ANALYSIS OF ISLAMIC MONETARY POLICY TRANSMISSION AMID THE COVID-19 PANDEMIC

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Abstract

This study aims to analyze the transmission mechanism of the Islamic monetary system through the interest rate and exchange rate channels. The data used in this study is monthly data in the form of time series starting from Bank Indonesia and Financial Services Authority January 2015 to December 2020. The model uses simultaneous equations and the two stage least square method. Data processing using stationary test. The results of the monetary transmission mechanism on the interest rate channel show that the exchange rate, inter-Islamic money market and profit-sharing rate have a positive effect and show a positive significance, but the total Islamic bank financing has a negative effect. while the monetary policy transmission mechanism of the exchange rate channel gives the result that interest rates and total financing have a positive and positive significance on the contrary, inflation has no effect and the result is negative significance.

Keywords: transmission monetary sharia, TSLS, interest rate channel (BI rate 7 days repo), exchange rate channel

1. Introduction

1.1 Introduce the Problem

The views of several researchers regarding the transmission of sharia-based monetary policy have different results that the implementation of monetary policy has an effect on the real sector in the short term (Alam & Waheed, 2006). The monetary policy transmission mechanism has several channels of monetary aggregates, credit, exchange rates, asset prices, interest rates and expectations (Warjiyo & Solikin, 2003). According to (Sugianto, Harmain, & Harahap, 2015) the Islamic monetary policy instrument is the right instrument in controlling the inflation rate. There is potential to provide a boost to output growth and suppress inflation. The main role of Islamic monetary policy is as a supporter of the real sector, but achievements can be realized through money and banking institutions which are the most important tools for reaping policies.

In a study conducted by (Noviasari, 2012) explained that the pattern of Islamic monetary policy is more effective than conventional monetary policy in dealing with reducing inflation. The contribution of the most influential variable is SBIS on inflation and the effectiveness of Islamic monetary policy. Some studies say (Zaelina, 2018) also state that the increase in output is

optimized when using Islamic monetary instruments and is able to reduce inflation. Malaysia's economic tools are supported by Islamic bank financing and deposits as an important role in controlling the economy (Sukmana & Salina H., 2010).

The COVID-19 pandemic has shaken the global economy, fluctuating economic growth, social inequality is getting bigger, unemployment hit because companies are unable to cover the losses that have befallen them. The government has begun to take a stance on the ongoing chaos, so that it is necessary to implement monetary, fiscal and other policies, most importantly efficient and effective. The implementation of monetary policy contained in Law no. 3 of 2004 concerning the mandate carried out by conventional and sharia monetary policies. Monetary policy as a control and guide to economic conditions is expected to provide price stability and increase equilibrium output. Monetary policy made by the Central Bank has the function of influencing real economic activity and prices through a transmission mechanism.

Based on the description above, is the transmission of sharia monetary policy in balance during the Covid-19 pandemic between the monetary sector and sharia financing, causing a reduction in the inflation rate. In addition to this, this study uses a model that was not previously used, namely the simultaneous equation model.

2. Literature Review

The dominance of the pedestal interest rate is very influential on the final target of financial policy in which the economy is able to run according to the declared economic development goals, economic growth, controlling exchange rates and inflation as well as inflation rates (Ascarya, 2012). Research (Syapriatama, 2017) provides an explanation that when interest rates decline, the good effect is an increase in the level of Islamic bank financing. Therefore, monetary policy is very tight in reducing the quantity of Islamic bank financing, causing a decrease in economic activity.

Research (Daniar, 2016) concludes that SWBI and wadiah are able to contain inflation but the implementation of monetary policy in Indonesia needs to be done because of differences in monetary policy in other countries. Research (Asnuri, 2017) shows that the response to changes in the BI rate affects the interbank money market rate which is transmitted to the real sector through the effect of deposit rates and credit interest rates on credit aggregates and subsequently on inflation as the final target.

