The Impact of Income Inequality, Foreign Investment, and Inflation on Gross Domestic Product in Indonesia

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Abstract
Economic growth is an important economic instrument for the progress of a country so that the welfare of the people improves. Therefore, the government needs to pay attention to income inequality, investment, and maintaining price stability. Therefore, this study aims to analyze the impact of income inequality, foreign investment, and inflation on economic growth. For this purpose, data from 10 years, from 2014 to 2023, has been considered and analyzed using time series regression. The results of the study show that there is no significant impact of income inequality, foreign investment, and inflation on economic growth. It is recommended that the government focus on promoting inclusive economic growth by targeting the strengthening of the informal sector and underdeveloped regions, expanding the scope of education, training, and productivity programs for low-income communities, and expanding purchasing power and economic inclusion, which are more important in maintaining the balance between prices and growth.
Keywords: Economic Growth, Income Inequality, Foreign Investment, Inflation, Public Welfare.

1. Introduction

Economic growth is a key indicator in measuring a country's economic performance. In Indonesia, economic growth has been the government's main focus since the reform era, in line with the increasing need for inclusive and sustainable development. However, during the period from 2014 to 2023, the dynamics of Indonesia's economic growth showed vulnerability to various factors, including income inequality, foreign direct investment (FDI) flows, and inflationary pressures. These three variables play an important role, but the causal relationships and direction of their influence on economic growth remain a subject of debate in various empirical studies.

Income inequality in Indonesia is reflected in a relatively high Gini index, despite fluctuations over the past decade. Several studies show that high inequality tends to hamper economic growth. For example, Ostry, Berg, & Tsangarides (2014) in a study published by the International Monetary Fund stated that high income inequality has a negative impact on long-term growth. This is reinforced by research by Perroti (1996) showing that in developing countries, unequal income distribution can weaken social stability and reduce human capital accumulation. However, conflicting views are also found in the literature. Barro (2000) in the Journal of Economic Growth shows that at medium to high income levels, inequality can actually trigger growth through increased incentives for investment and innovation. Thus, it is important to examine how inequality plays a role in the context of Indonesia, which is currently developing.

In addition to inequality, foreign direct investment (FDI) is also an important factor in driving Indonesia's economic growth. FDI is considered to bring technology transfer, job creation, and increased productivity in strategic sectors. Alfaro et al. (2004) in Review of Economics and Statistics show that FDI has a positive effect on

growth, especially when accompanied by an efficient domestic financial system. This aligns with the findings of Tang & Tan (2014) in Economic Modelling, which conclude that FDI in Southeast Asia, including Indonesia, contributes to long-term economic growth. However, some studies criticize the effects of FDI, which are sometimes overestimated. Herzer, Huhne, & Nunnenkamp (2014) in The World Economy reveal that in many cases, FDI only provides short-term effects and does not contribute significantly to growth without strengthening local capacity and supporting policies.

On the other hand, inflation as an indicator of price stability also plays a role in influencing the economic climate. High inflation can reduce people's purchasing power and lower consumption and investment levels. Gokal & Hanif (2004) in IMF research identified that inflation has a negative relationship with economic growth, especially in developing countries. Another study by Sarel (1996) in IMF Staff Papers shows that the effect of inflation on growth is non-linear: at moderate inflation rates, the effect is relatively neutral, but becomes negative at high inflation rates. However, there is also a view that moderate inflation can stimulate the economy by increasing aggregate demand, especially during a recession. Bruno & Easterly (1998) in the Journal of Monetary Economics state that the negative effects of inflation are only dominant during hyperinflation.

Given the diverse and sometimes contradictory findings, this study aims to empirically analyze the impact of income inequality, FDI, and inflation on Indonesia's economic growth during the period 2014 to 2023. Through a quantitative approach using time series data, this study is expected to contribute academically and practically to the formulation of more effective and inclusive macroeconomic policies.

2. Literatur Review

This study refers to the Endogenous Growth Theory, which emphasizes that economic growth is not only determined by the accumulation of physical capital and labor, but also by internal factors such as investment, government policy, income distribution, and price stability (Romer, 1990). According to this theory, macro variables such as foreign direct investment (FDI), inflation, and income inequality can affect total factor productivity and long-term growth.

The relationship between income inequality and economic growth is a complex topic. Several studies show that high inequality can hinder growth by weakening social cohesion and reducing access to education and human capital. On the other hand, Barro (2000) shows that in the context of developing countries, the relationship between inequality and growth can take the form of an inverted U, depending on the country's income level and economic structure. In Indonesia, empirical studies by Saraan, et.al. (2019) show that despite increased growth, inequality remains high, especially between regions.

FDI plays an important role as a source of external capital, technology transfer, and increased competitiveness in the industrial sector. Alfaro et al. (2004) state that FDI has a positive impact on growth, especially if the domestic financial sector is well developed. However, not all FDI has a positive impact. Herzer et al. (2014) found that in some developing countries, FDI actually increases inequality and does not have a significant impact on growth if it is not supported by domestic capacity building.

Steady inflation is necessary to maintain a favorable investment and consumption climate. However, excessively high inflation creates uncertainty and hinders growth. Sarel (1996) found that inflation has a non-linear effect on growth,

with a threshold of around 8%. On the other hand, Bruno & Easterly (1998) caution that only extreme inflation (hyperinflation) truly damages the economy. Moderate inflation in the context of post-crisis economic recovery may actually support aggregate demand.

Based on the above literature, income inequality, foreign investment, and inflation have complex relationships with economic growth. Contradictory findings among researchers indicate that domestic context, economic structure, and macroeconomic policies play a significant role in determining the direction and strength of influence of each variable. Therefore, empirical studies focused on the Indonesian context over the past decade (2014–2023) are needed to fill this research gap.

