

The Monetary Policy Transmission Mechanism In Indonesia: a Comparative Analysis

Elisa¹, Muhammad Subardin², Sri Andaiyani^{3*}

^{1,2,3} Department of Development Economics, Faculty of Economics,
Sriwijaya University

*E-mail: sriandaiyani@fe.unsri.ac.id

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Abstract

This study analyzes a comparison of the role monetary policy transmission mechanism between the interest rate channel and the exchange rate channel in Indonesia for the 2011-2020 period. The type of data is quantitative with secondary data sources, namely the Central Bureau of Statistics and Bank Indonesia. The analytical method used is the Error Correction Model (ECM). The results show that the exchange rate channel is more effective than the interest rate channel because all variables in the exchange rate channel, both in the short and long term, have a significant effect. Exchange rate and inflation variables can give a positive response to economic growth, while net exports and real interest rates give a negative response. The contribution made by the exchange rate channel is 99 percent in the short term and 72.83 percent in the long term. Meanwhile, on the interest rate channel both in the short and long term, the variable deposit rates, real interest rates, inflation, and lending rates have a significant effect on giving a negative response to economic growth. However, loan interest rates are not significant in the short term. Meanwhile, loan interest rates provide a positive response in the long term. The contribution made by the interest rate channel is 65.07 percent in the short term and 86.38 percent in the long term.

Keywords: *Monetary Policy Transmission Mechanism, Interest Rate Channel, Exchange Rate Channel*

JEL Classification: E40, E50, E52

INTRODUCTION

Monetary policy is an instrument of stability used to control the rate of inflation and steer the economy towards a sustainable level of economic growth. Changes in monetary policy affect the internal and external balance of the economy (Anwar, S., & Nguyen, LP., 2018). Therefore, achieving monetary policy objectives requires a clear understanding of transmission mechanisms in part of economic policymaking or so-called monetary policy transmission mechanisms. This mechanism describes the actions of Bank Indonesia through monetary instruments and operational targets that affect various economic and financial variables before finally affecting the ultimate-goal, namely inflation. (Hasanah, 2017).

An understanding of monetary transmission mechanisms is essential for Indonesia to improve the effectiveness of monetary policy in achieving and maintaining price and exchange rate stability to support the economic recovery process. This need is increasingly urgent because there are related considerations, namely, the need to maintain monetary stability after the 1997 crisis in supporting national economic recovery and, the increasing demands on the implementation of monetary policy with the enactment of Bank Indonesia Law, namely Law No. 23 of 1999 which has been amended by Law No. 3 of 2004 (Warjiyo, 2004).

To achieve the objectives of monetary policy to restore and create economic stability or inflation, it can occur through various channels such as interest rate channels, credit channels, exchange rate channels, asset price channels, and expectations channels (Bank Indonesia, 2020). However, some economists only focus on one channel, namely Mhiskin (1995) which makes the interest rate channel the standard for monetary policy transmission to influence inflation or prices and output (Arwatchanakarna, 2017 in Anis et al., 2019).

The interest rate channel is described under the keynesian IS-LM model. Under the interest rate channel, changes in monetary policy are finally reflected in long-term real interest rates that affect aggregate demand by changing business investment and economic decisions (Ruslan et al., 2019). While according to Rusiadi, Novalina, and Sembiring (2017) explained that the monetary policy transmission mechanism on the interest rate channel begins with changes in the central bank's interest rate which then affects the short-term interbank money market interest rate. Then it affects the interest rate on deposits and interest rates on loans in commercial banks and the rate of return on government and private bonds. Because to the rigidity of the economy, the central bank not only affects the nominal interest rate, but also affects the real interest rate. Real interest rates influence the decision to invest and consume or save.

Based on research conducted by Anis et al (2019) and Zulfa & Suseno (2018) it shows that the interest rate path runs effectively on the monetary policy transmission mechanism in influencing inflation in Indonesia. That is, central bank interest rates contribute significantly to inflation because inflation variability is dominated more by its own shock and central bank policy rates.

