.12
Model of VAR on M2ISL

Vector Error Correction Model (VECM M2ISL)		
Variable	Coefficient	t-Statistics
Cointeq1	0.006397	[0.11131]
D(LOG(M2ISL(-1)))	-0.338979	[-2.13753]
D(LOG(M2ISL(-2)))	-0.276512	[-1.71961]
D(LOG(EXCHRTE(-1)))	0.300807	[0.89082]
D(LOG(EXCHRTE(-2)))	0.011168	[0.03205]
D(INF(-1))	-0.294742	[-0.26323]
D(INF(-2))	-0.900987	[-0.78422]
D(RS(-1))	-0.002128	[-0.27467]
D(RS(-2))	-0.006994	[-0.91772]
C	0.017622	[1.78306]

Source : Result Regression E-Views 7

$$\log M1ISLR_t = \Phi_0 + \Phi_1 \log EXCHRTE_t + \Phi_2 RS_t + \Phi_3 INF_t + e_t$$

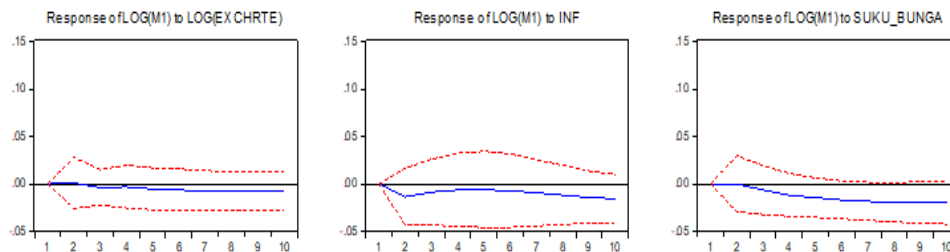
$$\begin{aligned} \log M2ISL &= 0.017622 + 0.300807 * \log(EXCHRTE(-1)) + \\ &0.011168 * \log(EXCHRTE(-2)) - 0.294742 * INF(-1) - 0.900987 * INF(-2) - \\ &0.900987 * RS(-1) - 0.002128 * RS(-2) \end{aligned}$$

In the M2ISL variable both in the short and long term the rupiah exchange rate condition will continue to appreciate due to the increasing number of M2ISL, and will reduce the inflation value if the M2ISL increase takes place in the short and long term. The effect of RS on M2ISL is negative in lags 1 and 2.

6. Impulse Response Function (IRF)

Impulse analysis is used to determine the positive or negative response of a variable to other variables, especially when the shock occurs in certain variables. In the short term, the response is usually significant and tends to change. Whereas in the long run the response tends to be consistent and continue to shrink. The Impulse Response Function (IRF) analysis also functions to see how long the influence occurs. This IRF test is shown by a graph, if the IRF chart is above the balance point, the response of the analyzed variable is positive or has an increase, whereas if the IRF chart is below the balance point, then the variable response is negative or decreases.

M1



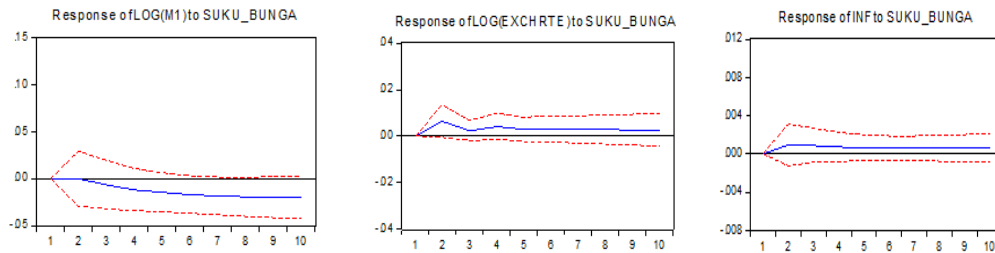
Source : Result Regression E-Views 7

Figure 5.1

Impulse Response of M1 to Exchange Rate, Inflation and Interest Rate

Seeing the conditions above in the M1 response to the exchange rate shock is not responding because the position is exactly on the horizontal line, up to the second period. But after the 3rd period, the response given by M1 to the exchange rate change is negative with a horizontal line below. The response received by M1 to the shock from the graph of inflation above is negative since on the first period

until the last period which is tenth period. The condition of M1 gains from interest rates is not to change the second period, but after the third period and subsequent periods the interest rate shocks are negative behavior towards M1.

