
**MONETARIST VS KEYNESIAN APPROACH IN THE MONETARY
POLICY TRANSMISSION MECHANISM BEFORE AND AFTER THE
IMPLEMENTATION OF THE INFLATION TARGETING FRAMEWORK
IN INDONESIA**

Ahmad Fauzi Abdurrohman¹, Lukman Hakim², Dwi Prasetyani³

¹Sebelas Maret University, Master of Economics and Development Study,
Jl. Ir. Sutami, Suarkarta 36, Indonesia

²Sebelas Maret University, Faculty of Economics and Business,
Jl. Ir. Sutami, Suarkarta 36, Indonesia

³Sebelas Maret University, Faculty of Economics and Business,
Jl. Ir. Sutami, Suarkarta 36, Indonesia

Abstract

This research was conducted to determine how effective the quantity channel (monetarist approach) and the interest rate channel (Keynesian approach) are in transmitting monetary policy in achieving the final target of monetary policy, namely inflation before and after the implementation of the Inflation Targeting Framework in Indonesia. This research was conducted in the period before the application of the Inflation Targeting Framework (1997-2008) and after the implementation of the Inflation Targeting Framework (2009-2020) using the Vector Error Correction Model (VECM) method. The lag length criteria test shows that the quantity channel before and after the application of the Inflation Targeting Framework has a lag of 3 months and the interest rate channel has a lag of 2 months. Meanwhile, the results of the variance decomposition of the Inflation Targeting Framework show that the interest rate channel is more effective in transmitting monetary policy. The final conclusion of this research is that the interest rate channel is more effective in transmitting monetary policy before and after the implementation of the Inflation Targeting Framework in Indonesia.

Keywords: Quantity Channel, Interest Rate Channel, Inflation Targeting Framework

INTRODUCTION

The monetary policy transmission mechanism can be divided into two channels, as stated by Oh (1999) who argues that there are two lines of monetary policy transmission mechanism, namely the quantity channel (monetarist) and the price channel (keynesian). The quantity channel with the monetarist approach consists of the money quantity channel and the credit quantity channel. Meanwhile, the price channel using the Keynesian approach consists of the interest rate channel, the exchange rate channel, and the asset channel.

Meanwhile Lockett (1984) has the view that there are two main streams of looking at money in the economy, namely the monetarist and the Keynesian flow. The main difference between these two flows is the influence of monetary policy on the real economy. Monetary flow is of the view that money will only affect inflation and will not affect the real economy. On the other hand, Keynesian views that money will affect inflation and also the real economy.

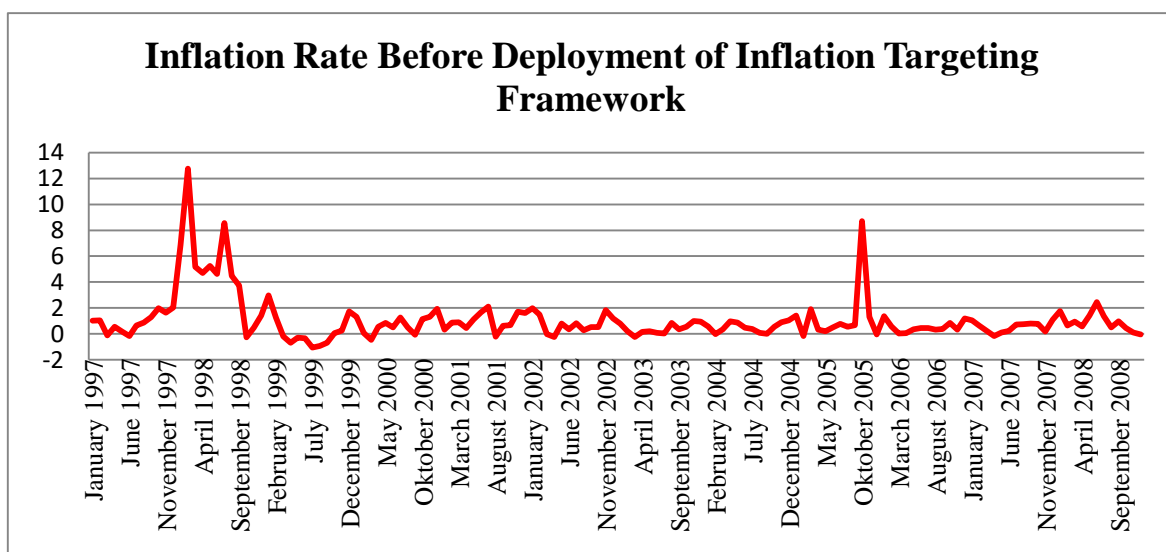
Both of approaches to the monetary policy transmission mechanism, both the monetarism approach and the Keynesian approach can be carried out by the central bank as the monetary authority in the framework of pursuing the final economic goals, namely economic growth, job availability, price stabilization and a balanced balance of payments.

International economic events will have an impact on the domestic economy directly or indirectly. The case example of the financial crisis in Southeast Asia in 1998 contributed to a drastic decline in the rupiah currency and caused the monetary crisis in Indonesia. This monetary crisis in the end also had an impact on the real economy, because the financial shock that occurred also had an impact on production activities which had an impact on the real economy. Global economic turmoil emerged again in 2005 as a result of skyrocketing world oil prices. The phenomenon of international phenomena that occurs and causes shocks to the domestic economy also affects price stability in the market.

For this reason, a policy from the monetary authority (Bank Indonesia) is needed in order to maintain price stability as indicated by controlled inflation. Maggi and Saraswati (2013) further explain that after the amendment of Law Number 23 of 1999 to Law Number 3 of 2004 concerning Bank Indonesia, Indonesia's monetary policy is focused on achieving a single target, namely inflation or commonly referred to as the Inflation Targeting Framework (ITF).