In addition to the interest rate channel, the exchange rate channel is also influential which operates through international trading. Expansive policies that lower short-term interest rates that make domestic goods cheaper than goods abroad (Ruslan et al., 2019). Obstfeld and Rogoff (1995) show evidence of the importance of exchange rate channels in transmission of monetary policy. An increase in net exports translates directly into an increase in aggregate demand. Taylor (1993) concluded that changes in monetary and fiscal policy instruments have a strong effect on real economic activity and Smets (1995) shows evidence of the importance of these channels in small and open economic with flexible exchange rate regimes. The exchange rate also plays an important role in promoting the stability of the Indonesia economy because the exchange rate acts as a shock absorber. With shock conditions and economic dynamics, domestic economic conditions were affected by the depreciation and appreciation the rupiah exchange rate itself (Djuranovik et al., 2020).

The study by Martin & Budi (2017) shows that the exchange rate channel is the most effective in the monetary policy transmission mechanisms in Indonesia.

However, according to Astuti et al (2020) the exchange rate channel has not been effective in driving Indonesia's economic growth. Monetary policy on the interest rate and exchange rate channels in Indonesia has a significant influence on the real economy and is effective in influencing the performance of the economic region of North Sumatra (Ruslan et al., 2019).

Investigating the effectiveness of monetary policy transmission mechanisms in Indonesia is a very important and challenging task. Because in a situation of uncertainty in the economic environment and underdevelopment of market institutions where changes in the behavior of central banks, banking, and the financial sector as well as economic actors will clearly affect the interactions that will be carried out in various economic and financial activities, and therefore will also bring changes to the of monetary policy transmission mechanism. So that further research on this problem remains relevant to do.

METHOD

The scope of this study analyzes the comparative role of the interest rate channel and the exchange rate channel in the monetary policy transmission mechanism in Indonesia. The variables used in the interest rate channel are deposit rates, loan interest rates, real interest rates, inflation, and economic growth while the variables in the exchange rate channel are exchange rates, net exports, real interest rates, inflation, and economic growth over a ten-year period namely from 2011 to 2020. Data were obtained from the Publications of Bank Indonesia and The Indonesian Central Bureau of Statistics.

The analytical method used is the error correction model (ECM), the ECM equation model in this study is as follows:

a. Short-term equations (ECM)

- Monetary policy transmission mechanism through the interest rate channel

$$\Delta Y_t = \beta_0 + \beta_1 \Delta SBD_t + \beta_2 \Delta SBP_t + \beta_3 \Delta SBR_t + \beta_4 \Delta INF_t + \beta_5 ECT + e_t \quad (1)$$

- Monetary policy transmission mechanism through the exchange rate channel

$$\Delta Y_t = \beta_0 + \beta_1 \Delta NT_t + \beta_2 \Delta Exnetto_t + \beta_3 \Delta SBR_t + \beta_4 \Delta INF_t + \beta_5 ECT + e_t \quad (2)$$

b. Long-term equations (ECM)

- Monetary policy transmission mechanism through the interest rate

$$\text{channel}Y = \beta_0 + \beta_1 SBD + \beta_2 SBP + \beta_3 SBR + \beta_4 INF + e \quad (3)$$

- Monetary policy transmission mechanism through the exchange rate channel

$$Y = \beta_0 + \beta_1 NT + \beta_2 Exnetto + \beta_3 SBR + \beta_4 INF + e \quad (4)$$

Where:

Y	= GDP	β_0	= Constant
SBP	= Loan Interest Rate	β_1	= Regression direction coefficient (variable estimate x)
SBR	= Real Interest Rates	e	= Error
SBD	= Deposit Rates	ECt	= Error Corection Term
NT	= Exchange Rate	t	= 1, 2, 3,
Exnetto	= Net Export		
INF	= Inflation		

Before estimating ECM, stationarity and cointegration testing is first carried out, if the results have shown that all variables are stationary and cointegrated, then ECM estimation testing can be continued.

After that, classical assumption testing is carried out to find out the certainty that the regression equation obtained has accuracy in estimation, is unbiased and consistent or does not deviate from classical assumptions from the results of the ECM method through normality tests, autocorrelation tests, heteroskedasticity tests, and multicollinearity tests.

Furthermore, if a regression model meets the requirements of classical assumptions, it will be used to analyze, through hypothesis testing or statistical tests, namely the F Simultaneous Significance Test, Partial Significance Test (Z Test), and Coefficient of Determination.

