



# Analysis of Policy on Economic Growth Through Money Supply in Indonesia

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**Abstract** The government's role is necessary through fiscal and monetary policies to stimulate the growth of output and national income, there by increasing economic growth towards societal welfare. This study aims to measure and analyze the effect of government expenditure, inflation, and interest rates on economic growth through the money supply. Data collection for this study was conducted through literature research. The data were analyzed using the path analysis method. The results of the study show that: 1) government expenditure has a positive effect on economic growth through the money supply, 2) inflation has a negative effect on economic growth through the money supply, and 3) interest rates have a negative effect on economic growth through the money supply.

**Keywords:** Economic Growth, Money Supply, Government Expenditure, Inflation, Interest Rates

## 1 INTRODUCTION

The success of a nation's economy can be achieved through various advancements and development progress. Economic development is crucial for a country as it has a significant impact on improving the standard of living and the welfare of its people. According to Todaro & Smith (2003) in Kholis et al. [1], the primary goals of economic development efforts are to eliminate and reduce poverty, address income inequality, and create employment opportunities in the context of a continuously growing economy. However, the implementation of a country's economic development will face many challenges. At certain points, the economy may experience a slowdown in its growth process. Problems arising during the development process can lead to economic instability, such as issues related to economic growth, unemployment, inflation, inequality, poverty, and other related matters.

One of the key indicators to measure the success of development is economic growth. This is because the success or failure of development programs is often assessed by the rate of growth in output and national income. Economic growth reflects a continuous increase in the production of goods and services [2].

Recently, the COVID-19 pandemic has shaken the global economy and directly impacted Indonesia's economy. This disruption created uncertainties in several aspects,

such as income cuts and layoffs, which led the public to become more selective in spending their money. This situation directly decreased people's purchasing power and reduced investor interest in investing in Indonesia.

As a developing country, Indonesia has shown relatively high economic growth. Indonesia's Central Statistics Agency (BPS) has recorded fluctuating economic growth in Indonesia over the years. This fluctuation can be observed in the following chart

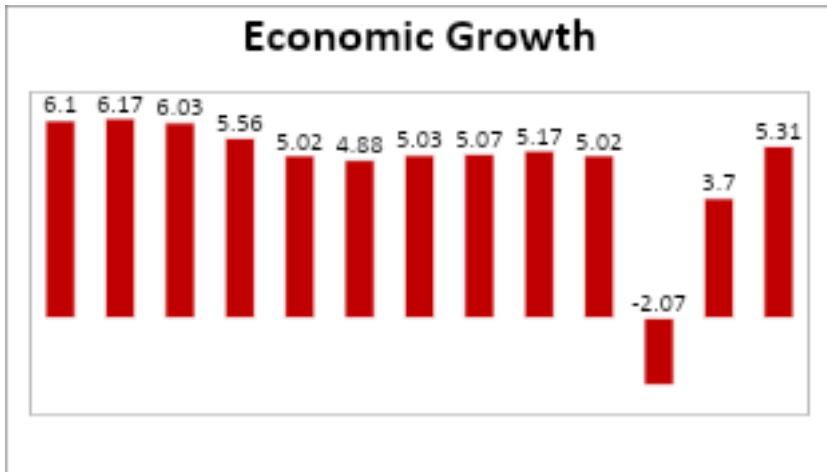


Fig 1 Indonesia Economic Growth

Source: BPS, 2023

Economic growth in Indonesia has fluctuated over the past decade. Starting in 2010, it recorded a growth rate of 6.1%, followed by rapid growth over the last ten years. In 2011, the economy saw its largest growth increase, rising by 0.07%, reaching 6.17%. However, this momentum did not last, and in the following years, economic growth steadily declined until 2015. In 2016, the economy showed some strengthening, but by 2019, growth had slowed again, and in 2020, it turned negative. The economic downturn in 2020 was primarily due to the COVID-19 pandemic, which severely impacted both the global and Indonesian economies. Social restrictions were a major factor, leading to a growth rate of -2.07% in 2020, a sharp decline of 7.09% compared to 2019. However, this downturn was short-lived, as the government quickly implemented fiscal and monetary policies to stimulate recovery. In 2021, Indonesia's economy bounced back, showing significant improvement with a growth rate of 3.7%, marking a 5.77% increase from the previous year. By 2022, the economy continued its positive trajectory, recording a growth rate of 5.31%. However, this was only a 1.61% increase from the previous year, signaling a more moderate recovery.