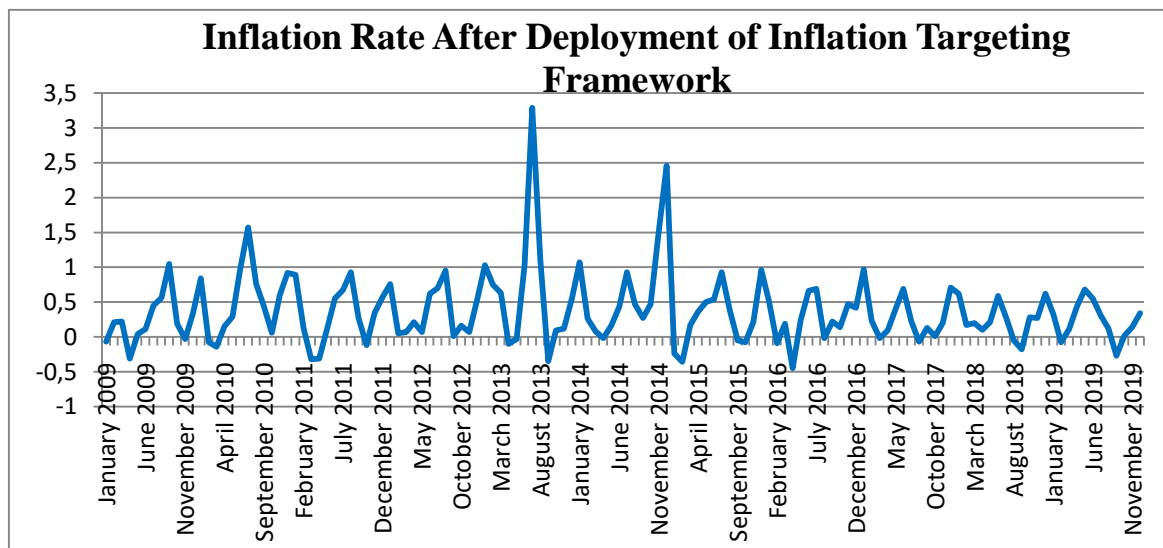
The Inflation Targeting Framework is a monetary policy framework using a single target setting method, namely inflation. The step used in the inflation targeting framework method is that the central bank publishes related inflation targets to be achieved (Mankiw, 2010).

Curve 1. Inflation Rate Before Deployment of Inflation Targeting Framework



source: bps.go.id

Curve 2. Inflation Rate After Deployment of Inflation Targeting Framework



Source: bps.go.id

Based on the graph above, it can be seen that in the period before the implementation of the ITF in Indonesia, the inflation rate fluctuated and experienced imbalances. Inequality can be seen in early 1998 inflation which occurred in the range of 13%, then fell and then rose again in mid-1998 which reached 8%. Furthermore, inflation fell again and was relatively stable until in October 2005 the inflation rate soared again at 8%. On the other hand, when the inflation targeting framework is relatively controlled, the inflation rate is at 1% and a maximum of 3%.

The successful application of the inflation targeting framework needs to be maintained in order to maintain stability and the inflation target as determined. However, in accordance with Oh's (1999) opinion that there are two channels in the monetary policy transmission mechanism, namely the quantity channel (monetarist) and the price channel (keynesian), it is necessary to study what approaches are most effectively applied in the inflation targeting framework system in Indonesia. This study will examine the effect of the quantity and price channel on inflation that occurs before and after the implementation of the inflation targeting framework in Indonesia.

Mishkin (2001) explains that the effectiveness of the transmission mechanism of monetary policy can be measured from two indicators, namely the speed (time lag) required by monetary policy in controlling inflation and the second is how much power each variable has in responding to the shock of monetary policy instruments.

Literature Review

Monetary Policy Transmission Mechanism

Taylor (1995) argues that the monetary policy transmission mechanism is a process by which monetary policy that has been made by the monetary authority can be transmitted and affect in economic growth and inflation. The point is that the monetary policy transmission mechanism is a variety of channels of distribution used by monetary policy in order to influence the final target of monetary policy, namely economic growth and inflation.

Meanwhile, Mishkin (1996) argues that the monetary policy transmission mechanism is a complex process and in economic theory it is often termed a "black box". This opinion of Mishkin (1996) is based on the argument that in essence monetary policy will certainly affect the economic growth and inflation, but it cannot be ascertained how the work of economic policy in influencing economic growth and inflation.

View of Keynesian and Monetarist in Monetary Policy Transmission Mechanism

Monetarist groups assume that monetary policy will only affect the nominal value of aggregate demand through prices with a relatively stable effect. This is based on the assumption of the monetarist group which assumes that the economy runs perfectly and has flexibility when there are differences in supply and demand, so that price fluctuations are only affected by the money supply. Monetary policy by influencing the money supply will affect price developments. This view is in line with Friedman's (1968) opinion which states that inflation will always exist and be everywhere and is a monetary phenomenon.

It is different from the Keynesian group, which has the view that economic problems are very complex, so that controlling the amount of money in circulation alone is deemed insufficient in overcoming economic problems because economic activity is strongly supported and influenced by factors other than money. In conditions like this, when there is an economic shock, especially in terms of monetary policy in the form of easing or tightening, it will have an impact on short-term economic escalation and in the long run it will affect price developments (Warjiyo, 2004). So the view of the Keynesian group is that monetary policy will have an impact on the real economy.

Keynesian and Monetarist Version of Monetary Policy Transmission Mechanism

According to Oh (1999), the monetary policy transmission channel is divided into two channels, namely the quantity channel with the monetarist approach and the price channel with the Keynesian approach. The monetarist approach with the quantity channel is proxied by the quantity pathway in the amount of money in circulation and the quantity of credit. This monetary approach is often termed a direct route because changes in the amount of money in circulation will have a direct impact on public consumption and ultimately have an impact on increasing income.

Meanwhile, the credit quantity channel is a criticism of the interest rate channel which is considered a component of the interest rate which is very difficult to identify as a capital price

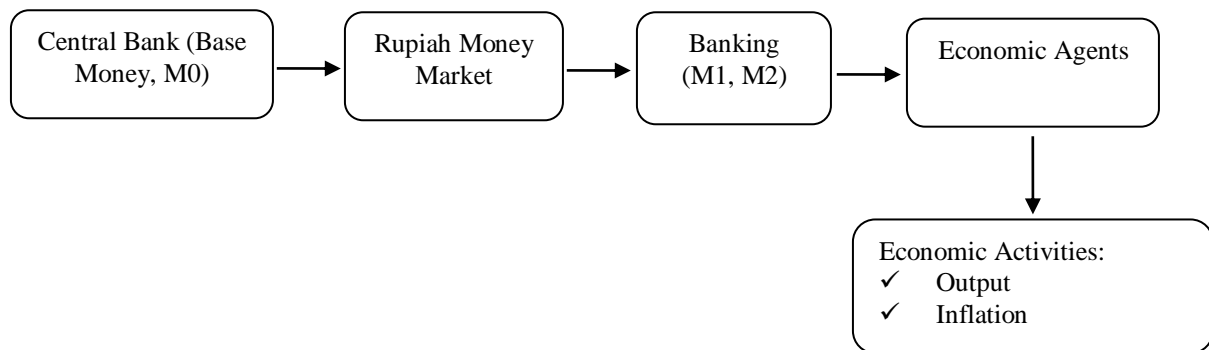
variable. This approach assumes that an increase in the money supply will have an impact on increasing credit and will increase investment and income.