RESULTS AND DISCUSSION

Results

Based on the results of the unit root test in table 1 that the variables deposit rate, loan interest rate, real interest rate, exchange rate, net exports, inflation and economic growth are not any variables that are stationary or all variables are not stationary at the same level. Because all variables that have a probability of more than alpha $\alpha=5\%$ (insignificant). So the next is carried out at a higher level test, namely at the level of 1st Difference. In the 1st Difference level test, all variables are stationary at alpha $\alpha=5\%$ which means that all variables are stationary at 1st Difference.

The results of the cointegration test were obtained using the residual-based test method, employing the ADF statistical test. The residuals were found to be stationary at the level, with a probability value of 0.0321, which is less than 0.05. Therefore, it can be concluded that there is cointegration in the model used.

Table 1. Stationarity Test Results and Cointegration Test

Stationarity Test						
ADF Stat	Level		Decision	1st Difference		Decision
	T-stat	Prob.		T-stat	Prob.	
SBD	-0,441139	0,4941	Non-Stationary	-2,641,934	0,0164	Stationary
SBP	-1,301,446	0,1648	Non-Stationary	-2,659,927	0,0149	Stationary
SBR	-0,746454	0,3649	Non-Stationary	-2,848,652	0,0116	Stationary
NT	0,109236	0,6894	Non-Stationary	-4,897,090	0,0004	Stationary
Exnetto	-0,572728	0,8171	Non-Stationary	-5,648,838	0,0002	Stationary
INF	-0,824685	0,3308	Non-Stationary	-4,134,805	0,0016	Stationary
GDP	-1,033,168	0,2458	Non-Stationary	-2,404,801	0,0248	Stationary

Cointegration Test			
ADF	Level		Decision
	T-stat	Prob.	
Resid	-3.65895	0.0321	Stasionary

Source: Data processed, 2022.

Table 2. Interest Rate Channel ECM Estimation Results and Classical Assumption Test

Dependent Variable: GDP		
<i>short-term</i>		
Variable	Coefficient	z-Statistic
Deposit Interest Rate	-0.189717	-3.944718
Loan Interest Rate	-0.001307	-0.017315
Real Interest Rate	-0.018982	-1.899285
Inflation	-0.045803	-5.498802
<i>Long-term</i>		
Variable	Coefficient	z-Statistic
Deposit Interest Rate	-0.624450	-40.62688
Loan Interest Rate	0.737054	38.71938
Real Interest Rate	-0.110977	-8.003086
Inflation	-0.063930	-9.178193
<i>Short-Term Classical Assumptions Test</i>		
Test	F-Statistic	Prob.
Normality	JB 0.5822	0.7474
Autocorrelation	0.1391	0.3755
Heteroskedasticity	2.0016	0.2263
Multicollinearity	-	Centered VIF < 10
<i>Long-Term Classical Assumptions Test</i>		
Test	F-Statistic	Prob.
Normality	JB 0.2420	0.8860
Autocorrelation	1.4983	0.0822
Heteroskedasticity	2.6527	0.1470
Multicollinearity	-	Centered VIF < 10

Source: Data processed, 2022.

In the results of the estimates in Table 2 in the short and long term, the deposit rate has a negative relationship with a significant effect on economic growth of -0.189717 in the short term and by -0.624450 in the long term, meaning that any increase in the deposit rate by one percent will lead to a decrease in the economic growth rate by 18.9 percent in the short term, by 62.44 percent in the long term.

Economic growth influenced by rising deposit rates will increase incentives for fund owners to keep money in banks, thereby reducing aggregation demand, output, and economic growth.

Short-term loan interest rates have a negative relationship that has an insignificant effect, while in the long-term loan interest rates have a positive relationship and have a significant effect on economic growth of -0.001307 short-term and 0.737054 long-term meaning that any increase in short-term loan interest rates of one percent causes a decrease in economic growth of not too high, namely 0.13 percent. Meanwhile, every increase in the interest rate on long-term loans by one percent leads to an increase in economic growth of 73.70 percent.

Short-term and long-term real interest rates have a negative relationship that has a significant effect on economic growth, by -0.018982 short-term and by -0.110977 long-term meaning that any increase in real interest rates by one percent will lead to a decrease in the economic growth rate by 1.89 percent short, by 11.09 percent in the long term. Rising real interest rates will affect the increase in the real cost of borrowing, the decrease in investment expenditure, and ultimately decrease aggregate demand, output (economic growth).

