

## The Quality of Growth: Macroeconomics Causality on Growth in Indonesia

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### ABSTRACT

This research aims to analyze the impact of inflation, the interest rate (BI rate), and the exchange rate on economic growth in Indonesia from 2016–2023. The data used were obtained from the official websites of the World Bank, the International Monetary Fund, and the Central Statistics Agency, and were analyzed using multiple linear regression with the assistance of Eviews 10 software. The results of the study show that inflation has a significant negative impact on economic growth in Indonesia. Conversely, the BI interest rate and the exchange rate variables do not show a substantial effect on economic growth during the period studied. These findings emphasize the importance of controlling inflation as a primary policy to support sustainable economic growth.

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## **INTRODUCTION**

Economic growth is a long-term economic issue and a crucial phenomenon experienced by the world recently. The process of economic growth is commonly referred to as Modern Economic Growth. Essentially, economic growth is defined as the process where per capita output increases over time. This means that in the long run, prosperity is reflected in the improvement of economic growth influenced by the activities of the society within the country itself. A country's economy is considered advanced when the economic activities of its society directly produce more goods and services. Economic growth theory studies the factors influencing the economy and its long-term processes, as well as the interactions among these factors (Siregar et al., 2006). Value creation and economic growth are very important for innovation enhancement, where several countries put this importance in their consideration (Tariq Tawfeeq Yousif Alabdullah, 2020). Therefore, there are various economic variables and determining factors that play a significant role in managing macroeconomic policies to promote economic growth stability in Indonesia (Kunthi et al., 2023).

As a developing country, Indonesia actively implements planned and gradual development efforts to promote equity and stability. National development aims to achieve relatively high economic growth, which ultimately enhances the standard of living and welfare of all Indonesian citizens (Syahputra, 2017). The global economic slowdown has impacted economic growth in Indonesia. Indonesia's economy fell into recession in 2020. Director General of Taxation at the Ministry of Finance, Suryo Utomo, explained that the COVID-19 pandemic had three major impacts on Indonesia's economy, pushing it into crisis. Firstly, there was a decrease in household consumption or purchasing power. Household consumption is the largest contributor to Indonesia's economic growth. Secondly, ongoing uncertainty has weakened investment and led to business closures. Thirdly, the global economic slowdown has resulted in declining commodity prices and halted Indonesia's exports to several countries. The turmoil caused by the COVID-19 pandemic has persisted through to 2024.

On a global scale, the Indonesian Banking Development Institute (LPPI) highlights three major issues that could affect Indonesia's economic development in 2024. Signaling Theory is considered to be the basis of this research. The explanation of Signaling Theory suggests that how a country should provide signals that have an impact on economic growth (Abbas et al., 2021). These include economic slowdown due to high interest rates and geopolitical conflicts (Kristiana, Virtual Seminar LPPI, 2023). The economic slowdown caused by high interest rates is compounded by issues related to exchange rate volatility. Concerns arise from the Federal Reserve's interest rates due to ongoing uncertainties until the final rate is achieved. This situation also impacts the United States' inflation targets, which in turn affect global inflation (Putri, 2023).

In the International Debt Report 2023 released by the World Bank, it is stated that core inflation is expected to remain under control during the forecast period due to a projected reduction in output gaps in 2025 and normalization of domestic demand. However, global prices of energy and food are anticipated to exert pressure on inflation. This occurs as global supply chains are disrupted by various armed conflicts and climate shocks, alongside oil price increases resulting from OPEC+'s production cuts (Alaydrus, 2024). Among the various issues affecting Indonesia's economic growth due to macroeconomic factors such as interest rates, exchange rates, and inflation, which collectively impact economic growth (Putri, 2023). there are domestic challenges that could affect economic growth, notably the upcoming general election or political year in 2024. During this period, expenditures may increase and accelerate.

