INNOVATIVE: Journal Of Social Science Research
Volume 4 Nomor 1 Tahun 2024 Page 5432-5441
E-ISSN 2807-4238 and P-ISSN 2807-4246
Website: https://j-innovative.org/index.php/Innovative

# The Effect of Monetary Policy on Indonesia's GDP in 2015-2022

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Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh BI Rate (X1), Kurs (X2), Jumlah Uang Beredar (M1+M2) (X3) terhadap Produk Domestik Bruto (Y). Jenis penelitian di atas adalah kuantitatif, yang menggunakan data time series sebagai data sekunder dan pendekatan regresi berganda sebagai teknik analisis data. Data yang telah diperoleh sebanyak 32 sampel kemudian dianalisis dengan menggunakan alat bantu aplikasi E-views 10. Data yang digunakan adalah data triwulanan dari BI Rate, Kurs, Jumlah Uang Beredar (M1+M2) dan Produk Domestik Bruto Indonesia pada tahun 2015-2022. Berdasarkan hasil. Penelitian ini menunjukkan bahwa secara parsial variabel dependen BI Rate dan Nilai Tukar berpengaruh positif dan tidak signifikan terhadap variabel independen Produk Domestik Bruto (PDB). Sedangkan Jumlah Uang Beredar (M1+M2) berpengaruh positif dan signifikan terhadap Produk Domestik Bruto di Indonesia tahun 2015-2021.
Kata Kunci: *BI Rate, Jumlah Uang Beredar, Nilai Tukar, Produk Domestik Bruto*

Abstract

The purpose of this study was to determine the effect of BI Rate (X1), Exchange Rate (X2), Money Supply (M1+M2) (X3) on Gross Domestic Product (Y). The above type of research is quantitative, that uses time series data as secondary data and a multiple regression approach as a data analysis technique. The data that has been obtained by 32 samples is then analyzed using E-views 10 application tool. The data used is quarterly variable BI Rate, Exchange Rate, Money Supply (M1+M2) and Indonesia's Gross Domestic Product in 2015-2022. Based on the results, this study shows that partially the dependent variable BI Rate and Exchange Rate have a positive and insignificant effect on the independent variable Gross Domestic Product (GDP). Meanwhile, the Money Supply (M1 + M2) has a positive and significant effect on Gross Domestic Product in Indonesia in 2015-2021.
Keywords: *BI Rate, Exchange Rate, Gross Domestic Product, Money Supply*

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## INTRODUCTION

Economic growth is the development of the economy with the increase in goods and services produced that can increase prosperity for the community (Sukirno, 2010). Economic growth can be used as one of the macroeconomic indicators that show the level of welfare of a country's society. No exception for developing countries such as Indonesia, economic growth has always been the center of attention to see the level of the country's economy. To achieve a high and stable economic level is not easy, it must be followed by the ability of macro-economic variables to overcome any problems (Seprillina, 2013).

Economic development focusing in developing countries such as Indonesia due to significant economic growth. This change in development leads to changes in various other sectors. Economic development is not just about economic growth, but also influences the economic process. Economic development can be defined as the development of activities in the economy that produce goods and services through increased production. Adam Smith's economic theory consists of two main aspects: total output GDP and population growth. Total output GDP can be achieved if a country focuses on specific activities, such as large cities for increased production. Large cities can also benefit from international trade, which can be divided into esporic and informational activities.

Indonesia's economic development is influenced by government policies, particularly fiscal and monetary policies, which involve government control, regulation, and taxation. These policies differ from pre- and post-economic crises. The success of concurrent implementation of fiscal and monetary policy has an impact on the gross domestic product.To maintain the Gross Domestic Product, both policies must be optimized. A high GDP cannot be achieved by expansionary fiscal policy alone; it requires the backing of expansionary monetary policy.

Monetary policy management aims to maintain the level of inflation by managing/regulating the circulation of money and interest rates that can tend to increase in the community and fiscal policy management aims to maintain price stability of goods and services and boost gross domestic product (Saragih, 2015). Mankiw (2014: 203) suggests that a country's progress can be gauged by its gross domestic product, with a stable economy indicating development, and a deteriorating economy indicating non-development. Despite there has been much research on the relationship between monetary policy and GDP growth, the current research is particularly interesting since it provides an extensive perspective of the economic performance of a country.