Inflation in the short and long term has a negative relationship that has a significant effect on economic growth, of -0.045803 in the short term and by -0.063930 in the long term, meaning that any increase in inflation by one percent will lead to a decrease in economic growth by 4.58 percent in the short term, by 6.39 percent in the long term.

The results of the classical assumption test of interest rate channels in the short-term and long-term show that they have passed all the normality tests, autocorrelation tests, heteroskedasticity tests, and multicollinearity tests. So, it can be concluded that the regression equation model obtained has accuracy in estimates, is unbiased and consistent or does not deviate from classical assumptions.

In the results of the estimates in table 3 in the short and long term, the exchange rate has a positive relationship with a significant effect on economic growth of 0.273657 in the short term and by 0.57889 in the long term, meaning that any increase in the exchange rate by one percent will lead to an increase in the economic growth rate by 27.36 percent in the short term, by 57.88 percent in the long term.

Net exports in the short and long term have a negative relationship with a significant effect on economic growth of -0.134292 in the short term and by 0.081918 in the long term, meaning that every increase in net exports by one percent has a negative impact on decreasing the economic growth rate by 13.42 percent in the short term, by 8.19 percent in the long term.

Real interest rates in the short and long term have a negative effect on economic growth of -0.175483 in the short term and by -0.020137 in the long term, meaning that any increase in the real interest rate by one percent will lead to a decrease in the economic growth rate by 17.54 percent in the short term, by 2.01 percent. Rising real interest rates will affect the increase in the real cost of borrowing, lower investment expenditures, and ultimately lower aggregate demand, output (economic growth).

Table 3. Exchange Rate Channel ECM Estimation Results and Classical Assumption Test

Dependent Variable: GDP		
<i>short-term</i>		
Variable	Coefficient	z-Statistic
Exchange Rate	0.273657	38.15135
Net Export	-0.134292	-25.48249
Real Interest Rate	-0.175483	-63.91196
Inflation	0.032910	19.31228
<i>Long-term</i>		
Variable	Coefficient	z-Statistic
Exchange Rate	0.570889	20.43393
Net Export	-0.081918	-4.816619
Real Interest Rate	-0.020137	-2.656605
Inflation	0.112271	19.59596
<i>Short-Term Classical Assumptions Test</i>		
Test	F-Statistic	Prob.
Normality	JB 0.9448	0.6234
Autocorrelation	0.2828	0.1968
Heteroskedasticity	1.7837	0.2411
Multicollinearity	-	Centered VIF < 10
<i>Long-Term Classical Assumptions Test</i>		
Test	F-Statistic	Prob.
Normality	JB 3.8092	0.1488
Autocorrelation	4.7369	0.1179
Heteroskedasticity	0.2281	0.8189
Multicollinearity	-	Centered VIF < 10

Source: Data processed, 2022.

Inflation in the short and long term has a positive relationship with a significant effect on economic growth of 0.032910 in the short term and by 0.112271 in the long term, meaning that any increase in inflation by one percent will have a positive impact on increasing economic growth by 3.29 percent in the short term, by 11.22 percent in the long term.

The results of the classical assumption test of exchange rate channels in the short- and long-term show that they have passed all the normality tests, autocorrelation tests, heteroskedasticity tests, and multicollinearity tests. So, it can be concluded that the regression equation model obtained has accuracy in estimates, is unbiased and consistent or does not deviate from classical assumptions.

The results of the short-term model processing of the ECM of the interest rate channel that have been carried out obtained a Probability value (F-Statistic) of 0.550132 where the probability is $0.550132 > 0.05$ ($\alpha = 5\%$). While in the long term, the Probability value (F-Statistic) of 0.026701 is obtained where the probability is $0.026701 < 0.05$ ($\alpha = 5\%$) it can be concluded that all independent variables, namely deposit rates, loan interest rates, real interest rates and inflation together have an insignificant effect on the dependent variable economic growth (GDP) in the short term, but have a significant effect on the long term.