The government plays a crucial role in the economy with the goal of promoting economic growth through both monetary and fiscal policies. In the short term, there is often a conflict between monetary policy, where Bank Indonesia focuses on maintaining price stability, and fiscal policy, which aims to reduce aggregate demand and output demand. This can lead to high costs and make inflation difficult to control, necessitating a balance between the two policies [3].

Keynes' fiscal policy theory outlines two approaches, one of which is government spending. In times of economic downturn, government expenditure plays a vital role in stimulating the economy to maintain growth. Expansionary fiscal policy is believed to increase aggregate demand, which in turn raises household incomes, reduces unemployment, and ultimately achieves full employment [4]. The effectiveness of these policies is essential to achieving development targets and ensuring economic stability.

The effectiveness of monetary policy depends on the relationship between the money supply and key economic variables such as output and inflation (Warjiyo, 2017). Poor control over the money supply over time can lead to economic decline.

Several factors contribute to declining economic growth, including reduced government spending, a smaller money supply, and rising interest rates [3]. In 2020, despite low economic growth, government spending increased by 12%, the money supply rose by 12.5%, and interest rates dropped by -25%.

Conceptually, a mix of fiscal and monetary policies can be implemented through several scenarios: (1) expansionary monetary policy/expansionary fiscal policy, (2) contractionary monetary policy/expansionary fiscal policy, (3) expansionary monetary policy/contractionary fiscal policy, and (4) contractionary monetary policy/contractionary fiscal policy [5].

Another factor affecting economic growth is inflation. explained that money circulation is directly proportional to price changes. Additionally, Bank Indonesia states that inflation represents a general increase in prices in the economy, which can reduce economic activity[3]. However, based on data, inflation rates in Indonesia have fluctuated. Inflation increases in Indonesia have not always been accompanied by economic growth. Since the COVID-19 pandemic, Indonesia's interest rates have steadily declined to maintain and stabilize economic growth. Interest rate cuts by Bank Indonesia indirectly influence the money supply in the country.

According to Keynes' monetary policy transmission mechanism, changes in the money supply will lead to changes in interest rates, which in turn influence investment, ultimately affecting national income [6]. However, this theoretical model often contrasts with real-world conditions. The gap between theory and reality highlights the need for further research to examine the relationships between economic growth, government spending, inflation, interest rates, and money circulation. The findings from such research are expected to guide the development of relevant policies aimed at stimulating the production of goods and services in Indonesia, which in turn would promote economic growth.

## 2 LITERATURE REVIEW

### 2.1 Economic Growth

Economic growth is the continuous process of change in a country's economic conditions towards a better state over a certain period. It is defined as the development of activities within the economy that results in an increase in the goods and services produced in society, leading to greater prosperity for the community. In other words, economic growth measures the performance of an economy's development from one period to another [1]. According to Arsyad [7], economic growth is interpreted as an increase in Gross Domestic Product (GDP) or Gross National Product (GNP),

regardless of whether this increase is greater or lesser than the population growth rate, or whether there are changes in the economic structure or improvements in institutional systems.

In general, economic growth is defined as the increased capacity of an economy to produce goods and services. It is a crucial indicator for analyzing economic development within a country. Economic growth indicates the extent to which economic activities generate additional income for the community during a specific period. Analyses of economic growth fundamentally focus on the long-term economic activities of a country. When discussing economic growth, there are three important aspects to consider: 1) the factors determining a country's economic growth, 2) indicators of economic growth, and 3) theories explaining the key factors that determine economic growth. According to Samuelson [11], four factors can influence economic growth: human resources, natural resources, capital formation, and technological change/innovation.