Therefore, a country's economic stability is crucial for determining its development status. Two main macroeconomic policies, fiscal and monetary, are used by economic

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managers to manage an economy's health, specifically Gross Domestic Product. Monetary experts believe that monetary policy has a greater impact on economic activity, while Keynesians believe that fiscal policy stimulates the Gross Domestic Product more rapidly than monetary policy. This policy impact a country's Gross Domestic Product. These policies, influenced by government spending and money supply, are tailored to the country's economic dynamics, aiming to stimulate an increase in the Gross Domestic Product (Atmojo, 2018).

Given the importance of monetary policy for economic growth, the authors conducted research by analyzing the effect of monetary policy on gross domestic product in Indonesia for the 2015-2022 period, with monetary variables including BI Rate, Exchange Rate, and money supply.

This study was meant to find out the influence of the money supply, exchange rate, and BI Rate on Indonesia's economic development from 2015 to 2022. It is believed that this research will have an impact on Indonesia's money supply, exchange rate, and BI Rate, facilitating the government to implement more carefully planned policies aimed at boosting economic growth. contributions for future researchers that can serve as a source of knowledge for studies with the same variables in the upcoming year.

## RESEARCH METHOD

The data analysis method uses multiple linear regression equations, the coefficient of determination (R2) test and statistical tests (t test and F test). This technique is intended to ascertain if each independent variable has any statistically significant effect on the dependent variable on on its own, as well as whether the effects occur simultaneously.

Secondary Data that time series representing the years 2015–2022 are used in this type of research data. Bank Indonesia and the Central Statistics Agency (BPS) provided the data used in this case study. Secondary data is information gathered from sources other than the original source, such as published libraries or earlier study. This study uses the independent variables BI Rate, Exchange Rate, and Money Supply (M1 + M2) and Gross Domestic Product as the dependent variable. The data used is time series from 2015-2022.

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## RESULT AND DISCUSSION

### Data Variable

Table 1. Variable Data, Sources, and Measurement Scale

| Variable | Sources | Measurement Scale |
|---|---|---|
| Gross Domestic Produc (Y) | Central Statistic Agency (BPS) | Milyar Rupiah |
| BI Rate (X1) | Central Statistic Agency (BPS) | Persen (%) |
| Exchange Rate (X2) | Central Statistic Agency (BPS) | (Rp/USD) |
| Money Supply (M1+M2) (X3) | Bank Indonesia | Milyar Rupiah |

### Multiple Regression Results

| Variable | Koefisien | Prob. | T-Statistic | Adjusted R-Squered | Prob (F-Statistik) | R-Squered |
|---|---|---|---|---|---|---|
| C | -512402.6 | 0.5826 | -0.555996 | 0.931087 | 0.000000 | 0.937756 |
| BI Rate (XI) | 11890.28 | 0.7533 | 0.317332 | | | |
| Exchange Rate (X2) | 116.8431 | 0.1868 | 1.353225 | | | |
| Money Supply (X3) | 0.344714 | 0.0000 | 7.361224 | | | |

Source : Data Processed (2023)

### Linear Regression Equation

The general form of the linear regression equation is as follows:

$$Y = C + B1XI + B2X2 + B3X3$$

The regression equation on this study as follows:

$$Y = -512402.6 + 11890.28\ XI + 116.8431\ X2 + 0.344714\ X3$$

Interpreation of the regression equation as follow:

1. The constant value is -5100.492 showing that if BI Rate (X1), Exchange Rate (X2), Money Supply (M1+M2) (X3) are fixed then Gross Domestic Product in Indonesia are -5100.492.
2. The value of coefficients X1 of 11890.28 indicates that if there is an increase in BI Rate by 1% then it will cause Gross Domestic Product in Indonesia to rise by 11890,28 with the assumption of constant inflation (cateries paribus).
3. Value of Coefficient X2 of 116.8431 shows that when there is a rise in the Exchange Rate of 1% it will be able to cause Gross Domestic Product in Indonesia increases by 116.8431 (cateries paribus).

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4. Value of Coefficient X3 of 0.344714 shows that when there is a rise in the Money Supply (M1+M2) of 1 unit it will be able to cause Gross Domestic Product in Indonesia increase by 0.344714 (cateries paribus).

Partial Test Results (Uji T )

T test is to find out if the independent variable regression model has a statistically significant partial impact on the dependent variable.

1. BI Rates variable in parisal to GDP obtained a coefficient value of 11890.28 with a probability value of > 0.05 (0.7533 > 0.05). So the results of this study state that the BI rates variable does not significantly affect gross domestic product, so the first hypothesis (H1) is accepted.
2. The parisal exchange rate variable on GDP obtained a coefficient value of 116.8431 with a probability value of> 0.05 (0.1868> 0.05). So the results of this study state that the exchange rate does not significantly affect gross domestic product, so the second hypothesis (H2) is rejected.
3. The variable money supply (M1 + M2) parisally on GDP obtained a coefficient value of 0.344714 with a probability value of <0.05 (0.0000> 0.05). Based on the study's results the variable money supply (M1 + M2) significantly affects the GDP, so the third hypothesis (H3) is accepted.