The results of the short-term model processing of the ECM of the exchange rate channel that have been carried out obtained a Probability value (F-Statistic) of

0.912923 where the probability is $0.912923 > 0.05$ ($\alpha = 5\%$). While the long-term ECM exchange rate channel that has been carried out obtained a Probability value (F-Statistic) of 0.96092 where the probability is $0.964092 > 0.05$ ($\alpha = 5\%$) it can be concluded that all independent variables, namely exchange rate, net exports, real interest rates and inflation together in the short and long term do not have a significant effect on the dependent variable of economic growth (GDP).

Based on the results of the estimated interest rate channel obtained by the value of R2 of 0.650733 in the short term and 0.863822 in the long term, which means that the variables independent deposit rate, loan interest rate, real interest rate, and inflation affect the dependent variable economic growth (GDP) in the short term by 65.07% the remaining 34.93% is influenced by other factors outside the model, While in the long term 86.38% the remaining 13.62% is influenced by other factors outside the model.

Based on the results of the exchange rate channel estimates obtained by the R2 value of 0.999907 in the short term and 0.728315 in the long term, which means that the independent exchange rate variable, net exports of real interest rates, and inflation affect the dependent variable economic growth (GDP) in the short term by 99% the remaining 1% is influenced by other factors outside the model, While in the long term it was 72.83% while the remaining 27.17% was influenced by other factors outside the model.

Discussion

Interest Rate Channel

The role of interest rate channels is very important for the economic activities of a country. A reduction in the BI Rate lowers lending rates so that demand for loans from companies and households will increase and will lower the company's capital costs to invest. This will all increase consumption and investment activities so that economic activity is more vibrant (Martin & Budi, 2017).

The results obtained in this study on the interest rate channel, that deposit rates, real interest rates, and inflation have a negative relationship and have a significant effect on economic growth in both the short and long term. This is in accordance with the hypothesis as well as the classical theory of interest rates the higher the interest rate, the smaller the desire to make investments, thus it will affect economic growth, and Keynes's theory of inflation explains that inflation has a negative relationship with economic growth, which means that increasing inflation will reduce economic growth. The higher the inflation rate, the lower the level of people's purchasing power and will have an impact on the economy, because inflation that is too high will make the economy sluggish due to excessively high prices. This research is in line with Indriyani (2016), Susanto (2017), Ardiansyah (2017), and Yazid (2019) that variable interest rates and inflation have a significant negative relationship to economic growth.

While short-term loan interest rates have a negative and insignificant relationship, but in the long run they have a positive relationship and have a significant effect on Indonesia's economic growth, meaning that when the increase in lending rates will result in increased economic growth. This condition occurs when the balance of loan interest rates with the growth of output that can be generated in the economy so that all loan funds can be fully channeled.

Based on Taylor (1995) who gave a response to the theory that says that when interest rates rise it will be inversely proportional to changes in real economic growth. When there is an increase in interest rates, it does not always reduce real economic growth. If the increase is still balanced with the movement of the real sector economy, it will increase economic growth. In accordance with Natsir's research (2011) the relationship of loan interest rates in the short-term period gives a negative response, after which the output gradually goes to a position of equilibrium. In the long term, it gives a positive response to the economy. Research of Wibowo & Mubarok (2017) Loan interest rates have a positive influence on economic growth.

The interest rate channel responds negatively, rising real interest rates will lead to a decline in economic growth. The loan interest rate is the cost of capital for investment, so the increase in interest rate will reduce incentives for borrowing funds so that investment will decrease and reduce aggregate demand. This leads to a decrease in output and economic growth. An increase in deposit rates will increase the incentive of fund owners to keep money in banks, thereby reducing aggregate demand, output, and economic growth (Astuti et al, 2020).

The short-term interest rate channel has a contribution of 65.07 percent, in the long run it has a contribution of 86.38 percent to economic growth, the economic growth response (GDP) takes less than 1 year to achieve equilibrium or equilibrium and where the pattern towards equilibrium is unreal. The variable interest rate on short-term loans that only has an effect is not significant, the rest has a significant effect, deposit rates, real interest rates, inflation and lending rates respond negatively, but long-term loan interest rates are able to give a positive response to economic growth. It can be concluded that the mechanism of monetary policy transmission through interest rate channels in Indonesia is still effective, but it is necessary to pay attention to variable interest rates to have a good impact on economic growth.