Economic growth theories are generally divided into two categories: classical growth theory and modern growth theory. Classical growth theory is based on the belief in the effectiveness of free markets, suggesting that economic growth can be achieved through market mechanisms and individual actions without much government intervention. In contrast, modern growth theory emphasizes the importance of government intervention in the economy to address market failures and promote sustainable growth [8].

## 2.2 Money Supply

The money supply, also known as the circulating money (jumlah uang beredar), refers to anything that is generally accepted as a medium of exchange for goods and services or for debt payments. Money is associated with changes in economic variables that influence economic activities [5]. A high money supply can lead to inflation, while a very low money supply can cause economic stagnation. If this situation persists, the welfare of society will decline [9].

Based on calculations of the demand for money in society, money can be classified into M0, M1, M2, and M3. M0 is the narrowest definition of money demand, consisting solely of cash (paper and coin money) that people hold in their daily transactions. M1 includes M0 plus demand deposits, which are savings accounts that can be accessed on demand. M1 represents the measure of money supply that is highly liquid. M2 includes M1 plus time deposits, which are savings, deposits, and similar instruments with a set maturity date that cannot be withdrawn at will. M3 comprises M2 plus long-term deposits, which include institutional funds in the money market and banks that can be accessed as needed [8].

## 2.3 Government Expenditure

According to Mangkoesoebroto [10], government expenditure refers to a policy that is part of fiscal policy used by the government to regulate the economy by determining the level of revenue for national and regional purposes. Government expenditure is a component of fiscal policy, which includes setting annual revenues and expenditures to manage economic activity. This is outlined in documents such as the State Revenue and

Expenditure Budget (APBN) for national levels and the Regional Revenue and Expenditure Budget (APBD) at the regional level. The aim of this fiscal policy is to stabilize prices, output levels, employment opportunities, and stimulate economic growth [9].

Keynes argued that if the government increases its expenditure, it will reduce unemployment. He believed that an expansion of government spending could drive economic growth. The calculation of government expenditure according to Keynes is based on the approach:  $(Y = C + I + G + (X - M))$ , where G represents government expenditure. By comparing the value of G against Y and observing over time, one can determine the extent of government expenditure's contribution to national income formation [7].

Government expenditure was further developed by Rostow and Musgrave, who found that in the early stages of economic growth, public spending tends to increase continuously. This is due to government investments in infrastructure. Additionally, investments in health, roads, electricity, and clean water, which are essential for facilitating the economy, help transition from traditional stages to take-off stages of economic development [6].

## 2.4 Inflation

According to Samuelson [11], inflation is characterized by a general increase in price levels and costs. This can be observed through three components: first, the output price level; second, the production price level; and third, the prices of all capital goods. Based on this definition, it can be concluded that a decrease in purchasing power will be accompanied by a decline in the intrinsic value of a country's currency.

There is another definition of inflation, which refers to a situation where there is an imbalance between aggregate demand and aggregate supply. In this scenario, the general price level reflects the relationship between the flow of goods and services and the flow of money. If the flow of goods and services exceeds the flow of money, the economy will experience deflation. Conversely, if the flow of goods and services is less than the flow of money, the economy will experience inflation.

Based on various expert opinions, inflation is a condition characterized by a continuous increase in the prices of goods, including output prices, capital goods, and production prices, leading to a long-term decline in the value of money.

## 2.5 Interest Rates

According to Dornbusch the interest rate indicates the level of payment on loans or other investments above the repayment agreement, expressed as an annual percentage [7]. The interest rate is determined by the Central Bank through monetary policy. The government or monetary authority sets the interest rate to influence the level of aggregate demand within the economy.

states that interest rates are the most closely watched variable in economics [15]. Their movements are reported daily by the news media because they directly affect our daily lives and have significant consequences for the health of the economy. Interest rates also influence personal decisions such as whether to save or spend, buy a home, purchase bonds, or keep money in savings accounts. Furthermore, interest rates affect

economic decisions made by businesses and households, such as whether to invest in new equipment for factories or save money instead of spending it.

Blanchard & Johnson [12] suggest that interest rates should be set so that the supply of money (which is independent of the interest rate) equals the demand for money (which depends on the interest rate). This means that the determination of interest rates influences both the supply and demand for money.