• Interest Rate Channel

Economic activity is influenced by the transmission mechanism through the interest rate channel which emphasizes prices on the financial market in the real sector. So that the policies taken by the central bank will affect various interest rate developments in the financial sector and affect inflation and real output (Pratomo, 2014) In the interest rate path, changes in BI's seven days repo will affect the exchange rate. The increase in BI's seven-day repo provided an impetus to increase the difference between interest rates in Indonesia and foreign interest rates.

• Exchange Rate Channel

The transmission policy on the exchange rate channel that is contained in the influence of financial assets through the initial relationship of economic activity in one country with other countries. Exchange rate channels can be on exchange rate movements and affect aggregate

supply and demand as well as output and prices.

The fundamental difference in previous research is the use of dependent and independent variables to see how the situation describes when using the system of interest rates and exchange rates. Bank Indonesia has updated the policy in which the BI rate or policy rate is the policy interest rate that shows the monetary stance when responding to expectations of the future inflation target. The public is periodically reported on the condition of the BI rate to find out the current signal at the specified time and to see the macroeconomic situation of the economy (Magdalena & Pratomo, 2012).

3. Method

Data obtained from Bank Indonesia documents and the Financial Services Authority. The data to be used is in the form of consecutive monthly data from January 2015 to December 2021. Most of the data is obtained from the Financial Services Authority and the exchange rate and BI rate variables are obtained from Bank Indonesia.

3.1 Stationarity test

In short, the definition of stationary is data that has a tendency to approach its average value and fluctuates around its mean. If the estimation takes place using non-stationary data, it will give spurious regression results (Gujarati & Dawn, 2012). If a spurious regression is interpreted, the results of the analysis will be wrong and can result in wrong decisions taken so that the policies made will be wrong. Augmented Dickey Fuller test is also used in the stationarity test. To see how the data is stationary or not, it can be said to cause the model to be inaccurate.

3.2 Model Estimation

The transmission mechanism of sharia monetary policy using the two stage least square method is an extension of the ordinary least square method but the fundamental difference is that the equation is structural. Through the TSLS method, the endogenous variables related to the error variable are replaced with their own estimated values. This TSLS method is very appropriate to be applied to simultaneous equations whose identification conditions are overidentified (Gujarati & Dawn, 2012). The modeling of this study uses a simultaneous equation that refers to the research (Hakim, 2001) and (Montiel, 1991).

$$\textbf{BI rate: } \alpha_0 + \alpha_1 \textbf{ Ex rate}_t + \alpha_2 \textbf{ PMBY}_t + \alpha_3 \textbf{ PUABS}_t + \alpha_4 \textbf{ TBH}_t + \varepsilon_t$$

The formal specification of BI rate as follows:

α_0	**:** Constant of BI rate equation
α_1	**:** Regression coefficient of BI rate equation (i=1, 2, 3, 4)
BI rate	**:** Benchmark interest rate
Exrate	**:** Rate at which one national currency will be exchanged for another
PMBY	**:** Sharia Commercial Financing
PUABS	**:** Sharia interbank call money

TBH	: Profit sharing rate given by sharia commercial bank
ε	: Interfering error of BI rate equation
t	: t^{th} period

$$\text{Exrate: } \alpha_0 + \alpha_1 \, \text{BI rate}_t + \alpha_2 \, \text{INF}_t + \alpha_3 \, \text{PMBY}_t + \varepsilon_t$$

The formal specification of exchange rate as follows:

α_0	: Constant of exchange rate equation
α_1	: Regression coefficient of Exrate equation (i=1, 2, 3)
Exrate	: Rate at which one national currency will be exchanged for another
BI rate	: Benchmark interest rate
INF	: Decline in the value of money
ε	: Interfering error of Exrate equation
t	: t^{th} period

4. Finding and Results

4.1 Data Stasionarity Result

Before estimating the two stage least square model, the model must be free from stationarity

Table 4.1 Stasionarity result

Variable	**Symbol**	**ADF Test Statistic**	
		Level	First Difference
Profit sharing rate given by sharia commercial bank	Tbh	0.7186	0.0000
Exchange rate	Exrate	0.0320	0.0000
Inflation	Inf	0.0000	0.0000
Sharia Commercial Financing	Pmby	0.9621	0.0000
Sharia interbank call money	Puabs	0.0092	0.0000
BI rate	Birate	0.6831	0.0000

The results of the unit root test show that only one inflation is stationary at the levet level while the other variables in this research model are stationary at the first difference level.