Quantity Channel (Monetarist Approach)

The quantity channel or what is often called the direct channel is based on classical economic theory which assumes that the role of money in an economy is based on the Quantity Theory of Money described by Fisher (1911). This theory forms the basis of an analysis of the relationship between the development of the money supply and inflation. This equation model is expressed by $M V = P T$. Where M is the money in circulation and V is the velocity of money. Meanwhile P is the price level and T is the real output.

In the view of monetarists using the quantity path, the economy is in balance so that the money supply (M) is multiplied by the velocity of money (V) equals the amount of output produced and traded in an economy (PT). In quantity theory, this is more directed at the demand for money made by the community only for the purposes of transactions (Pohan, 2008).

Figure 1. Quantity Channel of Money



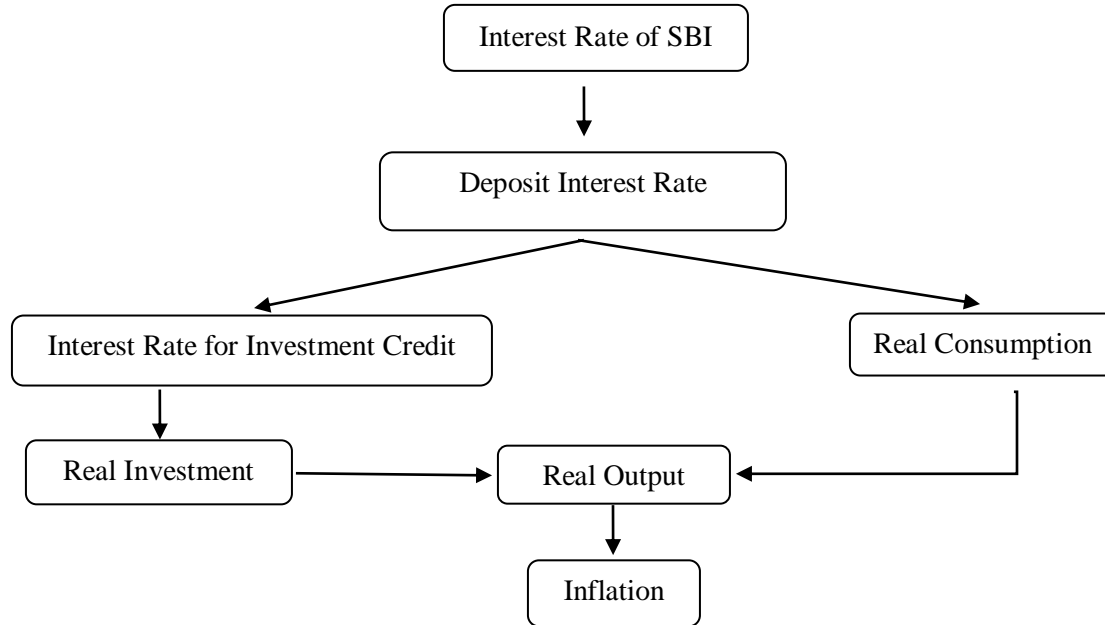
Source: Warjiyo (2004)

The quantity channel in the monetary policy transmission mechanism consists of two stages. The first stage is for the central bank to carry out monetary operations in the context of controlling the amount of money circulating in the public (M1 and M2) by regulating base money (M0) as the target of monetary policy. The second stage is that banks will make arrangements related to liquidity in the form of reserves that can be used immediately in the form of lending and or other loan distribution.

Interest Rate Channel (Keynesian Approach)

Interest rates are a quite crucial channel in monetary policy because interest rates will greatly affect household spending (Mishkin, 2001). According to Mishkin (2001), the interest rate channel in the monetary policy transmission mechanism will affect the price of capital and changes in interest income for depositors of money in banks.

Figure 2. Interest Rate Channel in Monetary Policy Transmission Mechanism



Source: Modified by Warjiyo (2004)

When interest rates increase, the price of capital will increase and have an impact on decreasing investment interest and decreasing aggregate supply due to limited production. On the other hand, an increase in interest rates will result in an increase in the income of savers from interest income. The result is that public consumption will decrease because the funds owned are prioritized to be deposited in banks with relatively high interest income. This view is also supported by Nualtaranee (2001) which states that interest rates and asset prices that have a strong relationship are the dominant factors in the monetary policy transmission mechanism.

Indicators for Measuring The Effectiveness of The Monetary Policy transmission Mechanism

Mishkin (2001) states that in measuring the effectiveness of the monetary policy transmission mechanism two indicators are used:

1. Time lag, namely how quickly the variables in one channel respond to changes in the shock of monetary policy instruments until the final inflation target can be achieved.
2. The magnitude of the impact of the variable forces in each monetary transmission channel in response to monetary policy shocks until the final inflation target can be achieved.

The two indicators above are obtained by performing the optimum lag test and Impulse Response Function (IRF) and Variance Decomposition (VD).

Previous Research

Wulandari (2012) in her study found that the interest rate channel plays a very important role in monetary policy to keep inflation under control. Meanwhile Roeroe et. al (2020) argues that interest rate channel have positif and significant influence to inflation. The same argue from Iddrisu and Imhotep (2020), that reasearching on monetary policy in South Africa. They found that interest rate channel to be operative on monetary policy in South Africa. Kose, et.al (2012) researching the effect of interest rates and inflation after the implementation of the inflation targeting framework in Turkey. The results of the study show that monetary policy through the inflation targeting framework can affect interest rates, and ultimately control inflation as targeted.

Nguyen (2015) in his study about the effects of fiscal deficit and money M2 supply on inflation from selected economies of Asia. He found that money M2 supplay has significant and positive affect on inflation. Jiang, et. al (2015) that study in China about money growth and inflation, they found that between M0 growth, M1 growth, and M2 growth has a relationship to inflation and support modern quantity theory of money.