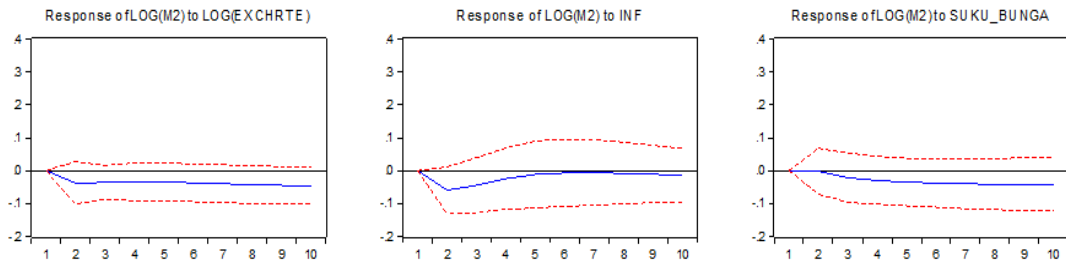


Source : Result Regression E-Views

Figure 5.2
Response of M1, Exchange Rate, and Inflation to Interest Rate

The response given M1 to the shock of the interest rate is shown by the graph which decreases from the second period to the tenth or last period. Then, on the exchange rate variable, interest rates can actually affect the exchange rate, on the graph shows that there is a positive response received by the exchange rate against interest rate shocks. Likewise with the inflation response to interest rates, inflation responds positively and stably from the third period to the end of the period, even though the second and third periods had experienced a decline but still had a positive effect.

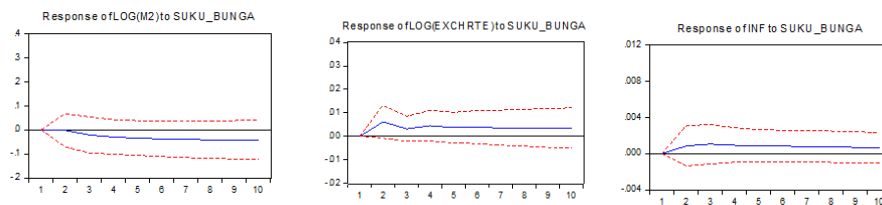
M2



Source : Result Regression E-Views 7

Figure 5.3
Response of M2 to the Exchange Rate, Inflation, and Interest Rate

The results found in the analysis of M2 responses to exchange rate shocks are negative starting from the 2nd period onwards, and in the first period M2 does not respond to exchange rate shocks. Then the shock on the inflation variable has a negative impact on M2 until the second period, however, in the 3rd period and onwards M2 does not respond to the shock given by inflation. Conditions where the shock of interest rates negatively affects M2 can be seen starting from the second period to the end.

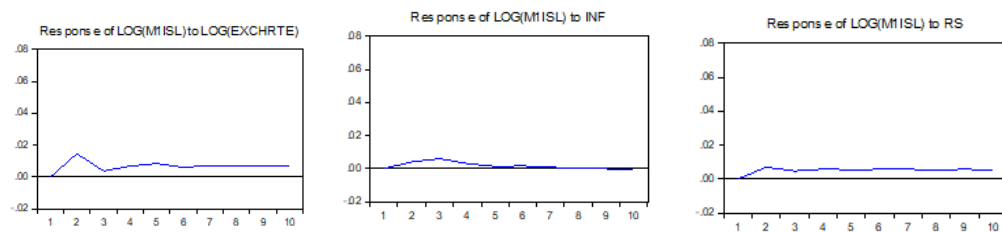


Source : Result Regression E-Views 7

Figure 5.4
Response of M2, Inflation, and Exchange Rate to Interest Rate

The response given by M2 to the interest rate shock is negative, starting from the second to the last period can be seen on the graph if the line is below the horizontal line. Then in the exchange rate variable that responds positively to the shocks given by interest rates seen in the third period to the end, the exchange rate response to interest rates is positive and quite stable. The inflation variable also responds positively to the shock generated by the interest rate, seen in the graph above, that the line is above the horizontal line stably.