### LITERATURE REVIEW

Keynesian theory asserts that short-term production and employment opportunities in a country are primarily determined by aggregate demand (Mayasari & Mahinshapuri, 2022). Keynesians believe that monetary and fiscal policies should be used to address inflation, which also affects high interest rates and exchange rates (Restiasanti & Yuliana, 2023). The Keynesian concept highlights the significant role of the government in generating economic growth. Supported by research from Kunthi et al., (2023) dan Mahendra et al., (2024) it is stated that inflation and exchange rates in the long term have impacts on economic growth. However, according to studies by Mayasari & Mahinshapuri, (2022), Kusumastuti et al., (2022) dan Restiasanti & Yuliana, (2022) inflation has a negative and significant effect on economic growth. Kusumastuti et al., (2022) also note that exchange rates and interest rates have a negative but not significant impact on economic growth. Meanwhile, research by Alhayria & Azaluddin, (2023) dan Luhfiana et al., (2022) indicates that interest rates do influence economic growth.

Therefore, drawing conclusions from various existing issues and the inconsistency of previous research findings, the aim of this study is to determine whether macroeconomic factors represented by interest rates, exchange rates, and inflation influence economic growth in Indonesia, presenting the conceptual framework as follows:

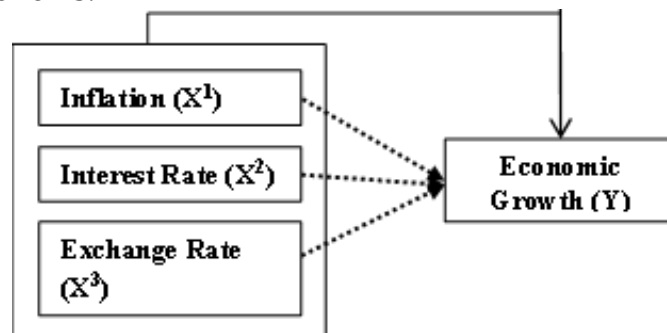


Figure 1. Conceptual Framework

Description:

- ..... = Partial Relationship Line
- = Simultaneous Relationship Line

## METHODOLOGY

This study employs a quantitative testing method with a descriptive approach. The research is conducted on Indonesia for the period 2017-2023, categorized by quarters. Data collection is done through acquisition methods using the official websites of the World Bank ([www.worldbank.org](http://www.worldbank.org)), International Monetary Fund ([www.imf.org](http://www.imf.org)), and Statistics Indonesia ([www.bps.go.id](http://www.bps.go.id)). Data analysis is carried out using statistical methods with the help of Eview 10 software. The study applies multiple linear regression analysis by combining time series data. The time series data covers a period of seven years, from 2017 to 2023. Several models can be used to estimate the regression model, including the common-effect model, fixed-effect model, and random-effect model. (Hamid et al., 2020). To accomplish this, the first step is to perform model reliability tests using the Chow test, Hausman test, and Lagrange Multiplier test. After testing the model fit and identifying the best estimation model, panel data regression is applied. Statistical tests such as the t-test, R<sup>2</sup> test, and F-test are then conducted to measure the level of significance.

## RESEARCH RESULT

### *Regretion Test*

As shown in Table 1, the results indicate that the Assymp. Sig value for the three variables (inflation, BI rate, and exchange rate) is 0.817, which is greater than 0.05 or 5%. Therefore, the data distribution is considered normal, fulfilling the first assumption. The second assumption is met because the Sig. Residual values for the inflation variable is  $0.077 > 0.05$ , the BI rate variable is  $0.144 > 0.05$ , and the exchange rate variable is  $0.237 > 0.05$ . Thus, it can be concluded that there is no heteroskedasticity for these three variables as each has a Sig. value above 0.05. Additionally, the inflation variable has a VIF value of 1.275, the BI rate is 1.181, and the exchange rate is 1.092. Therefore, it can be concluded that the data for the three variables do not exhibit multicollinearity, as they have VIF values less than 10.

