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The Effect of Monetary Policy on the Stability of Price in Indonesia

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Abstract Inflation is one indicator of economic stability which has always been an important concern for all countries, especially Indonesia. High and unstable inflation is a reflection of the tendency to increase the price level of goods and services in general and continuously over a certain period of time. Thus, the need for monetary policy to regulate the inflation rate to stabilize the prices of goods and services in the market. This study aims to analyze the effect of the money supply, the rupiah exchange rate, and the interest rate on inflation in Indonesia. The data used are times series in 2016.1 until 2018.12. Secondary sources from the Central Statistics Agency and Bank Indonesia. The method used in this study is multiple linear regression. The analytical tool used is multiple linear regression. The results of this study indicate that the variable that the variable money supply and interest rates has a positive and significant effect on inflation in Indonesia. In addition, the exchange rate variable has a positive and insignificant effect on inflation in Indonesia in 2016.1 up to 2018.12. With this, further analysis of the factors that affect the inflation rate in Indonesia, the findings of this study can be a reference and consideration for the government to implement a policy instrument in controlling inflation.

Keywords: 1 Money Supply Amount · 2 Interest Rate · 3 Exchange Rate · 4 Inflation

1. INTRODUCTION

In an economic system, one way to control economic balance is through monetary policy. A stable economy can reduce the rate of inflation and balance the circulation of the amount of money in the community. Inflation is one of the important economic indicators, the rate of change is always sought low and stable so as not to cause price increases which will later have an impact on economic instability (Langi, Masinambow, and Siwu, 2014)

Inflation is the process of increasing the price of goods in general and is continuous. This does not mean that the price of various kinds of goods goes up by the same percentage. It may be possible to increase the general price of goods continuously over a period of time, an increase that occurs only once (although in a fairly large percentage) (Nopirin, 1992). Inflation must

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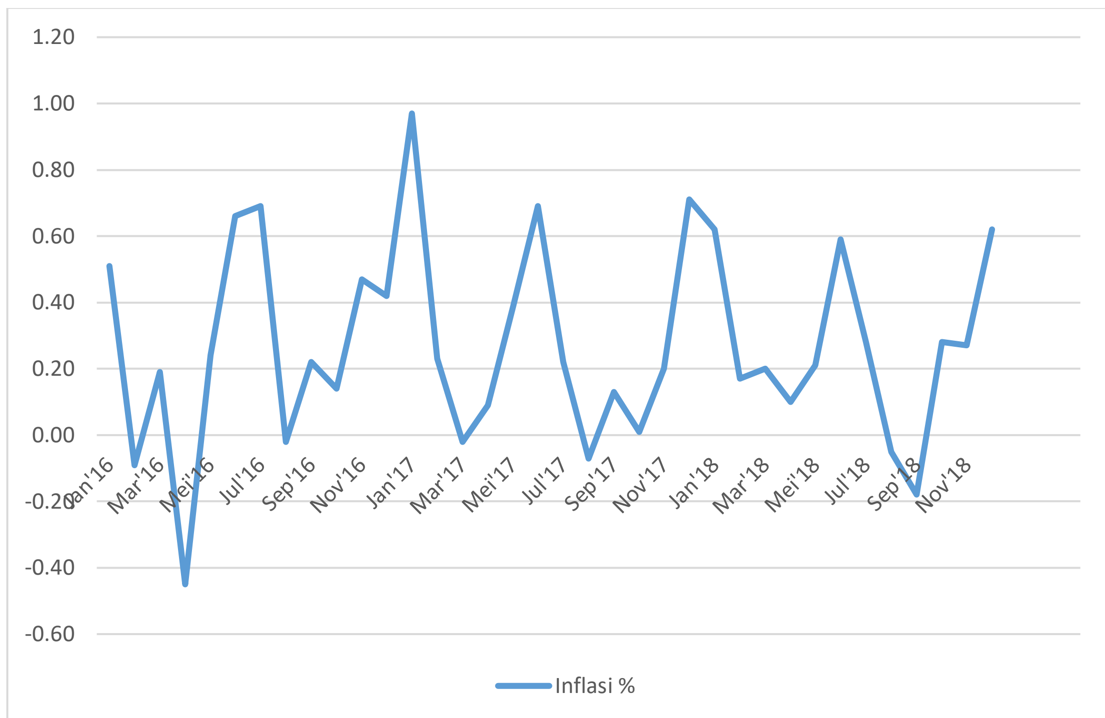
be well controlled by the government and the Central Bank in each country, in order to maintain monetary stability and economic stability. In theory, the government is always expected to intervene in the market. If the cause is excess demand in the community, then in the short term, the government can raise interest rates. The aim is that people are more interested in saving money than spending (Soesilo, 2002). The following table shows the inflation that occurred during the months of June 2016 to December 2018