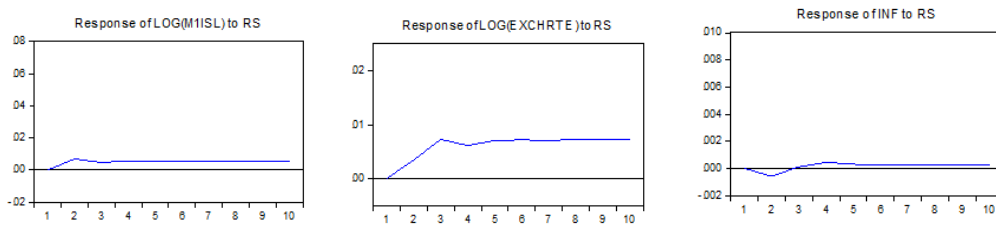
M1ISL



Source : Result Regression E-Views

Figure 5.5
Response of M1ISL to Exchange Rate, Inflation and Return Syariah

In the sharia sector, the shock generated by the exchange rate against M1ISL is positive because the line on the chart shows its presence above the horizontal line, meaning that M1ISL responds positively to the exchange rate. In the inflation variable, M1ISL shows that there is no response given to inflation when there is a shock because the line is right on the horizontal line. The M1ISL response to Sharia Return is positive and stable when viewed based on the graph because it is in the position above the horizontal line.

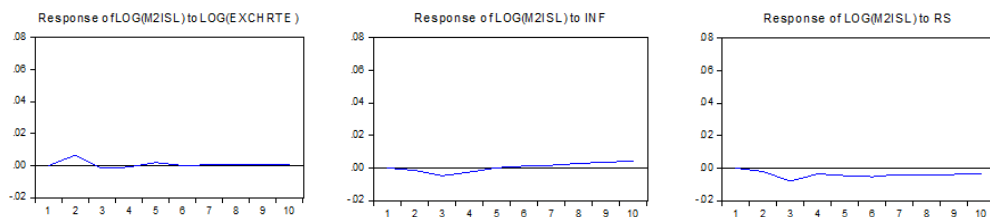


Source : Result Regression E-Views 7

Figure 5.6
Response of M1ISL, Exchange Rate, Inflation to Return Syariah

The response received by M1ISL to Sharia Return Shocks (RS) is positive and stable, then followed by a positive exchange rate response to RS with a graph showing that the response given by the exchange rate is quite high above the horizontal line. But the inflation variable that occurs is that inflation does not respond too much to the existence of RS, can be seen in the graph above where the variable inflation line is right in the horizontal line.

M2ISL

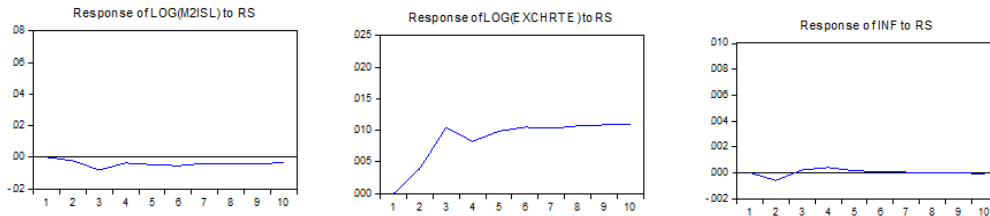


Source : Result Regression E-Views 7

Figure 5.7
Response of M2ISL to Exchange Rate, Inflation, and Return Syariah

In the exchange rate variable, M2ISL gives a positive response for the 1st period to the 2nd period, but after entering the 3rd period M2ISL does not respond to the shock given by the exchange rate. In Inflation, M2ISL had failed to respond

to inflation shocks, but it entered a period of 2 to 3 the response given by M2ISL to the variance inflation was negative by the end of the period.



Source : Result Regression E-Views 7

Figure 5.8

Response of M2ISL, Exchange Rate, and Inflation to the Return Syariah

The response given by M2ISL to hospital shocks was negative throughout the period from the first to the tenth period. Then the exchange rate gave a fairly large and positive response to the hospital even though it had experienced a decline from the third period, but the condition was still positive until the end of the period. The response given to inflation on interest rates is negative at the beginning of the period, but after entering the third period inflation has responded positively but then in the fifth period and onwards inflation does not respond to shocks generated by Rs.

7. Forecast Error Variance Decomposition (FEVD)

Variance Decomposition aims to measure the size of the contribution or the composition of the influence of each independent variable on the dependent variable. The following is an explanation of the FEVD regression results:

M1

Table 5.13
Result of Variance Decomposition on M1

Variance Decomposition M1				
Periode	M1	EXCHRTE	INF	IR
1	100.00	0.000	0.00	0.00
2	99.16	0.002	0.83	0.00
3	98.85	0.005	0.93	0.15
4	98.36	0.084	0.96	0.58
5	97.62	0.168	1.01	1.18
6	96.59	0.280	1.13	1.99
7	95.29	0.435	1.36	2.90
8	93.78	0.607	1.72	3.88
9	92.11	0.777	2.22	4.87
10	90.30	0.925	0.92	5.83