Simultaneous Test Results (F-Test)

The BI Rates, Money Supply (M1+M2), and Exchange Rate variables together have an effect on Gross Domestic Product. This is because the significance value <0.05 (0.0000 <0.05) so Ho is rejected and Ha is accepted.

The Test Results of the Coefficient of Determination ($R^2$)

Based on the regression estimation results, it shows that the value of the coefficient of determination (r2) obtained a result of 0.937756. This shows that the BI Rates, Money Supply (M1 + M2), and Exchange Rate variables of 93.77% can affect the GDP variable in Indonesia in 2015-2022 and the remaining 6.23% is influenced by other factors unknown in this study.

Discussion of Economic Interpretation

Monetary Policy

Monetary policy in general is the procedure that a nation's monetary authorities use to regulate interest rates and restrict the amount of money in circulation in order to promote stability and GDP, which includes low unemployment and price stability. The definition above is in line with that stated by Litteboy and Taylor (2006: 198) that monetary policy is

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an effort/action of the Central Bank in influencing monetary developments (money supply, interest rates, credit and exchange rates) to achieve certain economic goals which include: Gross Domestic Product, currency stability and external balance and expansion of employment opportunities.

Gross Domestic Product (GDP)

According to the Central Statistical Agency,gross domestic product is the amount of gross value added that arises from all sectors of the economy throughout the region. Value added, which is calculated as the value added from the sum of the elements used to produce the raw materials for a product less the cost of manufacturing, is sometimes regarded as the most accurate indicator of a country's economic success. GDP is capable of summarizing economic activity in terms of a single currency in a given period of time. The value of GDP contains two kinds of perceptions, namely as the total economy of each person in an economy and as the total expenditure on the output of goods and services in the economy (Sariningrum, 2007).

GDP (Gross Domestic Product) has a role as a basic indicator in assessing development of a country's economic status and development (Semuel, Hatane & Nurina,2015). In this research, GRDP is the dependent variable or what is known as other variables (Purba & Simanjuntak, 2011). In GDP processing, constant price data is used but current prices, because This research aims to focus on real prices on GDP in order to find out more clearly the relationship that exists in GDP before the influence of inflation.

BI Rate

According to Bank Indonesia (2012) the BI Rate is a policy interest rate that reflects the monetary policy stance set by Bank Indonesia and announced to the public. This BI Rate will then be adjusted to keep inflation stable and low. The mechanism by which the BI Rate operates to influence the ultimate goal of monetary policy in the form of inflation is referred to as the monetary policy mechanism.

The BI Rate is a Bank Indonesia policy issued every month after a meeting of members of the board of governors to regulate finances by reflecting on a country's economic conditions. The BI Rate policy is a reference for financial institutions or the public in carrying out monetary financial activities. The BI Rate interest rate is a reference for Bank Indonesia's transactions with third parties such as the government or foreign parties. The BI Rate interest rate itself is divided into two forms, namely the buying rate and the selling rate for foreign exchange against the rupiah. Changes in the BI Rate exchange rate always change every day and are announced every working day at 08.00 WIB.

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Exchange Rate

The price that is incurred of one currency in another country is known as the exchange rate. For example, what is the price of rupees after converting to US dollars. Mishkin (2004) states that "the exchange rate is the price of one currency against another". Furthermore, Van Hoose & Miller (2007) state that the exchange rate of a country's currency is relative to the currency of another country.

The total amount is divided into two parts: the nominal amount and the riil amount. The nominal tax is the amount of money that one country has in relation to another, whereas the relative tax is the amount of money that is relative to both domestic and foreign markets (Mankiw, 2006:128). Kurs riil is seen as a guide to reducing day-to-day differences between a country and another.

Money Supply

According to Mankiw (2003) money is defined as a supply of assets that can be immediately used to make transactions. Meanwhile, according to Mishkin (2008) money is something generally accepted in payment of goods and services or payment of debts. In traditional economics, it is defined as any generally accepted medium of exchange.

Money supply can be interpreted into 2 terms, namely money in circulation in terms of narrow (M1) and money supply in a broad sense (M2). Money in the narrow sense (M1) can be interpreted as money held in society, namely in the form of money currency and demand deposits. Meanwhile, money in the broadest sense (M2) is M1 plus with quasi money.