**Table 1. Summary of Classical Assumption Tests**

| Variabel              | VIF   | Sig.<br>Residu<br>(Glejser) | Assymp.<br>Sig |
|-----------------------|-------|-----------------------------|----------------|
| Inflation (X1)        | 1,275 | 0,077                       |                |
| Interest Rate<br>(X2) | 1,181 | 0,144                       | 0,817          |
| Exchange Rate<br>(X3) | 1,092 | 0,237                       |                |

*Source: Processed Research Data, 2024*

Based on the output in Table 2, the Breusch-Godfrey value of 0.179 is greater than 0.05. This indicates that there is no issue of autocorrelation in the regression model used. In other words, the residuals from this regression model do not follow any specific pattern that would indicate the presence of autocorrelation. Therefore, the classical regression assumption regarding autocorrelation is satisfied, meaning that the parameter estimates in this model can be considered valid and reliable for further analysis.

**Table 2. Autocorrelation Test**

| Model | Breusch - Godfrey |
|-------|-------------------|
| 1     | 0,1794            |

Source: Processed Research Data, 2024

**Model Test**

In Table 3, the results show an R Square value of 0.320 and an Adjusted R Square value of 0.247. The R Square value indicates that the variables inflation, BI rate, and exchange rate account for 32% of the variation in the Gross Domestic Product (GDP). The F-statistic is 4.404, and the probability Sig. F value is 0.011. Since the F-statistic of 4.404 is greater than the F-table value of 2.70 and the probability Sig. F value of 0.011 is less than the research significance level of 0.05, it is significant. This means that inflation, BI rate, and exchange rate can explain 32% of the variability in GDP. Therefore, it can be concluded that the model in this study is suitable for hypothesis testing between the research variables.

**Table 3. Coefficient of Determination R<sup>2</sup>**

| R Square | Adj. R Square | F - Hitung | Sig. F |
|----------|---------------|------------|--------|
| 0,320625 | 0,247835      | 4,4048     | 0,0117 |

Source: Processed Research Data, 2024

**Hipotesis Test**

In Table 3 above, the results show an R Square value of 0.320 and an Adjusted R Square value of 0.247. The R Square value indicates that the variables inflation, BI rate, and exchange rate collectively explain 32% of the variation in Gross Domestic Product (GDP). The F-statistic is 4.404 with a significance probability Sig. F of 0.011. Since the F-statistic of 4.404 is greater than the critical F-table value (unknown) and the probability Sig. F value of 0.011 is less than the research significance level of 0.05, the results are significant. Therefore, it can be interpreted that inflation, BI rate, and exchange rate together can explain 32% of the variability in GDP. Consequently, it can be concluded that the model used in this study is suitable for hypothesis testing among the research variables.

**Table 4. Multiple Linear Regression Analysis**

| Variabel           | Koef. Regresi | T - Hitung | Sig.   |
|--------------------|---------------|------------|--------|
| Constant           | 8,1179        | 1,1756     | 0,2497 |
| Inflation (X1)     | -1,4097       | -3,5954    | 0,0012 |
| Interest Rate (X2) | 0,7721        | 1,8485     | 0,0751 |
| Exchange Rate (X3) | -0,0005       | -1,0176    | 0,3176 |

*Source: Processed Research Data, 2024*

If the coefficient of regression is 8.1179 as shown in Table 4, when formulated into a regression equation  $Y = 8,117 - 1,409X_1 - 0,772X_2 - 0,005X_3$ .