Source : Result Regression E-Views 7

Based on the table on 5.13, the change in M1 is generally dominated by the shock of M1 itself with a variable composition of 100% in the first period and continues to decline in the next period to touch the variant 90.39% in the last period or the tenth period. The next variable that affects the change in M1 is the exchange rate. However, it does not show a good response with a contribution of 0.002% in the second period and increased to 0.92% in the tenth period. Inflation gives the employer more than the effect of the exchange rate on the M1 which is equal to 0.83% in the second period and continues to increase its influence to 2.85% of tenth period. In addition, the interest rate does not give a good response to M1 because it only affects 0.15% in the third period and has increased by the tenth period reaches 5.83%.

M2

In table Variance Decomposition regression results show that in general again the variable it dominates shocks, in other words M2 dominates shocks to M2, which amounted to 100% in the first period and continues to decline to 88% in the tenth period. Another variable that shakes M2 is the exchange rate, which contributes 1.13% in the period 2, indeed the contribution generated is not large enough, but the exchange rate has increased in influencing M2 to reach 5% in the tenth period. In addition, there is a variable inflation that affects M2 at 2.7% in the first period, greater value if compared to inflation shocks against M1 and increases to 3.06% in the fourth period but after that it continues to decline to touch the figure of 2.3%.

Table 5.14
Result of Variance Decomposition on M2

Variance Decomposition M2				
Periode	M2	EXCHRTE	INF	IR
1	100.00	0.00	0.00	0.00
2	96.07	1.13	2.78	0.00
3	94.82	1.61	3.27	0.28
4	94.26	1.96	3.06	0.70
5	93.69	2.30	2.81	1.18
6	92.95	2.71	2.62	1.70
7	92.05	3.20	2.49	2.25
8	91.02	3.76	2.41	2.80
9	89.9	4.37	2.37	3.34
10	88.74	5.01	2.37	3.86

Source : Result Regression E-Views 7

M1ISL

Based on the regression results of the FEVD above which most dominates the M1ISL shock is M1ISL itself with a composition of 100% in the first period and continues to decrease to 95% the decrease in variance experienced by M1ISL is not as much as M1 indicating that the shock to M1ISL is more stable. Then there is the exchange rate variation which has a variable composition of 2.84% in the second period and continues to decline to 2.48% at the end of the period or tenth period. In addition to the variable inflation the composition of the variable is 0.20% in the first period and at the end of the period increases, but not too large, the increase is only 0.28%. In the Islamic return variable the varying composition produced against M1ISL which is equal to 0.63% in the second period, then continues to experience a not-so-significant increase of only 1.25% at the end of the tenth period.

Table 5.15
Result of Variance Decomposition on M1ISL

Variance Decomposition M1ISL				
Periode	M1ISL	EXCHRTE	INF	RS
1	100.00	0.00	0.00	0.00
2	96.31	2.84	0.20	0.63
3	96.09	2.56	0.57	0.77
4	96.18	2.39	0.52	0.89
5	95.99	2.55	0.45	0.98
6	96.02	2.47	0.41	1.07
7	96.00	2.48	0.37	1.13
8	95.99	2.49	0.33	1.18
9	95.99	2.47	0.30	1.22
10	95.97	2.48	0.28	1.25

Source : Result of Regression E-Views 7

M2ISL

With M2ISL variable changes in general are still dominated by M2ISL vary itself, which is equal to 100% in the first period and then decreases not too significantly and decreases slightly compared to M1ISL, which only decreases to 98% in the tenth period. Then there is the exchange rate variation which has a variable composition of 0.6% in the second period and continues to decline in the tenth period to reach 0.24%. In addition, there is an inflation variable that has a variable composition of 0.08 in the second period and continues to increase to 1% in the seventh period, but has decreased afterwards until the last period, which is 0.9% in the tenth period.

Table 5.16
Result of Variance Decomposition on M2

Variance Decomposition M2ISL				
Periode	M2ISL	EXCHRTE	INF	RS
1	100.00	0.00	0.00	0.00
2	99.19	0.68	0.04	0.08
3	98.03	0.61	0.37	0.97
4	98.24	0.48	0.37	0.88
5	98.30	0.43	0.30	0.95
6	98.30	0.37	0.27	1.04
7	98.40	0.32	0.25	1.00
8	98.45	0.29	0.26	0.99
9	98.46	0.26	0.30	0.97
10	98.46	0.24	0.35	0.93