Hypothesis Development

Based on the background and the theory, the hypotheis from this study are:

- H₁: Presumed that M1 and M2 has affects on inflation before implementation of inflation targeting framework.
- H₂: Presumed that M1 has affects on inflation after implementation of inflation targeting framework.
- H₃: Presumed that interest rate of investmrnt credit has affects on inflation before implementation of inflation targeting framework.
- H₄: Presumed that interest rate of investmrnt credit has affects on inflation after implementation of inflation targeting framework.
- H₅: Presumed that interest rate channel has more effectivess in monetary policy transmission mechanism than quantity of money channel.

RESEARCH METHODOLOGY

Data

This study uses time series data with the period January 1997 - December 2020. The data used is monthly data that obtained from the Indonesian Economic and Financial Statistics (SEKI) issued by Bank Indonesia and the Central Statistics Agency (BPS).

Research Operational variabel

Table 1. Research Operational variabel

No	Variabel	Variabel Definition	Unit	Data Form	Source
1	Inflasi (LIHK)	Inflation is an increase in prices that occurs continuously at one time and affects other price increases. The indicator of inflation is the Consumer Price Index (CPI). Data in the form of ln.	precentage	Monthly	BPS
2	Quantity of Money M0 (LM0)	M0 is base money. Data in the form of ln.	Billion Rupiah	Monthly	SEKI BI
3	Quantity of Money M1 (LM1)	M1 is the money supply in a narrow sense consisting of base money (M0) plus demand deposits. Data in the form of ln.	Billion Rupiah	Monthly	SEKI BI
4	Quantity of Money M2 (LM2)	M2 is the amount of money in circulation in a broad sense consisting of M1 plus banking deposits in the form of saving deposits and time deposits. The data used are in the form of ln.	Billion Rupiah	Monthly	SEKI BI
5	Interest Rate of Invesment Credit (RKI)	The investment credit interest rate (RKI) is the credit interest rate at commercial banks that applies to investment loans.	Percentage	Monthly	SEKI BI
6	Deposit Interest Rate (RDEP)	The deposit fee rate (RDEP) is the interest rate at commercial banks with a period of 1 month	Precentage	Monthly	SEKI BI

Monetary Policy Transmission Channel Variables

In this study, the variables are grouped based on the Keynesian and Monetarist monetary transmission channel according to the views of Mishkin (2001) and Oh (1999) which are then adjusted to the monetary policy transmission framework set by Bank Indonesia (Warjiyo, 2004). This study examines two monetary transmission lines that represent the Keynesian and monetarist approaches, namely:

1. The money quantity path of the monetarist approach consists of the variables lnM0 (LM0), lnM1 (LM1), lnM2 (LM2) and inflation (LIHK).
2. The interest rate path for the cost of capital effect of the Keynesian approach consists of the variable deposit interest rate (RDEP), investment credit interest rate (RKI), and inflation (LIHK).

Data Analysis

The data analysis technique in this study uses the Vector Error Correction Model (VECM). The steps taken in testing with the Vector Auto Regression (VAR) or VECM model are several tests (Widarjono, 2007), including: first, the data stationarity test. If the data is stationary at the level, then the technique used is VAR Level. If the data is not stationary at the level, then a cointegration test is performed. If there is cointegration, then VECM technique is used, but if there is no cointegration, then the technique used is VAR first difference. Furthermore, the optimum lag testing, Impulse Response Fuction (IRF) and Variance Decomposition (VD).

Research Model

The Monetarist Approach of the Quantity Channel Model

The money quantity channel model is composed of four variables, namely LM0, LM1, LM2, lnIHK. The Var model of the money quantity channel with a monetarist approach are:

$$LM0t = C1 + a1i \sum LM0t-k + a1i \sum LM1t-k + a1i \sum LM2t-k + a1i \sum LIHKt-k + \epsilon i \tag{1}$$

$$LM1t = C2 + a2i \sum LM0t-k + a2i \sum LM1t-k + a2i \sum LM2t-k + a2i \sum LIHKt-k + \epsilon i \tag{2}$$

$$LM2t = C3 + a3i \sum LM0t-k + a3i \sum LM1t-k + a3i \sum LM2t-k + a3i \sum LIHKt-k + \epsilon i \tag{3}$$

$$LIHKt = C4 + a4i \sum LM0t-k + a4i \sum LM1t-k + a4i \sum LM2t-k + a4i \sum LIHKt-k + \epsilon i \tag{4}$$

The VECM equation for the transmission of monetary policy on the money quantity channel using the monetarist approach can be formulated as follows:

$$\Delta X_t = a_0 + A_1 \Delta X_{t-k} + a_2 \text{ect} + \epsilon t \tag{5}$$

Where:

Xt : Vector 4X1 of each variable M0, M1, M2 and CPI

a0: Vector 4X1 of the intercept (constant)

a1: 4X1 matrix of coefficients

a2: The 4X1 vector of the error correction model

εt: 4X1 error term vector

Δ: Data in the form of the first derivative

t: Time (month)

k : Optimal lags based on AIC and SC

The Keynesian Approach of the Interest Rate Channel Model

The interest rate channel model for the cost of capital effect is composed of three variables, namely RDEP, RKI, and LIHK. The Var model of the interest rate channel with a keynesian approach are:

$$RDEPt = C1 + a1i \sum RDEPt-k + a1i \sum RKIt-k + a1i \sum LIHKt-k + \epsilon i \tag{6}$$

$$RKI = C2 + a2i \sum RDEPt-k + a2i \sum RKIt-k + a2i \sum LIHKt-k + \epsilon i \tag{7}$$

$$LIHK = C3 + a3i \sum RDEPt-k + a3i \sum RKIt-k + a3i \sum INFt-k + \epsilon i \tag{8}$$

The VECM equation for the transmission of monetary policy on the interest rate channel of the cost of capital effect with the Keynesian approach can be formulated as follows:

$$\Delta X_t = a_0 + A_1 \Delta X_{t-k} + a_2 \text{ect} + \epsilon_t \tag{9}$$

Where:

X_t : Vector 3X1 of each variable M0, M1, M2 and CPI

a_0 : Vector 3X1 of the intercept (constant)

a_1 : 3X1 matrix of coefficients

a_2 : The 3X1 vector of the error correction model

ϵ_t : 3X1 error term vector

Δ : Data in the form of the first derivative

t : Time (month)

k : Optimal lags based on AIC and SC

RESULT

Unit Root Test

The use of the Augmented Dickey-Fuller (ADF) Test method in this study was carried out for unit root testing (Dickey and Fuller, 1979).