4.2 Estimation Model

The results of the TSLS estimation on the mechanism of Islamic monetary policy in the sample period January 2015 – December 2020 (72 observations) are briefly presented below

Table 4.2 BI rate Equation

Variable	Cofficient	Statistic	Probability	Coefficient Mark
BI rate	51.25629	3.069386	0.0026	+
Exrate	4.398294	2.153215	0.0331	+
PMBY	-8.310347	-10.48080	0.0000	-
PUABS	0.290108	5.345120	0.0000	+
TBH	0.328140	6.053323	0.0000	+
R squared	0.808177	Durbin Watson	0.733811	
F Statistic	70.57008			

Based on the simultaneous model of the BI rate equation with the 2SLS method, it can be seen that the R squared result obtained is 80.8177 percent which is used to test the godness of fit regression model and it means that 80.8 percent of the BI rate can be explained by the exchange rate, total financing, interbank money market. Islamic banks and the rate of profit sharing while the remaining 19.2 percent is influenced by other variables outside the model. In the F or simultaneous test, the estimated result is 70.57 due to the Fcount FTtable 5%, it can be concluded that the exogenous variables together have a significant effect on the BI rate.

The results of the estimation analysis show that the exchange rate has significant and positive value with a coefficient of 4.39, this means that if there is an increase of 10%, the BI rate will increase by 4.39%. Furthermore, the total financing experienced a significant but negative result with a coefficient of -8.31, this means that if the other variables remain constant, every 10% increase in the total financing rate will result in a decrease in the BI rate of -8.3%. In such circumstances, Islamic bank customers experience profits. In the Islamic interbank money market, it is significant and positive, where the coefficient is 0.29, this means that if there is an increase of 10%, the BI rate will increase by 0.29%. And the same thing happened, namely with the sharia profit sharing rate which has a coefficient of 0.80 sal. This is related where if there is an increase of 10%, it will give a total of 0.80% to the BI rate.

Table 4.3 Exchange Rate Equation

Variable	Cofficient	Statistic	Probability	Coefficient Mark
Exrate	5.735093	12.65961	0.0000	+
BI rate	0.018647	4.021017	0.0001	+
Inf	-0.008367	-0.667503	0.5056	-
PMBY	0.304847	8.537603	0.0000	+
R squared	0.563015	Durbin Watson	0.857490	
F Statistic	29.20392			

Significant at $\alpha = 0.05$

Based on the simultaneous model of the exchange rate equation using the 2SLS method, it can be seen that the R squared result obtained is 56.30 percent which is used to test the godness of fit regression model and it means that 56.3 percent of the BI rate can be explained by the BI rate, inflation, and total financing. the remaining 43.7 percent is influenced by other variables outside the model. In the F or simultaneous test, the estimation result is 29.20 due to the calculated F

value F Table 5%, it can be concluded that the exogenous variables together have a significant effect on the exchange rate.

The estimation results of the analysis show that the BI rate according to research conducted by (Eris, Putro, & Kornita, 2016) the coefficient gives a number of 0.01864, which means that if there is an increase in the BI rate by 10%, the exchange rate will increase by 0.18 %. Besides that, total financing has a significant effect where the coefficient result is 0.3048, which means that if there is an increase in total financing of 1 billion, the exchange rate will increase by 300 million rupiah. Meanwhile, the inflation variable has negative and insignificant results on the exchange rate.

5. Conclusion

Based on this research, it can be concluded that the transmission mechanism of Islamic monetary policy is through the interest rate channel (BI rate 7 days repo) that the independent variables, namely the exchange rate, total Islamic bank financing, inter-Islamic money market and profit sharing are only the total financing of Islamic banks that negative value but has an effect on interest rates. Meanwhile, in the exchange rate path where the independent variables are interest rates, inflation and profit sharing rates, only one variable has no effect and has a negative significance.

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