Source : Result Regression E-Views 7

8. Granger's Cassuality Test

From the results obtained, it is known that those who have a causative relationship are those that have a smaller probability value than 0.05, so that later Ho is rejected, which means that a variable will affect other variables. Here are the results of granger causality testing:

M1

Table 5.17
Result of Granger's Cassuality Test on M1

Null Hypothesis	F-Stat	Prob
INF does not Granger Cause EXCHRTE	1.115	0.33
EXCHRTE does not Granger Cause INF	4.337	0.01
M1 does not Granger Cause EXCHRTE	0.008	0.99
EXCHRTE does not Granger Cause M1	0.074	0.92
INTEREST RATE does not Granger Cause EXCHRTE	1.359	0.26
EXCHRTE does not Granger Cause INTEREST RATE	1.686	0.19
M1 does not Granger Cause INF	0.596	0.55
INF does not Granger Cause M1	0.411	0.66
INTEREST RATE does not Granger Cause INF	0.378	0.68
INF does not Granger Cause INTEREST RATE	5.447	0.00
INTEREST RATE does not Granger Cause M1	1.862	0.16
M1 does not Granger Cause INTEREST RATE	0.653	0.52

Source : Result Regression E-Views 7

- Variable Inflation does not significantly affect the exchange rate, but the exchange rate, so Ho is accepted because the probability value reaches (0.3349) while in the exchange rate variable, the exchange rate affects inflation by (0.0178) then Ho is rejected and gets the probability that there is unidirectional causality namely the exchange rate which significantly affects inflation, does not apply to the opposite.

- Variable M1 does not significantly affect the exchange rate (0.9920) so H_0 is accepted and so is the exchange rate variable not significantly affecting M1 (0.1945) with this evidence that there is no causality for the two variables.
- Variable interest rates do not significantly affect the exchange rate (0.2652) which means rejecting H_0 . Likewise with the exchange rate variable that is not affected by interest rates (1945), with this there is no occurrence of any causality on the variable interest rates and exchange rates.
- Variable M1 does not significantly affect inflation (0.5543) which means accepting H_0 as well as inflation conditions that do not affect M1 (0.6645), so there is no occurrence of any causality between M1 and Inflation variables.
- Variable interest rates do not significantly affect inflation (0.6864) then H_0 is accepted, but Inflation affects interest rates of (0.0069) then H_0 is accepted. This means that only inflation that significantly influences the interest rate, then this is a unidirectional causality, does not apply to the opposite.
- Variable interest rates do not significantly affect M1 (0.1649) then H_0 is rejected, and the same thing when the opposite M1 does not significantly affect the interest rate (0.5243). Meaning that there are no causalities in these two variables.

M2

Table 5.18
Result of Granger's Causality Test on M2

Null Hypothesis	F-Stat	Prob
INF does not Granger Cause EXCHRTE	1.115	0.33
EXCHRTE does not Granger Cause INF	4.337	0.01
M2 does not Granger Cause EXCHRTE	1.359	0.26
EXCHRTE does not Granger Cause M2	1.686	0.19
INTEREST RATE does not Granger Cause EXCHRTE	0.560	0.57
EXCHRTE does not Granger Cause INTEREST RATE	1.829	0.17
M2 does not Granger Cause INF	0.378	0.68
INF does not Granger Cause M2	5.447	0.00
INTEREST RATE does not Granger Cause INF	1.058	0.35
INF does not Granger Cause INTEREST RATE	1.886	0.16
INTEREST RATE does not Granger Cause M2	1.366	0.26
M2 does not Granger Cause INTEREST RATE	0.058	0.94

Source : Result Regression E-Views 7

- Variable inflation does not significantly affect the exchange rate (0.3349) then H_0 is rejected and vice versa, the exchange rate significantly influences inflation (0.0178), H_0 is accepted, meaning this is a unidirectional causality in which exchange rates can affect inflation while inflation cannot affect the exchange rate.
- Variable interest rates do not significantly affect the exchange rate (0.2652) Artinta H_0 is rejected and also applies to exchange rates that do not affect interest rates (0.1945). Then the conclusion is that the two variables do not have any causality.
- M2 variable does not significantly affect the exchange rate (0.5741) so H_0 is rejected, as well as the exchange rate that does not affect M2 because it has a probability value (0.1701) the conclusion is that these two variables do not have any causality.