Table 2. Unit Root Test Result Before Implementation ITF in Indonesia

Variable	Inflation before ITF policy unit root test with ADF test				Integrity Level
	level		1 st difference		
	t-stat	prob	t-stat	prob	
ln_ihk	-1.923617	0.3207	-13.17206	0.0000	1st difference
ln_m0	-1.542381	0.5094	-10.86319	0.0000	1st difference
ln_m1	-1.057581	0.7313	-13.01203	0.0000	1st difference
ln_m2	-2.026315	0.2754	-11.86588	0.0000	1st difference
rdep	-2.459877	0.1276	-8.089360	0.0000	1st difference
rki	-1.490418	0.5358	-13.72370	0.0000	1st difference

Source: Processing Results with Eviews

Table 2. Unit Root Test Result After Implementation ITF in Indonesia

Variable	Inflation after ITF policy unit root test with ADF test						Integrity Level
	level		1 st difference		2 nd difference		
	t-stat	prob	t-stat	prob	t-stat	prob	
ln_ihk	-2.146668	0.2270	-11.91556	0.0000	-	-	1st difference
ln_m0	-3.236258	0.0201	-	-	-	-	Level
ln_m1	-0.878441	0.7924	-2.393676	0.1455	-10.91832	0.0000	2nd difference
ln_m2	-2.140575	0.2293	-1.910368	0.3267	-8.243014	0.0000	2nd difference
rdep	-1.400673	0.5804	-4.065782	0.0015	-	-	1st difference
rki	1.768341	0.9997	-4.273860	0.0007	-	-	1st difference

Source: Processing Results with Eviews

The result of the unit root test shows that almost all variables before and after the implementation of the inflation targeting framework in Indonesia are stationary in first differences. With the results of this unit root test, the next step is cointegration testing to determine whether the method to be used to process data uses VAR first difference or Vector Error Correction Model (VECM).

Cointegration Test

Table 3. Johansen Cointegration Test Before Implementation ITF in Indonesia

	Trace stat	Critical value	Prob	Max-Eigen	Critical Value	Prob
None	335.9920	95.75366	0.0000*	98.78522	40.07757	0.0000*
At Most 1	237.2068	69.81889	0.0000*	69.79887	33.87687	0.0000*
At Most 2	167.4079	47.85613	0.0000*	55.04345	27.58434	0.0000*
At Most 3	112.3645	29.79707	0.0000*	48.50894	21.13162	0.0000*
At Most 4	63.85551	15.49471	0.0000*	36.74582	14.26460	0.0000*
At Most 5	27.10969	3.841466	0.0000*	27.10969	3.841466	0.0000*
Information	Sign 5%*	5-cointegration		Sign 5%*	5-cointegration	

Source: Processing Results with Eviews

Table 4. Johansen Cointegration Test After Implementation ITF in Indonesia

	Trace stat	Critical value	Prob	Max-Eigen	Critical Value	Prob
None	237.0070	95.75366	0.0000*	76.04907	40.07757	0.0000*
At Most 1	160.9579	69.81889	0.0000*	66.64208	33.87687	0.0000*
At Most 2	94.31582	47.85613	0.0000*	42.74714	27.58434	0.0003*
At Most 3	51.56868	29.79707	0.0000*	31.01502	21.13162	0.0015*
At Most 4	20.55366	15.49471	0.0079*	14.59739	14.26460	0.0443*
At Most 5	5.956267	3.841466	0.0147*	5.956267	3.841466	0.0147*
Information	Sign 5%*	5-cointegration		Sign 5%*	5-cointegration	

Source: Processing Results with Eviews

Cointegration test results using the Johansen Cointegration technique, show that all variables before and after the implementation of ITF in Indonesia have a long-term relationship and can be estimated long-term. Based on the results of the cointegration test, the most appropriate model to use is the Error Correction Model (VECM).

Lag Length Criteria

Table 5. Lag Length Criteria Before Implementation ITF in Indonesia

Lag	Quantity Channel (M0,M1,M2,IHK)		Invesment Interest Rate Channel (rdep,rki,IHK)		
	Akaike criterion	information Schwarz criterion	Akaike criterion	information Schwarz criterion	Schwarz criterion
1	-11.82690	-11.24133	5.739856		6.116294
2	-12.12313	-11.19861	5.779315		6.346632
3	-12.08076	-10.81408	5.571490		6.331498
4	-12.45826	-10.84615	5.324371		6.278911
5	-12.50240	-10.54154	5.294164		6.445106
Conclusion	The optimum lag is in the 3rd lag based on the Schwarz Criterion		The optimum lag is in the 3rd lag based on the Akaike Information Criterion and The Schwarz criterion		

Source: Processing Results with Eviews

From the results of the lag length criteria test before the implementation of the ITF in Indonesia, it shows that the effective quantity channel has an impact on the 3rd lag or in the third month after the implementation of monetary policy in Indonesia. This is different from the interest rate channel before the implementation of the ITF in Indonesia, which shows that the effective interest rate channel in the second lag or the effective interest rate channel has an impact on monetary policy targets after two months of implementing monetary policy through the interest rate channel.

Table 6. Lag Length Criteria Before Implementation ITF in Indonesia

Lag	Quantity Channel (M0,M1,M2,IHK)		Invesment Interest Rate Channel (rdep,rki,IHK)		
	Akaike criterion	information Schwarz criterion	Akaike criterion	information Schwarz criterion	Schwarz criterion
1	-17.75622	-17.17065	-6.119069		-5.742631
2	-17.92833	-17.00382	-6.284074		-5.716757
3	-18.04093	-16.77425	-6.275493		-5.515485
4	-18.00333	-16.39122	-6.264104		-5.309565
5	-18.27840	-16.31753	-6.184517		-5.033576
conclusion	The optimum lag is in the 3rd lag based on the Akaike Information Criterion		The optimum lag is in the 3rd lag based on the Akaike Information Criterion		