It contrasts with previous researchers by Heni Hasanah (2017) that the interest rate path has not been effective because the pass-through rate of deposit rates is higher than the interest rate on loans, but the process of adjusting loan interest rates faster and including other independent variables results in a smaller IRPT coefficient. Vice versa, the same as research conducted by Ruslan et al (2019), Astuti et al (2020) that the interest rate path is effective in influencing economic growth because it has a significant positive influence on real economic growth, a reduction in the reference interest rate can be responded well by either banking and money market interest rates, stock prices, and output.

Exchange Rate Channel

Exchange rate channels are very important after the introduction of an open economic system and a floating exchange rate system. High exchange rate fluctuations will affect the rate of inflation, economic growth, and balance of payments balance to be achieved by monetary policy (Martin & Budi, 2017).

The results of this study are not fully consistent with the hypothesis that all variables in the exchange rate channel have a negative effect. The results obtained in this study on the exchange rate channel both in the short and long term are that the exchange rate and inflation have a significant positive effect on economic

growth, which means an increase in the exchange rate and inflation results in an increase in economic growth.

The exchange rate has a positive relationship, meaning that when the exchange rate increases (the rupiah depreciates), the percentage of economic growth also increases. Vice versa if the exchange rate falls (the rupiah appreciates) then economic growth will also decline. The effect of the exchange rate on economic growth can be seen from the trade side. The trade in question is international trade of a country or export and import.

In general, a weakening of the exchange rate (depreciation) will stimulate exports and make imports more expensive, thereby reducing a country's trade deficit which will ultimately increase economic growth. Conversely, an appreciation in the exchange rate can reduce export competitiveness and make imports cheaper, causing a trade deficit that will reduce economic growth. This research is supported by Hidayatullah & Ikhsan (2017) and Ririn (2019) the exchange rate has a significant positive effect on economic growth, changes in the exchange rate respond to net exports which in turn respond to national income so that it affects economic growth.

Inflation has a positive relationship to economic growth, meaning that an increase in inflation can result in an increase in economic growth. If there is mild inflation, people are encouraged to save and invest. Indirectly, it implies to increase national income and control economic growth. The positive effect of inflation can be shown through rising prices of goods and services thereby increasing the income of business actors which will ultimately increase national income. It means that the inflation rate is still maintained, and economic growth exceeds the inflation rate, besides that this can also occur because there is a similar trend between inflation and economic growth so that statistically the results show a significant positive relationship. These results are consistent with research by Mahzalena & Juliansyah (2019), where the inflation variable has a positive relationship to economic growth.

The results of the net export variable have a significant negative effect on economic growth, which means that an increase in net exports results in a decrease in economic growth, this is not in accordance with the theory explained by Mankiw that when productivity increases, the goods produced increase, so exports will also increase exports increase, national income or economic growth also increases. Net exports have a negative relationship because the value of exports is smaller than the value of imports or is called a trade balance deficit. This deficit reduces national income and reduces domestic economic growth. The research results are supported by Wulandari & Saifudin (2019) where the variable net exports have a negative relationship to economic growth. whereas research by Pangestin et al (2021) the variable net exports have an insignificant positive relationship to Indonesia's economic growth, which is due to the fact that import values have increased rapidly while exports have also increased but slower because they have not been able to produce better, faster and cheaper goods.

The results of the real interest rate variable have a negative relationship that has a significant effect on economic growth, because an increase in real interest rates results in decreased economic growth, according to the explanation based on the classical interest rate theory, namely when the interest rate is higher, the desire to invest is smaller so that it will affect aggregate demand. The results of this

research are supported by Hazmi (2019) and Yazid (2019) that the real interest rate variable has a significant negative effect on economic growth.

The exchange rate channel transmission mechanism emphasizes that exchange rate movements can affect aggregate supply and demand developments through their impact on net exports, and subsequently output. The lower the value of foreign currency makes domestic goods relatively cheaper than foreign, thus causing an increase in net exports, aggregate demand, and output (Mhiskin, 2008). In general, movements in the exchange rate which are increasingly appreciated can encourage increased exports. On the import side, the appreciation of the domestic currency was also able to reduce imports due to the relatively low dependence on imported goods. So that the appreciation of the domestic currency can have a positive effect on the trade balance and economic growth in Indonesia.