- Variable interest rates do not significantly affect inflation (0.6864) meaning that it rejects H_0 but the opposite happens inflation affects the interest rate with a probability of (0.0069) that accepts H_0 . This means that there is a unidirectional causality, namely only inflation that affects interest rates but not vice versa.
- M2 variable does not significantly affect inflation (0.3539) H_0 is rejected and the opposite happens where inflation also does not affect M2 (0.1613). Hence there is no any causality in these two variables.
- M2 variability does not significantly affect the interest rate (0.2634) rejecting H_0 and the opposite condition interest rates do not affect M2 (0.9430) because there is no causality in these two variables.

M1ISL

Table 5.19
Result of Granger's Cassuality Test on M1ISL

Null Hypothesis	F-Stat	Prob
INF does not Granger Cause EXCHRTE	1.115	0.33
EXCHRTE does not Granger Cause INF	4.337	0.01
M1ISL does not Granger Cause EXCHRTE	0.478	0.62
EXCHRTE does not Granger Cause M1ISL	3.004	0.05
RETURN SYARIAH does not Granger Cause EXCHRTE	1.052	0.35
EXCHRTE does not Granger Cause RETURN SYARIAH	2.507	0.09
M1ISL does not Granger Cause INF	4.532	0.01
INF does not Granger Cause M1ISL	0.204	0.81
RETURN SYARIAH does not Granger Cause INF	0.319	0.72
INF does not Granger Cause INTEREST RATE	1.858	0.16
RETURN SYARIAH does not Granger Cause M1ISL	0.161	0.85
M1ISL does not Granger Cause INTEREST RATE	0.751	0.47

Source : Result Regression E-Views 7

- Variable inflation does not significantly affect the exchange rate (0.3349) with this H_0 is rejected, but conversely, the exchange rate affects inflation with

probability (0.0178) where H_0 means accepting. Because there is unidirectional causality, the exchange rate can affect inflation, while inflation does not affect the exchange rate.

- M1ISL variable does not significantly affect the exchange rate (0.6220) then H_0 is rejected, but the conditions differ if the exchange rate will affect M1ISL with a probability of (0.0577) with this then H_0 is accepted because of unidirectional causality where M1ISL cannot affect the exchange rate but M1ISL can be affected by exchange rate.
- Variable of RS does not significantly affect the exchange rate (0.3561) and also the exchange rate that does not affect rs (0.0908) therefore the two variables with these two conditions reject H_0 .
- M1ISL variable significantly influences inflation with a probability of (0.0151) which means that H_0 is accepted, but the situation in the same direction as inflation can not affect M1ISL (0.8159) which means H_0 is rejected.
- Variable rs does not significantly influence inflation (0.7179) and also inflation cannot affect rs (0.1655), so they both reject H_0 .
- Variables rs do not significantly affect M1ISL (0.8515) and also M1ISL cannot affect rs with a probability of (0.4764), so these two variables do not have any causality.

M2ISL

Table 5.20
Result of Granger's Cassuality Test on M2ISL

Null Hypothesis	F-Stat	Prob
INF does not Granger Cause EXCHRTE	1.115	0.33
EXCHRTE does not Granger Cause INF	4.337	0.01
M2ISL does not Granger Cause EXCHRTE	1.052	0.35
EXCHRTE does not Granger Cause M2ISL	2.507	0.09
RETURN SYARIAH does not Granger Cause EXCHRTE	0.666	0.52
EXCHRTE does not Granger Cause RETURN SYARIAH	1.818	0.17
M2ISL does not Granger Cause INF	0.319	0.72
INF does not Granger Cause M2ISL	1.858	0.16
RETURN SYARIAH doesr not Granger Cause INF	5.460	0.00
INF does not Granger Cause INTEREST RATE	0.330	0.72
RETURN SYARIAH does not Granger Cause M2ISL	0.802	0.45
M2ISL does not Granger Cause INTEREST RATE	0.254	0.77

Source : Result Regression E-Views 7

- Inflation variable does not significantly affect the exchange rate (0.3349) then Ho is rejected, but conversely the exchange rate influences inflation with a probability of (0.0178) so that with Ho accepted this happens that unidirectional causality is that inflation cannot affect the exchange rate, but the exchange rate can affect inflation.
- Variable RS does not significantly affect the exchange rate (0.3561) and also the exchange rate does not significantly affect the RS because it has a probability value of (0.0908) so these two conditions reject Ho and also the absence of causality that occurs on this variable.
- M2ISL variable does not significantly affect the exchange rate (0.5177) and also the exchange rate does not significantly affect M2ISL with probability (0.1718) so Ho is rejected and both of these variables do not have any causality.