### 3 RESEARCH METHOD

#### 3.1 Scope of Research

This study examines and analyzes the impact of government spending, inflation, and interest rates on economic growth, both directly and indirectly through the money supply in Indonesia from 2008 to 2023.

#### 3.2 Types and Sources of Data

The data used in this study are secondary data, specifically time series data obtained from publications by Bank Indonesia, which includes data on inflation, interest rates, and the money supply. Additionally, data on economic growth is sourced from publications by BPS. Furthermore, data on government spending is obtained from the Ministry of Finance of the Republic of Indonesia.

#### 3.3 Data Collection Method

The data collection method used in this research is a literature study. This involves gathering information relevant to the research topic or problem being examined. The information is obtained from research journals, books related to the research topic, various data from relevant institutions, and theories related to the issues being studied.

#### 3.4 Data Analysis Method

The data analysis method in this research, used to understand the relationships between variables that have been defined based on theory, is path analysis. Based on the conceptual framework, the functional equations in the structural equation model with the reduced form can be expressed as follows.

$$Y_1 = f(X_1, X_2, X_3, \dots) \dots \dots \dots (1)$$

$$Y_2 = f(Y_1, X_1, X_2, X_3, \dots) \dots \dots \dots (2)$$

Description:

$Y_1$  = Money Supply

$Y_2$  = Economic Growth

$X_1$  = Government Expenditure

$X_2$  = Inflation

$X_3$  = Interest Rate

Based on the functional relationships in equations (1) and (2), the nonlinear equations can be written as follows:

$$Y_1 = \alpha_0 X_1^{\alpha_1} e^{\alpha_2 X_2 + \alpha_3 X_3 + \mu_1} \dots\dots\dots(3)$$

$$Y_2 = \beta_0 X_1^{\beta_1} X_2^{\beta_2} e^{\beta_3 X_2 + \beta_4 X_3 + \mu_2} \dots\dots\dots(4)$$

The nonlinear equations (3) and (4) can then be transformed into linear form using natural logarithms (ln), as shown in the following equations:

$$Y_1 = \alpha_0 + \alpha_1 \ln X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \mu_1 \dots\dots\dots(5)$$

$$Y_2 = \beta_0 + \beta_1 \ln Y_1 + \beta_2 \ln X_1 + \beta_3 X_2 + \beta_4 X_3 + \mu_2 \dots\dots\dots(6)$$

Next, based on the previously stated equations, equation (5) is substituted into equation (6), resulting in the following:

$$Y_2 = \beta_0 + \beta_1 (\alpha_0 + \alpha_1 \ln X_1 + \alpha_2 X_2 + \alpha_3 X_3 + \mu_1) + \beta_2 \ln X_1 + \beta_3 X_2 + \beta_4 X_3 + \mu_2 \dots\dots\dots(7)$$

$$= \beta_0 + \alpha_0 \beta_1 + \alpha_1 \beta_1 \ln X_1 + \alpha_2 \beta_1 X_2 + \alpha_3 \beta_1 X_3 + \beta_1 \mu_1 + \beta_2 \ln X_1 + \beta_3 X_2 + \beta_4 X_3 + \mu_2 \dots\dots(8)$$

$$= (\beta_0 + \alpha_0 \beta_1) + (\alpha_1 \beta_1 + \beta_2) \ln X_1 + (\alpha_2 \beta_1 + \beta_3) X_2 + (\alpha_3 \beta_1 + \beta_4) X_3 + \mu_2 \dots(9)$$

Based on the above equation, the following multiple linear regression formula is obtained:

$$Y_2 = \lambda_0 + \lambda_1 \ln x_1 + \lambda_2 x_2 + \lambda_3 x_3 + v \dots\dots(10)$$

Explanation:

$\alpha_0, \beta_0, \beta_3, \alpha_0$  = Constants

$\alpha_1$  = The effect of government expenditure on money supply

$\alpha_2$  = The effect of inflation on money supply

$\alpha_3$  = The effect of interest rates on money supply

$\beta_1$  = The effect of money supply on economic growth

$\beta_2$  = The effect of government expenditure on Indonesia's economic growth

$\beta_3$  = The effect of inflation on Indonesia's economic growth

$\beta_4$  = The effect of interest rates on Indonesia's economic growth

$\alpha_1 \beta_1$  = The effect of government expenditure on Indonesia's economic growth through money supply