The exchange rate channel in the short term has a contribution of 99 percent, in the long term it has contributed 72.83 percent to economic growth, the economic growth response (GDP) requires economic growth to take less than 1 year to reach equilibrium or balance and where is the pattern for towards real balance. All variables in the exchange rate channel both in the short and long term have a significant effect, the exchange rate and inflation can respond positively, while net exports and real interest rates are able to provide a negative response to economic growth. It can be concluded that the monetary policy transmission mechanism through the exchange rate channel in Indonesia is still running effectively, however, attention still needs to be paid to the interest rate and net exports variables to be able to maintain the process of balancing the economy. This research is in line with Ririn (2019) that the exchange rate channel works effectively for economic growth in Indonesia.

Comparison of Monetary Policy Transmission Mechanisms of the Interest Rate Channel and the Exchange Rate Channel

The interest rate channel in the short term has a contribution of 65.07 percent, in the long term it has a contribution of 86.38 percent to economic growth, the economic growth response (GDP) takes less than 1 year to reach equilibrium or balance and where is the pattern for towards balance is unreal.

The exchange rate channel in the short term has a contribution of 99 percent, in the long term it has a contribution of 72.83 percent to economic growth, the response to economic growth (GDP) takes less than 1 year to reach equilibrium or balance and where is the pattern towards a real balance.

A more effective channel, namely the exchange rate channel compared to the interest rate channel in influencing economic growth in Indonesia, because in the exchange rate channel all variables have a significant effect, exchange rate and inflation variables can have a positive impact, and all variables in the exchange rate channel have a significant contribution greater on economic growth than the interest rate channel where only the loan interest rate variable has a positive impact and even then only in the long term but the effect is not significant. This is in line with research by Martin & Budi (2017) that the exchange rate channel is the most effective in the monetary policy transmission mechanism in Indonesia.

Meanwhile, the research conducted by Astuti et al (2020) differs in opinion which states that the most effective channel is the interest rate and asset channel, while the exchange rate channel has not been effective because changes in exchange

rates have not been able to affect net exports and output. Then research by Yusuf (2016) which compared four monetary policy transmission channels in Indonesia showed that the interest rate channel was the most effective because the RPUAB shock received a strong and fast response to the final target of monetary policy. And Nisa et al (2018) concluded that the most effective channel is the expectation channel in managing inflation between interest rate channels and credit channels.

CONCLUSION

The interest rate channel in the short term contributes 65.07 percent, while in the long term, it contributes 86.38 percent to economic growth. The response to economic growth takes less than 1 year to reach equilibrium, but the pattern towards balance is not realistic. Short-term loan interest rates have an insignificant effect, whereas deposit rates, real interest rates, inflation, and lending rates all yield a negative response. However, long-term loan interest rates can have a positive impact on economic growth. In conclusion, the monetary policy transmission mechanism through the interest rate channel in Indonesia is still operating effectively.

In the short term, the exchange rate channel contributes 99 percent, and in the long term, it has contributed 72.83 percent to economic growth. The response to economic growth requires less than 1 year to reach equilibrium, but the pattern toward genuine balance remains elusive. All variables in the exchange rate channel, both in the short and long term, exhibit significant effects, with the exchange rate and inflation responding positively, while net exports and real interest rates provide a negative response to economic growth. It can be concluded that the monetary policy transmission mechanism through the exchange rate channel in Indonesia is still operating effectively.

The exchange rate channel emerges as the preeminent catalyst for economic growth in Indonesia, demonstrating its superiority over the interest rate channel due to the comprehensive significance of all its variables. Notably, exchange-related factors and inflation exhibit the capacity to impart a favorable impact, and collectively, the variables within the exchange rate channel wield a more substantial and pronounced influence on economic growth compared to the interest rate channel, where the sole positive contributor is the long-term loan interest rate, albeit confined to the long term, while the remaining variables yield adverse effects.

For policy recommendations, the central bank should prioritize the exchange rate channel in its monetary policy framework, closely monitor inflation and real interest rates, and promote export-led growth to enhance the overall effectiveness of monetary policy in stimulating economic growth in Indonesia. Regular assessment and flexibility in policy implementation are essential to adapt to changing economic conditions.

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