- Variable RS does not significantly affect inflation (0.7279) and also vice versa, inflation cannot affect the hospital with probability (0.1655) so H_0 is rejected and both of these variables do not have any causality.
- M2ISL Variables significantly affect inflation with probability (0.0069) then H_0 is accepted but is inversely proportional to the situation where inflation cannot affect M2ISL because the probability is (0.7201) the meaning of H_0 is rejected and both of these variables have unidirectional causality where M2ISL can affect inflation while inflation does not can affect M2ISL.
- M2ISL variable does not significantly affect RS (0.4533) and also with probability (0.7766) RS cannot influence inflation because both of them reject H_0 , so there is no any causality in this variable.

B. DISCUSSION

1. The Influence of Inflation and Exchange Rate on the Amount of Money Demand in Indonesia

Established along the regression results above, it demonstrates that the M1 variable proves to be insignificant in determining the exchange rate, implying that a lot of the money contained in the Compensation M1 will not touch on the value of the rupiah whether appreciation or depreciation. Affect M1 means that both when the rupiah is appreciating and depreciating the amount of money contained in the M1 component will not cause an issue. Furthermore, the inflation variable is not established if there is a significant value to affect M1, meaning that rising prices is high or low does not affect the quantity of money contained in

component M1. Also the opposite circumstance, the quantity of money contained in the M1 component is not significant to determine the increase or decrease in the inflation rate.

Established on the research found in the regression results above, it connotes that the influence of M2 on the exchange rate is not significant, which entails that the great sum of money in the M2 component will not touch on the rupiah exchange rate and also the opposite state of affairs where the rise or decline of the rupiah exchange rate will not in the M2 component. Variance inflation does not significantly affect M2 seen by its probability of exceeding 5%, therefore the high or low value of existing inflation will not affect the amount of money contained in the M2 component and vice versa the amount of money in the M2 component does not affect the inflation rate.

The results of the research found in the M1 and M2 variables in the conventional sector were strengthened by the results of the research conducted by Ilhan Ozturk and Ali Acavarci in the 2008.

According to Ilhan Ozturk, Ali Acavarci (2008), imbalances in the requirement for money can affect the usefulness of policies for each point. In his research, states that determining the sum of honest money will receive a beneficial impact on the carrying out of the country's monetary policy. Research that found that money and the effects were negative. The opinion which is the researcher is that M2 can be predicted by monetary aggregates, then from the money rate analyzed by the researcher it can be concluded that long-term income elasticity is

in the presence of unity. In some countries that are known, there are a large part of economic changes that have become deregulation and the dollarization of the substance of financial markets. From these conditions, which can be used from income and the measure of depreciation, the sum of money of money used is dollars. This means the substitution of the currency received is a diminution in the independence of the economic transition in monetary conditions.

On the M1ISL variation that happens is the exchange rate significantly affects the quantity of money that is in the M1ISL component positively, meaning that when the rupiah is experiencing appreciation, the quantity of money held in the M1ISL component will increase. In summation, the positive effects provided by M1ISL are through inflation. M1ISL significantly influences inflation, implying that if there is an increment in the sum of money that is in the M1ISL instrument, when the inflation rate is high means that if people prefer to save their money on component on M1ISL so, money is not distributed for the purpose of excessive consumption and will give the positive impact to the economy conditions.

The M2ISL variable shows that the absence of a significant value for the exchange rate affects M2ISL and M2ISL also does not affect the exchange rate, meaning that the amount of money contained in M2ISL components will not appreciate or depreciate the value of the rupiah against the dollar. But in contrast to the exchange rate, inflation can be influenced by M2ISL in a significantly positive way, implying that when the quantity of money in the M2ISL component will affect the inflation rate.

The results of the research found in the M2ISL variables in the syariah sector were strengthened by the results of the research conducted by Ebrahim Bahrami Nia, Sayed Hosein Izadi, Fariba Chavoshzadeh Tafti in 2014.

According to Ebrahim Bahrami Nia, Sayed Hosein Izadi, Fariba Chavoshzadeh Tafti (2014), The results of the research found are uncertainties that can be utilized to increase risks and risks just in front of economic factors. So to obtain out the genes that provide benefits from the cognitive operation is the existence of technical and financial conformation because it can offer benefits to other economic sectors. The researchers also say that what they do is demand for money, besides that there are also important variables such as influencing interest rates on the economy. The results found at this time are the result of demand and money in the economy. Then the effect given is a condition of inconvenience such as that which will result in the settlement of Demand for money. By being placed on the uncertainty of economic conditions, the number of implementations is better than the previous condition just in case. Economic actors prefer to use assets with lower risk which will drive the economic system more.