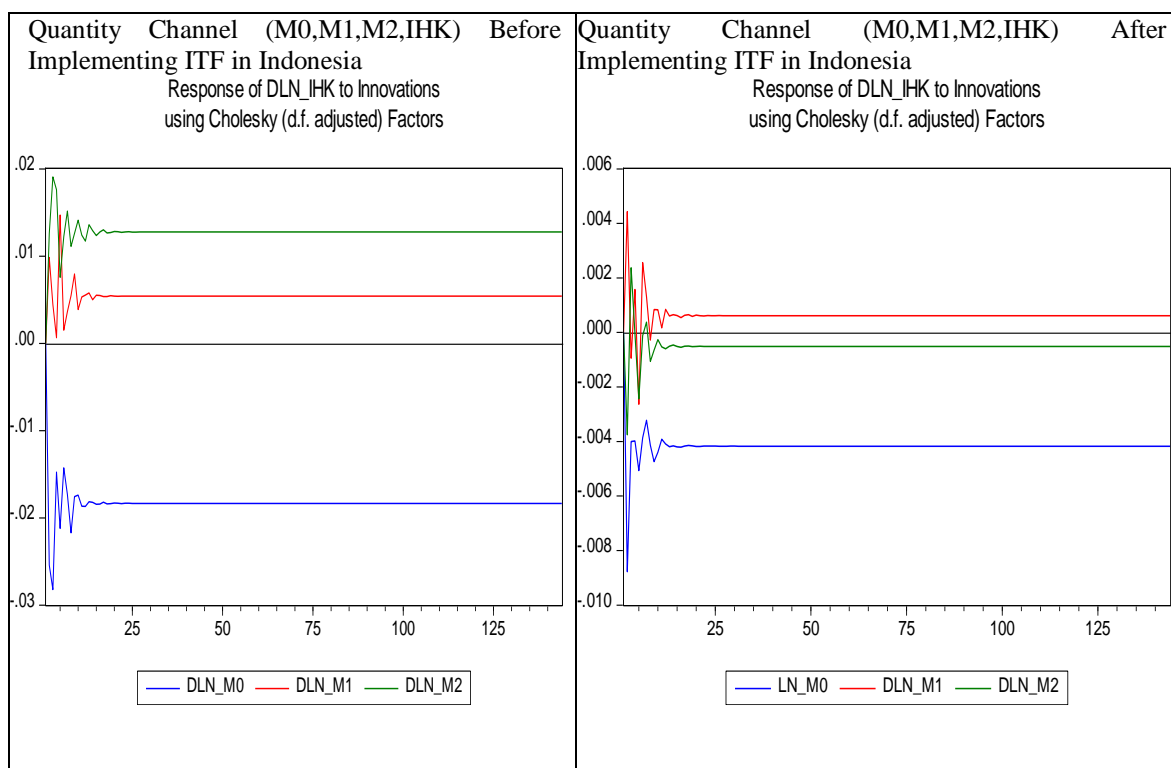
Source: Processing Results with Eviews

From the results of the lag length criteria test after the implementation of the ITF in Indonesia, it shows that the effective quantity channel has an impact on the 3rd lag or in the third month after the implementation of monetary policy in Indonesia. In contrast to the interest rate channel after the implementation of the ITF in Indonesia, which shows that the effective interest rate channel in the second lag or the effective interest rate channel has an impact on monetary policy targets after two months of implementing monetary policy through the interest rate channel.

Impulse Response Function

Quantity Channel's Impulse Response Function

Figure 3. Quantity Channel's Impulse Response Function Before and After Implementing ITF in Indonesia

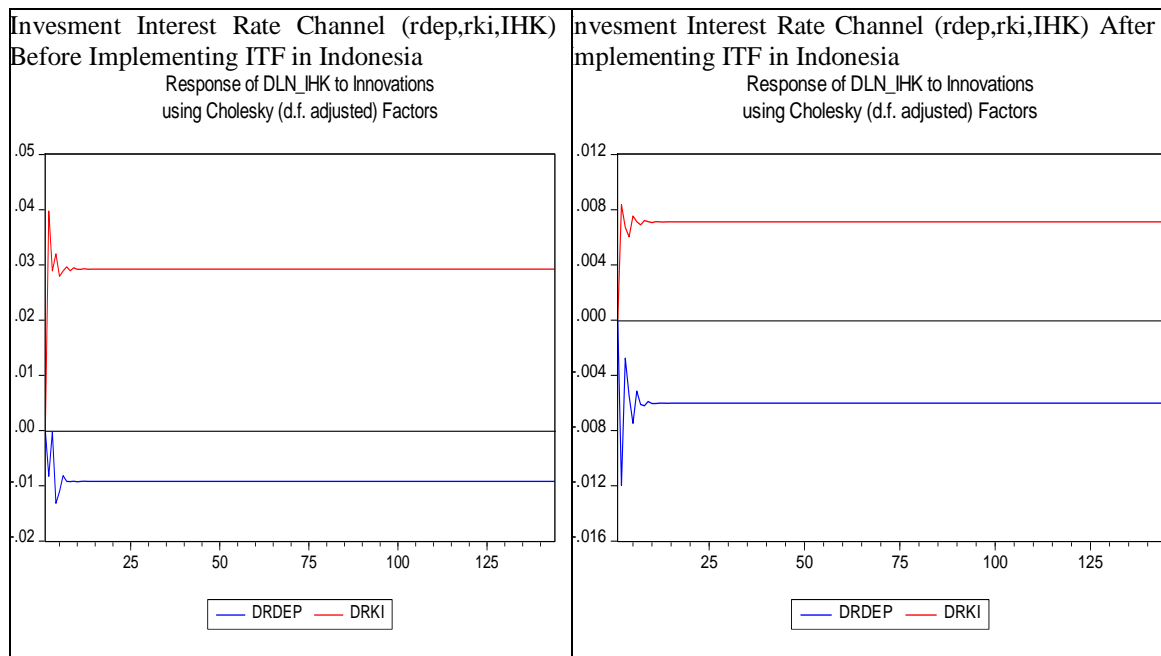


Source: Processing Results with E views

From the results of the Impulse Response Function test on the quantity channel before and after the implementation of ITF in Indonesia. In the period before the implementation of the ITF in Indonesia, M2 had the strongest influence on the inflation rate, followed by M1. Meanwhile, base money (M0) has a weak influence on the inflation rate. At the time after the implementation of the ITF in Indonesia, M1 had the strongest influence on the inflation rate. Meanwhile, base money (M0) and M2 have a weak influence on inflation as the final target of monetary policy.

Investment Interest Rate Channel’s Impulse Response Function

Figure 4. Investment Interest Rate Channel’s Impulse Response Function Before and After Implementing ITF in Indonesia



Source: Processing Results with Eviews

From the results of the Impulse Response Function test on the interest rate channel before and after the implementation of the ITF in Indonesia. In the period before and after the implementation of the ITF in Indonesia, the investment credit interest rate (rki) had the strongest influence on the inflation rate. Meanwhile, the deposit rate (RDEP) has a weak influence on the inflation rate as the final target of monetary policy.