$\alpha_2 \beta_1$  = The effect of inflation on Indonesia's economic growth through money supply

$\alpha_3 \beta_1$  = The effect of interest rates on Indonesia's economic growth through money supply

$e, \mu_1, \mu_2, \beta_1, \mu_1 + \mu_2, v$  = Error term

## 4 RESULTS AND DISCUSSION

### 4.1 Research Result

The results of the independent and dependent variable tests are presented in the following table:

**Table 1.** Regression Results

Variables		Coef.	t-statistic	Prob (t)	Adjusted R-Squared	R-Squared	F-statistic	Prob (F)
Sub Stru ctural I	$X_1 \rightarrow Y_1$	3,84	3,93	0,0002	0,72	0,78	3,86	0,002209
	$X_2 \rightarrow Y_1$	-0,35	-2,63	0,0096				
	$X_3 \rightarrow Y_1$	-0,50	-2,85	0,0051				
Sub Stru ctural II	$X_1 \rightarrow Y_2$	0,40	1,98	0,0494	0,82	0,84	8,18	0,000003
	$X_2 \rightarrow Y_2$	-0,92	-2,75	0,0067				
	$X_3 \rightarrow Y_2$	-3,84	-3,93	0,0002				
	$Y_1 \rightarrow Y_2$	7,14	9,8	0,0000				

The processed data using the natural logarithm transformation shows that the coefficient of determination (Adjusted R Square) for Model Equation 1 is 0.72. This implies that 72% of the variation in the money supply ( $Y_1$ ) can be simultaneously explained by the variations in government expenditure ( $X_1$ ), inflation ( $X_2$ ), and interest rates ( $X_3$ ). The remaining 28% is attributed to other variables outside the model. In the estimation of the money supply, the variables of government expenditure, inflation, and interest rates are significant at a 5% significance level.

For Model Equation 2, the adjusted R Square is 0.82. This indicates that 82% of the variation in economic growth ( $Y_2$ ) can be simultaneously explained by the variations

in government expenditure ( $X_1$ ), inflation ( $X_2$ ), interest rates ( $X_3$ ), and money supply ( $Y_1$ ). The remaining 18% is determined by other variables outside the model. In the estimation of economic growth, the variables of government expenditure, inflation, interest rates, and money supply are also significant at a 5% significance level.

This significance of the variables highlights their important roles in influencing both the money supply and economic growth in the analyzed period.

**Table 2** Variables Direct and Indirect Effects

Variables	Direct	Indirect	Total
Government Expenditure	3,841487***	2,744673***	3,128822
Inflation	-0,348490***	-2,4899***	-2,83839
Interest Rates	-0.500322***	-3,57471***	-4,07503

Source: Processed using Eviews, 2023

Note:

Ns = not significant

\*\*\* = significant at 5%

Government expenditure on economic growth, both directly and indirectly through the money supply, shows a positive effect. This indicates that an increase in government expenditure leads to an increase in economic growth through the money supply. Thus, the results of the study align with the initial hypothesis stating that government expenditure positively influences economic growth through the money supply, both directly and indirectly. The coefficient value of 3.84 means that when government expenditure increases by 1 percent, it causes economic growth to increase by 3.84 percent. Meanwhile, the indirect effect of government expenditure on economic growth through the money supply shows a positive influence with a coefficient value of 2.74, meaning that when government expenditure rises by 1 percent, it results in an increase in economic growth of 2.74 percent through the money supply.

Inflation's effect on economic growth, both directly and indirectly through the money supply, shows a negative influence. This indicates that an increase in inflation leads to a decline in economic growth through the money supply. Thus, the results of the study are consistent with the initial hypothesis stating that inflation negatively impacts economic growth through the money supply, both directly and indirectly. The coefficient value of -0.35 means that when inflation increases by 1 percent, it causes economic growth to decrease by 0.35 percent. Meanwhile, the indirect effect of inflation on economic growth through the money supply shows a negative influence with a coefficient value of -2.48, meaning that when inflation rises by 1 percent, it results in a decrease in economic growth of 2.48 percent through the money supply.