Currency is used paper money and coins people for daily transactions as a legal means of payment. Meanwhile, demand deposits are deposits belonging to the domestic private sector in banks Indonesia and Commercial Banks which can later be exchanged for currency according to the nominal. Demand deposits consist of current accounts in the form of rupiah owned by residents, time deposits that have matured, remittances, and savings. (Polontalo, 2018).

In general, the money supply is related to other factors in the demand for money, namely the interest rate, level inflation, electronic payment systems, and gross domestic product or GDP. On Basically these factors have an influence on the high and low levels demand for money, namely influencing the increase in the money supply

The Effect of BI Rate on Gross Domestic Product

Based on the results of the regression test, we can find out that the BI Rate variable has an influence and is not significant on gross domestic product in Indonesia in 2015-2022.

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It can be seen from the t test results that the prob value is> 0.05 (0. 7533 => 0.05). This proves that the BI Rate variable, if it increases by 1 percent, has no significant change on Gross Domestic Product in Indonesia in 2015-2021.

The results of this study are not in line with research conducted by (Pratiwi, 2015) which states that inflation has a positive and significant effect on economic growth. Also not in line with Mundell-Fleming theory states that there is a negative relationship between an interest rate and economic decline, as a higher rate leads to a higher net income (the difference between exports and imports), resulting in lower output and a decrease in the GDP. And in line with research (Fitria, 2018) which states that inflation has a positive and insignificant effect on economic growth.

The Effect of Exchange Rate on Gross Domestic Product

Based on the regression test results, we can find out that the exchange rate does not have a significant effect on gross domestic product in Indonesia in 2015-2022. It can be seen from the t test results that the prob value is > 0.05 (0.1868> 0.05). So the results of this study state that the exchange rate does not significantly affect gross domestic product. This proves that the exchange rate variable if it increases by 1 percent will not affect changes to Gross Domestic Product.

The results of this study are related to previous research, that in line with Wiwiet's research (2019) finding that the exchange rate has no significant effect on economic growth in Indonesia for the 2010-2017 period. And not in line with Erni (2020) found that the exchange rate affects economic growth in Indonesia in 2008-2019. Arintoko (2019) found that the exchange rate had an effect on economic growth in Indonesia in 2016-2020.

The Effect of Money Supply (M1+M2) on Gross Domestic Product

Based on the regression test results, we can find out that Money Supply (M1 + M2) has a significant effect on gross domestic product in Indonesia in 2015-2021. It can be seen from the t test results that the prob value is> 0.05 (0.000> 0.05). This proves that the variable if the Money Supply (M1 + M2) increases by 1 percent will affect changes to Gross Domestic Product. Based to this study, there is a positive relationship between the money supply and economic growth, which means that increasing money supply and expanding economic growth are going to occur at the same time.

As a result, this analysis is consistent with research by Asnawi & Fitria (2018), which found that the money supply variable positively impacts the growth of Indonesia's economy. In order the findings of this study's summary indicate that a higher money supply results in expanding GDP. The above situation is related to the idea that individuals are prepared to

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preserve a certain amount of money for consumption when the money supply rises, which in turn encourages producers to raise their inputs and make items in large numbers. As a result, higher levels of consumption, entrepreneurship productivity, and per capita income will all support faster rates of economic growth. Thus, an increase in the money supply will result in to an increase in investment, which will have an influence on.

## CONCLUSION

The conclusion that can be drawn from this study is that the BI Rate, exchange rate, and Money Supply (M1 + M2) have a positive effect on gross domestic product in Indonesia in 2015-2021. seen from the T test, the variable values of BI Rate and exchange rate do not significantly affect gross domestic product, in contrast to the Money Supply (M1 + M2) which has a significant effect on gross domestic product in Indonesia in 2015-2022.Based on F-test, this study can explain that the variables BI Rates, Money Supply (M1 + M2), and Exchange Rates together have an effect on Gross Domestic Product in Indonesia in 2015-2022. Based variable coefficient test, this study can explain that BI Rates, Money Supply (M1 + M2), and Exchange Rates contributed 93.77% to Gross Domestic Product in Indonesia 2015-2022, while the remaining 6.23% was influenced by other factors outside this study.

With the goal to accomplish its strategic economic growth goals, the Indonesian government should set a high priority on maintaining the money supply and inflation rate. Fiscal and monetary policy may be utilized to accomplish this, with interest rates being managed by the government to prepare for exchange rate depreciation rather than inflation or increases in prices. The goal of this research is to comprehend the monetary procedures that the central bank adopts to preserve external as well as internal financial stability and encourage better economic growth.

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