Source: Bank Indonesia, 2019
Figure I. Inflation Value from January 2016 to December 2018

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Table 1 shows that the inflation rate in Indonesia in 2016 January to 2018 in December was below one percent. The inflation value is classified as mild inflation. This shows that the government in that period was able to control the stability of the prices of goods and services. This phenomenon is the problem in this study, so the authors suspect there are variables that affect inflation in that period.

The researcher suspects the inflation rate in 2016 to 2018 is influenced by several variables, among others; money supply, interest rates and exchange rates. The money supply is all types of money that are in the economy, namely the amount of the currency in circulation and the demand deposit in commercial banks. Money in circulation according to a broad understanding is also called economic liquidity or M2. Because M2 includes time deposits, liquidity is lower. The narrow definition of money supply is abbreviated as M1 and is the most liquid money, because this money can be immediately used quickly (Sukirno, 2012). The value of money is determined by supply and demand for money. The money supply is determined by the Central Bank, while the amount of money requested is determined by several factors, including the average price level in the economy. The amount of money requested by the community to make transactions depends on the price level of the goods and services available. The higher the price level, the greater the amount of money requested. According to Sutawijaya (2012) the amount of money in circulation has a positive influence on inflation. In line with this, Aprileven (2015) stated that the money supply has a positive (significant) effect on inflation.

Inflation must be well controlled by the government and the Central Bank in each country, in order to maintain monetary stability and economic stability. In theory, the government is always expected to intervene in the market. If the cause is excess demand in the community, then in the short term, the government can raise interest rates. The goal is that people are more interested in saving money than spending. Empirically, evidenced by Sutawijaya (2012) prove that circulating interest rates can affect inflation negatively on inflation.

Exchange rates are the value of a particular country's currency that is measured, compared, or expressed in another country's currency (Purnomo, 2013). The weakening factor of the rupiah is the high demand for foreign exchange by companies (Fahmi, 2012). If the rupiah exchange rate against foreign currencies increases, it means that the value of the rupiah has depreciated. But if the rupiah exchange rate decreases, the value of the rupiah will appreciate (increase) while the value of the foreign currency will depreciate. Empirically, it is proven by Aprillia (2011) that the exchange rate has a negative and significant effect on inflation. Thus, this study aims to analyze the effect of the money supply, interest rates and exchange rates on price stability (inflation) in Indonesia in the range of 2016 to 2018.

2. METHODS

This research was conducted using descriptive analysis method to analyze the effect of the money supply, bank interest rates in Indonesia and the rupiah exchange rate against the dollar against the inflation rate. The analytical tool used in this study is a non-parametric approach using the Ordinary Least Square (OLS) model. Data processing is done by using the program Eviews 8. The location of research in Indonesia using secondary time series data ranges from January 2016 to December 2018. Secondary data is sourced from Bank Indonesia (BI), the Central Statistics Agency (BPS) and the Ministry of Finance. The dependent variable in this study is that inflation is measured in units of percent and the independent variable BI rate is measured in units of percent, the money supply is measured in units of

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billions of rupiahs and is measured in units of rupiah. This study uses multiple linear regression models with Ordinary least Square (OLS) models (Gujarati, 2012). With the research equation as follows:

INF = $B_0 + B_1 MS_1 + B_2 IR_2 + B_3 CA_3 + e$

Keterangan :

INF = Inflation (Percent)

MS = Money Supply (Rp)

IR = Interest Rate (Percent)

CA = Exchange Rate (US Dollar)

e = residual (error term)

The next stage is the classic assumption test where in the use of regression, there are some basic assumptions that can produce the Best Linear Unbiased Estimator (BLUE) the best from the regression model obtained from the Ordinary Least Square (OLS) model. By fulfilling these assumptions, the results obtained can be more accurate and close to or equal to reality, where the basic assumptions are known as classic assumptions. To get the results of fulfilling these characteristics, classical assumptions were tested which included normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test (Gujarati, 2012).