## DISCUSSION

### *The Effect of Inflation on Economic Growth*

The regression coefficient for the inflation variable (X1) is -1.409, with a t-statistic of -3.595 and a significance value of 0.001. The significance value of 0.001 is less than the research significance level of 0.05, indicating that the first hypothesis is accepted. This means that inflation has a significant negative effect on Indonesia's economic growth. During the COVID-19 pandemic period in 2020, Indonesia experienced a significant increase in the prices of basic goods due to the soaring inflation rates at that time. This high inflation had a significant negative impact on economic growth in Indonesia. High inflation tends to reduce people's purchasing power because prices of goods and services rise faster than incomes, leading to a decline in consumer spending. This decline in consumption directly affects aggregate demand, thereby hindering economic growth. Keynesian theory explains that high inflation reduces people's purchasing power as prices of goods and services rise faster than incomes, resulting in reduced consumption (Lubis, 2014). In addition, high inflation creates economic uncertainty, reduces investor confidence, and lowers investment due to increased risks associated with future price changes. Central banks may respond to high inflation by raising interest rates, which in turn increases the cost of borrowing and reduces investment and credit consumption. All these factors contribute to slowing economic growth, indicating a negative relationship between inflation and economic growth. This is consistent with research conducted by Kunthi et al., (2023) dan Mahendra et al., (2024) which state that inflation has a significant negative impact on economic growth.

### *The Effect of Interest Rate on Economic Growth*

The regression coefficient for the BI rate variable (X2) is 0.772, with a t-statistic of 1.848 and a significance value of 0.075. The significance value of 0.075 is greater than the research significance level of 0.05, so the second hypothesis is rejected, meaning that BI rate does not significantly affect Indonesia's economic growth. Increases in interest rates set by Bank Indonesia (BI) have a negative impact on economic growth. High interest rates cause individuals and businesses to be more inclined to save rather than spend on consumption or business development. This reduces aggregate demand in the economy. Furthermore,

high interest rates raise concerns among market participants about national economic uncertainty, which can reduce investment.

These findings are not in line with the studies by Alhayria & Azaluddin, (2023) and Luhfiana et al., (2022) which suggest that interest rates do influence economic growth. However, this study supports research conducted Kusumastuti et al., (2022); Rudiawan, (2019), yang menyimpulkan bahwa suku bunga tidak who concluded that interest rates do not have a significant impact on economic growth.

### *The Effect of Interest Rate on Economic Growth*

The regression coefficient for the exchange rate variable (X3) is -0.0005, with a t-statistic of -1.017 and a significance value of 0.317. The significance value of 0.317 is greater than the research significance level of 0.05, so the third hypothesis is rejected, meaning that the exchange rate does not significantly affect Indonesia's economic growth. One of the key indicators of economic growth is the currency exchange rate of a country. To ensure stable and sustainable economic growth, the government must maintain the stability of the Indonesian rupiah exchange rate. Positive economic growth often begins with a stable exchange rate. Conversely, a depreciation of the rupiah against the US dollar can be a serious factor hindering economic growth. The weakening of the rupiah indicates an increase in the prices of raw materials and imported goods. In the context of Indonesia, domestic industries still heavily rely on imported raw materials to maintain productivity, which increases production costs and slows economic growth. These findings contrast with the studies by Kunthi et al., (2023) and Mahendra et al., (2024) which suggest that in the long term, the exchange rate has an impact on economic growth. However, this study supports the findings of Kusumastuti et al., (2022) indicating that the exchange rate does not influence economic growth.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the research findings and analysis conducted, it can be concluded that inflation has a negative impact on Indonesia's economy during the period of 2016-2023. This indicates that rising inflation tends to hinder economic growth, reduce purchasing power, and lower levels of consumption and investment. Meanwhile, the variables of the BI rate and exchange rate did not show a significant influence on Indonesia's economy during the same period. In other words, changes in the interest rates set by Bank Indonesia and fluctuations in the rupiah exchange rate against the US dollar do not directly affect Indonesia's economic growth rate over that period. These findings underscore the importance of controlling inflation as a key policy to support sustainable economic growth.

## **ADVANCED RESEARCH**

Each study has its limitations. Future research could incorporate additional variables by introducing mediating or moderating variables in the analysis.

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