Variance Decomposition

Quantity Channel’s Variance Decomposition Before Implementation ITF in Indonesia

Table 7. Quantity Channel’s Variance Decomposition Before Implementation ITF in Indonesia

Period	S.E.	DLN_IHK	DLN_M0	DLN_M1	DLN_M2
1	0.120209	100.0000	0.000000	0.000000	0.000000
5	0.149867	85.15525	9.396731	1.484130	3.963886
143	0.551399	74.92746	15.93761	1.431455	7.703471
144	0.553248	74.92203	15.94117	1.431467	7.705336
Cholesky Ordering: DLN_IHK DLN_M0 DLN_M1 DLN_M2					

Source: Processing Results with Eviews

From the results of the Quantity Channel’s Variance Decomposition Test before the implementation of the ITF in Indonesia, it can be seen that in the fifth month the contribution of LM0 shocks to the LIHK was 9.39%, LM1 shocks 1.48%, LM2 3.96%, and own shocks (LIHK) 85.15%. In month 143, the contribution of LM0 shocks to the LIHK was 15.93%, LM1 shocks 1.43%, LM2 7.7%, and own shocks (LIHK) 74.92%. And at the end of the observation period or in the 144th month, the contribution of LM0 shocks to the LIHK was 15.94%, LM1 1.43%, LM2 7.7%, and own shocks (LIHK) 74.92%.

This observation shows the results of the dominant contribution of the LM0 and LM2 variables which are consistent with the LIHK variable. This finding shows that the variables LM0 and LM2 are important variables in influencing inflation on the quantity channel before the implementation of the ITF in Indonesia.

Investment Interest Rate Channel’s Variance Decomposition Before Implementation ITF in Indonesia

Table 8. Investment Interest Rate Channel’s Variance Decomposition Before Implementation ITF in Indonesia

Period	S.E.	DLN_IHK	DRDEP	DRKI
1	0.115231	100.0000	0.000000	0.000000
5	0.142539	77.43562	1.790481	20.77390
143	0.520589	50.44748	4.436578	45.11594
144	0.522330	50.43279	4.438060	45.12915
Cholesky Ordering: DLN_IHK DRDEP DRKI				

Source: Processing Results with Eviews

The results of the Variance Decomposition Test of Interest Rate channel before the implementation of the ITF in Indonesia in the fifth month showed that the contribution of RDEP shocks to LIHK was 1.79%, RKI 20.77%, and own shocks (LIHK) 77.43%. In month 143 the contribution of RDEP shocks to LIHK was 4.43%, RKI 45.11%, and own shocks (LIHK) 50.44%. At the end of the observation period, the contribution of RDEP shocks to LIHK was 4.43%, RKI 45.12%, and own shocks (LIHK) 50.43%. These findings indicate that the importance of the RKI variable in influencing the LIHK variable on the interest rate channel before the implementation of the ITF in Indonesia.

Quantity Channel’s Variance Decomposition After Implementation ITF in Indonesia

Table 9. Quantity Channel’s Variance Decomposition After Implementation ITF in Indonesia

Period	S.E.	DLN_IHK	LN_M0	DLN_M1	DLN_M2
1	0.038935	100.0000	0.000000	0.000000	0.000000
5	0.055225	91.15613	5.312145	2.688940	0.842787
143	0.240439	91.43684	6.312884	2.021025	0.229249
144	0.241263	91.43694	6.313298	2.020768	0.228991
Cholesky Ordering: DLN_IHK LN_M0 DLN_M1 DLN_M2					

Source: Processing Results with Eviews

From the results of the Quantity channel Variance Decomposition Test after the implementation of the ITF in Indonesia, it can be seen that in the fifth month the contribution of LM0 shocks to the LIHK was 5.31%, LM1 shocks 2.68%, LM2 0.84%, and own shocks (LIHK) 91.15%. In month 143, the contribution of LM0 shocks to the LIHK was 6.31%, LM1 shocks 2.02%, LM2 0.22%, and own shocks (LIHK) 91.43%. And at the end of the observation period or the 144th month, the contribution of LM0 shocks to the LIHK was 6.31%, LM1 2.02%, LM2 0.22%, and own shocks (LIHK) 91.43%.

This observation shows the results of the dominant contribution of the LM0 and LM1 variables that are consistent with the LIHK variable. This finding shows that the variables LM0 and LM1 are important variables in influencing inflation on the quantity channel after the implementation of the ITF in Indonesia.

Invesment Interest Rate Channel’s Variance Decomposition After Implementation ITF in Indonesia

Table 10. Invesment Interest Rate Channel’s Variance Decomposition After Implementation ITF in Indonesia

Period	S.E.	DLN_IHK	DRDEP	DRKI
1	0.037583	100.0000	0.000000	0.000000
5	0.051875	83.45391	8.795250	7.750836
143	0.217304	73.69476	11.06319	15.24205
144	0.218046	73.69068	11.06421	15.24511
Cholesky Ordering: DLN_IHK DRDEP DRKI				

Source: Processing Results with Eviews

The results of the Interest Rate Variance Decomposition Test after the implementation of the ITF in Indonesia in the fifth month showed that the contribution of RDEP shocks to LIHK was 8.79%, RKI 7.75%, and own shocks (LIHK) 83.45%. In the 143th month, the contribution of RDEP shocks to LIHK was 11.06%, RKI 15.24%, and own shocks (LIHK) 73.69%. At the end of the observation period, the contribution of RDEP shocks to LIHK was 11.06%, RKI 15.24%, and own shocks (LIHK) 73.69%. These findings indicate that the importance of the RKI and RDEP variables have an almost equal influence on the formation of inflation. However, the RKI variable has a greater influence in influencing the LIHK variable on the interest rate channel before the implementation of ITF in Indonesia.

DISCUSSION

From the observations that the authors have made, it can be seen that the transmission mechanism of monetary policy on the quantity channel before the implementation of the ITF has a relatively long time lag, which is 3 months. Meanwhile, the results of variance decomposition show the effect of LM0 of 15.94% as the variable that has the biggest influence besides LIHK on inflation before the implementation of the ITF in Indonesia. After the implementation of the ITF in Indonesia, the time lag of the quantity channel in monetary policy transmission stood at 3

months. The results of variance decomposition show that the variable that most influences inflation other than own shocks is the LM0 variable of 6.31%.