3. RESULTS AND DISCUSSION

To analyze the influence of the money supply, interest rates and the exchange rate on inflation this study uses multiple linear regression with the Ordinary Least Square (OLS) model. The following table shows the estimation of the results of multiple linear regression.

Table 1. Results of Multiple Linear Regression

Variable	Coefficient	T-Value	Prob.
Konstanta	22.53184	4.67476	0.0004
MS	1.857654	7.43517	0.0001
IR	2.974180	8.28140	0.0000
ER	0.003910	1.65871	0.0557
T-table			1,994

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F- Value	35.230745
F-table	2,79
R_2 –squared	0.783947

Source: Data processed 2019

In the multiple linear regression model the Ordinary Least Square (OLS) model must pass the basic assumption that can produce a linear unbiased estimator or Best Linier Unbiased Estimator (BLUE). Research has passed the basic assumptions known as classical assumptions. Classical assumptions include normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test, so it can be stated that this study is the Best Linier Unbiased Estimator (BLUE).

The results of the regression output analysis indicate that the variable regression coefficient of money supply amounts to 1.857654 and the probability value is 0.000. This shows that the percentage change in the money supply has a positive and significant relationship to the change in the percentage of inflation rates in Indonesia. This is in accordance with the theory, that the more the money supply, it will increase the percentage of the inflation rate in Indonesia. This means that if the change in the money supply increases by 1 percent, then the percentage change in the inflation rate will increase by 1.857654 percent. Furthermore, the findings are also in line with the results of research from Magaline (2006). The effect of the level of money supply on the inflation rate has a positive and significant effect on inflation in Indonesia. Where an increase in the money supply will trigger an increase in prices, if not offset by an increase in the number of goods and services.

Effect of changes in interest rates on changes in inflation rates in Indonesia From the calculation results indicate that interest rates have a positive and significant relationship to changes in the percentage of inflation rates in Indonesia. This is not in accordance with the theory, that the higher the interest rate, the lower the inflation rate in Indonesia. This means that if there is a change in the percentage of interest rates rising by 1 percent, the change in the inflation rate in Indonesia will increase by 2.974180 percent. In other words the high and low levels of inflation are influenced by the high and low interest rates targeted by a country. This finding is also not in line with Magaline 2006) the effect of interest rates on the inflation rate in Indonesia that interest rates have a negative and significant effect on inflation.

From the calculation results show that the change in the percentage of the exchange rate has a positive and not significant relationship to the change in the percentage of the inflation rate in Indonesia. This means that if the exchange rate rises by 1 percent, the inflation rate in Indonesia will rise by 0.003910 percent. This is in accordance with the theory, that the higher the exchange rate will increase the level of inflation in Indonesia. In other words, the high and low levels of inflation are influenced by the high and low levels of exchange rates produced by a country. The study findings are not in line with Sutawijaya's findings (2012). The low influence of the exchange rate on inflation is due to the fact that the Indonesian bank is pursuing an exchange rate stability policy which causes the exchange rate of the rupiah against the US dollar to stabilize and appreciate. This is also accompanied by the improvement in the current account performance, supported by improving export performance, especially from natural resource-based commodities. Like mining commodities and manufacturing commodities. Theoretically, the relationship between the movement of the inflation rate and the movement of the rupiah exchange rate on the American dollar is inversely proportional. This means that if the inflation rate increases and the currency

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weakens. If this condition occurs continuously, it will have an impact on the overall worsening economic conditions and shocks to the political stability of a country.

4. CONCULSION

The results of this study indicate that the variable money supply and interest rates have a positive and significant effect on inflation. However, the exchange rate variable is positive and not significant for inflation. Given that monetary policy has a significant influence on the inflation rate, the effort that needs to be taken to control inflation is to pay attention to changes in monetary policy instruments. Among others, by using monetary policy instruments, namely discount facilities, open market operations, and minimum mandatory reserves that are expected to be able to reduce the inflation rate.

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