2. The Influence of Interest Rate and Return Syariah on the Amount of Money Demand in Indonesia

M1 variable is not influenced and influences the existence of interest rate shocks, meaning that at the condition of interest rates that are high or low, the amount of money contained in component M1 is not affected and also the amount of money in component M1 does not affect the increase or decrease interest rates.

The M2 variable proves that there is no significant value for M2 affected by interest rate shocks, and the opposite condition where M2 does not affect interest rates. This means that the amount of money contained in the M2 component is not based on the increase or decrease experienced by interest rates, and with an increase in interest rates or a decrease in interest rates does not make a significant change in the amount of currency in the M2 component.

The results of the research found in the M1 and M2 variables in the conventional sector were strengthened by the results of the research conducted by Arif Widodo in 2015.

According to Arif Widodo (2015), Interest Rate Deposits have a negative and significant effect on demand for money. This is in accordance with Cambridge's theory which says, if the interest rate rises there is a tendency for people to reduce cash because they have an opportunity cost of holding money, so when interest rates increase, people tend to save money in banks because it is more profitable than holding cash.

The M1ISL variable does not prove that there is a significant value to the effect of sharia returns. Sharia return gives the same results, where there is no influence of Islamic returns on M1ISL. This means that when M1ISL increases, it has no effect to reduce or increase the numbers in Islamic return variables, as well as decreasing or increasing Islamic returns will not affect the components contained in M1ISL.

M2ISL Variables are not affected and influenced by sharia returns, which means that if the increase or decrease in the amount of money contained in the M2ISL component will not affect the value set by Islamic returns and vice versa, the determination of Islamic return rates is not based on the amount of money in the M2ISL component.

3. The influence of implementation of Return Syariah that is more stable than using interest rates.

Based on the results of the above research states that interest rates negatively affect the amount of money that is in the M1 component, meaning that in conditions where M1 is increasing, the interest rate offered will decrease, as well as the opposite condition, if the amount of money in M1 decreases then the value of the term interest will increase. In addition, the same response is from the component of the amount of money in M2, which responds negatively to the shock of the interest rate where the conditions that occur will always be in the opposite direction when M2 rises, the rate of interest decreases.

The results of the research found in the M1 and M2 variables in the conventional sector were strengthened by the results of the research conducted by Halia Butra Aini, Syamsurijal Tan, Arman Delis in 2016.

According to Halia Butra Aini, Syamsurijal Tan, Arman Delis (2016), their variable on M2 shows that there are no correlation between M2 and Interest rate and also Interest rate to M2 have no power to influence each other, but they still make a statement that the condition of the money supply in the Indonesian

economy is dominated by the influence of interest rates and inflation. This refers to the interest rate transmission theory which explains that the role of the monetary sector is still quite important in controlling the amount of money in circulation. The government through the central bank still holds strong control for controlling the economy in Indonesia. Economic growth also influences interest rates, inflation and the amount of money in circulation. In addition, the money supply is a key variable in determining policies to control price and income levels. Second, inflation or deflation can be prevented and overcome only if the money supply is per unit output can be maintained increase and decrease. The effectiveness of fiscal policy depends on financing, the amount of deficits financed by loans from the community without increasing the amount of money in circulation. If the deficit is financed is by borrowing money from the community the direct result of the deficit can be balanced. However, if the deficit is financed by printing money (an increase in the amount of money in circulation) then the direct result is difficult to balance.

In the sharia sector, the conditions experienced by M1ISL to respond to shocks from Sharia Returns are positive, meaning that the amount of money in the M1ISL component will respond positively to shocks generated by the RS. However, it is different from the M2ISL variable which negatively responds to the shock done by the RS, meaning that if there is a shock from the variable RS, M2ISL is in the opposite condition.

The results of the research found on the shariah sector represent by variables M1ISL and M2ISL were strengthened with the results of the research

conducted by Ascarya, Heni Hasanah, Noer Azam Achsani in 2008. According to Ascarya, Heni Hasanah, Noer Azam Achsani (2008), The results of the study found that the demand for Islamic money is more stable than the conventional money demand in response to shocks from other variables. The demand for conventional money interest rates has a large influence compared to the demand for Islamic money.

With the implementation of the profit sharing system, the system used is far more fair than using conventional systems. In addition, Islamic banks are more independent in determining profit sharing ratios because they are not based on interest rates that occur in the market, so customers at the Shari'ah bank will be more calm if there is an increase in interest rates in the future because they do not depend on interest. (Nur Aksin, 2013)