The effect of interest rates on economic growth, both directly and indirectly through the money supply, shows a negative influence. This indicates that an increase in interest rates leads to a decline in economic growth through the money supply. Thus, the results of the study align with the initial hypothesis stating that interest rates negatively affect economic growth through the money supply, both directly and indirectly. The coefficient value of -0.5 means that when interest rates increase by 1 percent, it causes economic growth to decrease by 0.5 percent. Meanwhile, the indirect effect of interest rates on economic growth through the money supply shows a negative influence with a coefficient value of -3.57, meaning that when interest rates rise by 1 percent, it results in a decrease in economic growth of 3.57 percent through the money supply.

## 4.2 Discussion

### **The Effect of Government Expenditure on Money Supply and Economic Growth.**

Based on the research findings, government spending has a direct influence on Indonesia's economic growth, as evidenced by a probability value of less than 0.05. This study's findings indicate that an increase in government spending in Indonesia aligns with economic growth.

Additionally, government spending has a positive indirect effect on economic growth through the money supply in Indonesia, which is also supported by a probability value of less than 0.05. Throughout the study period, there has been a consistent increase in government spending, primarily allocated to infrastructure development, along with other factors such as high global oil prices, currency fluctuations, and interest rates. Furthermore, government expenditure used to improve infrastructure positively impacts the economic growth of a country or region. The availability of job opportunities will reduce unemployment, thereby enhancing community welfare, which in turn contributes to economic growth.

**The Impact of Inflation on the Money Supply and Economic Growth.** Based on the research findings, inflation negatively affects Indonesia's economic growth. High inflation tends to reduce investment in a country, increases interest rates, promotes speculative investments, leads to failures in development implementation, creates economic instability, results in a balance of payments deficit, and diminishes the welfare of the population, all of which ultimately impact economic growth.

This study suggests that the increase in inflation drives a decline in the purchasing power of the public due to rising prices. Furthermore, income distribution worsens as some individuals struggle to adjust to the prevailing inflation. This situation is reflected in increased demand for goods, rising production costs, an expanding money supply, and disrupted distribution channels.

**The Impact of Interest Rates on the Money Supply and Economic Growth.** An increase in the BI Rate will reduce economic growth. In this context, monetary policy, particularly interest rates, is utilized to stabilize the money supply in the economy, thereby improving economic conditions. This means that the higher the interest rate, the lower the money supply; conversely, the lower the interest rate, the greater the money supply [4]. When the BI Rate decreases, it encourages the public to spend more

on goods and services, leading to an increase in the money supply and subsequently boosting economic growth. This aligns with Keynes's theory on the demand for money, which emphasizes the importance of interest rates in making decisions regarding money demand.

Furthermore, this study demonstrates that interest rates are a function of investment. Lower interest rates can attract investments, ultimately driving economic growth. These findings support the theory that high interest rates lead to a decrease in investment, which in turn puts pressure on economic growth, and vice versa [2].

## 5 CONCLUSION

The findings of this study indicate that government expenditure has a positive impact on economic growth in Indonesia, both directly and indirectly through the money supply. Increased government spending stimulates economic activity, enhances infrastructure development, and creates employment opportunities, ultimately contributing to economic growth. Conversely, inflation negatively affects economic growth, as rising inflation reduces purchasing power, increases production costs, and disrupts investment, leading to economic instability and slower economic expansion. Similarly, interest rates have a negative influence on economic growth, both directly and indirectly through the money supply. Higher interest rates discourage borrowing and investment, reducing economic activity, while lower interest rates stimulate spending and investment, thereby promoting economic growth. These findings underscore the importance of a balanced fiscal and monetary policy framework to ensure sustainable economic development, where government expenditure plays a crucial role in driving growth, and inflation and interest rates must be effectively managed to maintain macroeconomic stability.

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