Meanwhile, the interest rate path before and after the implementation of the ITF shows a relatively short time lag, which is 2 months. The results of the variance decomposition of the monetary policy transmission mechanism on the interest rate path before the implementation of the ITF show the effect of the loan interest rate (RKI) of 45.12% on inflation. Meanwhile, after the implementation of the ITF, the variable deposit interest rate (RDEP) and credit interest rate (RKI) have almost the same influence in influencing inflation, with the largest variable affecting the inflation rate being the loan interest rate (RKI) of 15.24%.

These findings indicate that the monetary policy transmission mechanism in Indonesia is more suitable to use the interest rate path with the Keynesian approach with a relatively short time lag, namely two months. Meanwhile, the results of the variance decomposition show that the loan interest rate (RKI) variable is the most influential variable on inflation in the monetary policy transmission mechanism. Therefore, controlling credit interest rates (RKI) is important in controlling inflation in order to achieve the final target of monetary policy by implementing the Inflation targeting Framework in Indonesia.

This finding is in line with the study of Bond (1994) with the results that the interest rate channel is a more effective channel in influencing inflation than the quantity path. Another study conducted by Natsir (2010) also showed that the most effective monetary policy transmission mechanism was the interest rate channel. Thus, the transmission channel for the monetary policy mechanism that is suitable to be applied in Indonesia is the interest rate channel.

CONCLUSION

The conclusions that can be drawn from this study are:

1. Before and after the implementation of the ITF in Indonesia, the interest rate channel (Keynesian approach) by controlling credit interest rates is the most effective route in transmitting monetary policy towards the final target of monetary policy, namely inflation with a time lag of 2 months.
2. The Quantity Channel (the monetarist approach) is less effective in transmitting monetary policy towards the final target of monetary policy, namely inflation with a time lag of 3 months.

References

- Bond, T.J. 1994. *Monetary Targets. Ures Discussion Paper*. Jakarta. Bank Indonesia.
- Dickey, D. A dan W. A. Fuller. 1979. *Distribution of Estimators for Autoregressive Time Series with a Unit Root*. *Journal of the American Statistical Association*. Vol.74, pp.427-443.
- Fisher, Irving. 1911. *The Purchasing Power of Money*. 2nd edition. New York. Reprinted by Augustus Kelley.

- Friedman, M. 1968. The Role of Monetary Policy. *The American Economic Review (AER)*. Vol.58, No.1, pp.3-17.
- Iddrisu, Abdul-Aziz, Imhotep Paul Alagodede. 2020. Revisiting Interest Rate and Lending Channels of Monetary Policy Transmission in The Light of Theoretical Prescriptions. *Central Bank Review*. Vol.20, pp.183-192.
- Jiang, Chun., tsangyao Chang, Xiao-Lin Li. 2015. Money Growth and Inflation in China: New Evidence from a Wavelet Analysis. *International Review of Economics and Finance*. Vol.35, pp.249-261.
- Kose, Nezir., Furkan Emirmahmutoglu, Sezgin Aksoy. 2012. The Interest Rate-Inflation Relationship Under an Inflation Targeting Regime: The Case of Turkey. *Journal of Asian Economics*. vol.23, pp.476-485.
- Luckett, G. Dudley. 1984. *Money and Banking*. 3rd edition. New York. McGraw-Hill.
- Maggi, Rio dan Brigitta Dian Saraswati. 2013. Faktor-Faktor Yang Mempengaruhi Inflasi di Indonesia: *Model Demand Pull Inflation*. *Jurnal Ekonomi Kuantitatif Terapan*. Vol.6, No.2, pp.71-77.
- Mankiw, G. N. 2010. *Macroeconomics*. 7th Edition. New York. Worth Publisher.
- Mishkin, Frederic S. 1996. The Channels of Monetary Transmission: Lesson for Monetary Policy. *NBER working paper*. p. 54-64
- Mishkin, Frederic S. 2001. *The Economics of Money, Banking, and Financial Markets*. 6th Edition. Massachusetts. Addison-Wesley Longman.
- Mishkin, Frederic S. 2011. *The Economics of Money, Banking, and Financial Markets*. 4th Canadian Edition. New Jersey. Pearson Education, Inc.
- Natsir, M. (2008). Studi Efektivitas Mekanisme Transmisi Kebijakan Moneter di Indonesia Melalui Jalur Suku Bunga dan Jalur Nilai Tukar serta Jalur Ekspektasi Inflasi Periode 1990:1-2007:1. *Disertasi*. Suarabaya. Program Pascasarjana Universitas Airlangga.
- Nguyen, Van Bon. 2015. Effects of Fiscal Deficit and Money M2 Supply on Inflation: Evidence from Selected Economies of Asia. *Journal of Economics, Finance and Administrative Science*. Vol.20, pp.49-53.
- Nualtaranee, J. 2001. Transmission Mechanism of Monetary Policy: Literature survey and Theoretical discussion.
- Oh, Junggun. 1999. Inflation Targeting, Monetary Transmission Mechanism and Policy Rules in Korea. *Economic Papers The Bank of Korea*. Vol.2, No.1, pp.102-148.

- Pohan, Aulia. 2008. *Kerangka Kebijakan Moneter dan Implementasinya di Indonesia*. Jakarta. PT Raja Grafindo Persada.
- Roeroe, Salvere P., Robby J. Kummat, Dennij Mandej. 2020. Efektivitas Penerapan Inflation Targeting Framework Terhadap Tingkat Inflasi Di Indonesia. *Jurnal Berkala Ilmiah Efisiensi*. Vol. 20, No. 03, pp. 99-109.
- Warjiyo, Perry. 2004. *Mekanisme Transmisi Kebijakan Moneter di Indonesia*. Pusat Pendidikan dan Studi Kebangsentralan (PPSK), Seri Kebangsentralan No.11, Bank Indonesia
- Widarjono, Agus. 2007. *Ekonometrika: Teori dan Aplikasi Untuk Ekonomi dan Bisnis*. Yogyakarta. EKONISIA Fakultas Ekonomi UII.
- Wulandari, Ries. 2012. Do Credit Channel and Interest Rate Channel Play Important Role in Monetary Transmission Mechanism in Indonesia? : A Structural Vector Autoregression Model. *Procedia*. Vol.65, pp.556-563.
- Taylor, J.B. 1995. The Monetary Transmission Mechanism: An Empirical Framework. *Journal of Economic Perspective*. Vol.9, No.4, pp.11-26.