3. Method

This research focuses on Indonesia with secondary data from the Central Statistics Agency using purposive sampling method over a 10-year period from 2014 to 2023. This period was chosen to assess the achievements of President Joko Widodo leading Indonesia for 2 terms focusing on economic growth policies, income inequality, foreign direct investment, and inflation control. The research variables used are Income Inequality (GINI), Foreign Direct Investment (FDI), and Inflation (INF) as independent variables, and Economic Growth (EG) as the dependent variable. The testing of the research variables uses Time series regression with EViews 10. The definitions of each research variable can be seen in Table 1 using the following equation (1):

$$GDP_t = \beta_0 - \beta_1 \cdot X_1 + \beta_2 \cdot X_2 - \beta_3 \cdot X_3 + \varepsilon_t \tag{1}$$

Where:
X_1 = Gini index as an indicator of income inequality
X_2 = Foreign direct investment
X_3 = Inflation rate
Y = Gross Domestic Product growth
ε_t = Error term (disturbance)

Hypothesis:
H1: Gini index has a negative effect on Gross Domestic Product in Indonesia.
H2: Foreign direct investment (FDI) has a positive effect on Gross Domestic Product in Indonesia.
H3: Inflation has a negative effect on Gross Domestic Product in Indonesia.

4. Result and Discussion

Table 1. Descriptive Statistics of GDP, Gini index, FDI, Inflation

	GDP	Gini index	FDI	Inflation
Mean	4.216000	0.356	229.7	3.586000
Maximum	5.31	0.414	293	8.36
Minimum	-2.070000	0.380	192	1.68
Std. Dev.	2.252812	0.112	29.22	1.98

Descriptive Summary

The main analysis was conducted using descriptive statistics from the variables listed above in Table 1. The average GDP was quite high for the 2014-2023 period. The

average Gini index shows that income distribution inequality is moderate (middle). The average FDI shows that foreign investors are still quite interested in investing in Indonesia. However, average inflation is fairly controlled.

Results

To obtain research results regarding the impact of income inequality, foreign investment, and inflation on gross domestic product, a step-by-step calculation is carried out in accordance with applicable scientific principles. The first step is a diagnostic test by conducting a classical assumption test to ensure that the data is unbiased, known as BLUE (Best Linear Unbiased Estimator).

Figure 1. Heteroskedasticity Test
Sources: The calculation results generated by Eviews 10 Software

The Heteroskedasticity Test using Breusch-Pagan-Godfrey as shown in Figure 1 with Prob. Chi-Square (3) of 0.2851. This research model is considered good because Prob. > 0.05, so it can be said that there is no heteroskedasticity.

Figure 2. Autocorrelation Test
Sources: The calculation results generated by Eviews 10 Software

The Autocorrelation Test using the Breusch-Godfrey Serial Correlation LM Test is shown in Figure 2 with a Prob. F(2,4) of 0.6613. The results of the Autocorrelation Test indicate that the model does not have an issue with Autocorrelation because Prob.F > 5%.
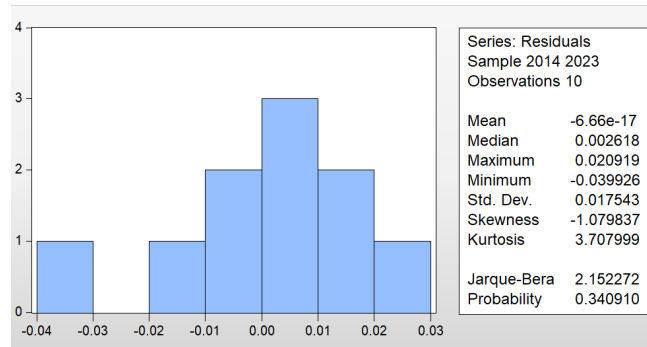

Series: Residuals	
Sample 2014 2023	
Observations 10	
Mean	-6.66e-17
Median	0.002618
Maximum	0.020919
Minimum	-0.039926
Std. Dev.	0.017543
Skewness	-1.079837
Kurtosis	3.707999
Jarque-Bera	2.152272
Probability	0.340910

Figure 3. Normality Test
Sources: The calculation results generated by Eviews 10 Software

The test of data normality using Jarque-Bera is shown in Figure 3 with a Jarque-Bera value of 2.152272 and Probability of 0.340910. The results of the data normality test indicate that the model is good because Probability > 5%. Figure 4 shows the fit of the specified model from the regression analysis technique.

Dependent Variable: GDP_GROWTH
Method: Least Squares
Date: 07/26/25   Time: 01:27
Sample: 2014 2023
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.533576	0.542867	-0.982887	0.3636
GINI	1.157095	1.269536	0.911431	0.3972
FDI	0.005845	0.003925	1.489398	0.1870
INFLATION	-0.292397	0.730000	-0.400543	0.7026

R-squared	0.393831	Mean dependent var	0.042170
Adjusted R-squared	0.090746	S.D. dependent var	0.022532
S.E. of regression	0.021485	Akaike info criterion	-4.553717
Sum squared resid	0.002770	Schwarz criterion	-4.432683
Log likelihood	26.76858	Hannan-Quinn criter.	-4.686491
F-statistic	1.299409	Durbin-Watson stat	2.436737
Prob(F-statistic)	0.357848		

Figure 4. Regression Result
Sources: The calculation results generated by Eviews 10 Software

The following is the mathematical formula that represents the linear relationship between Gross Domestic Product (GDP), Gini Index as an indicator of income inequality (GINI), Foreign direct investment (FDI), Inflation Rate (INF) (Eq. 2):

$$GDP_t = -0.5333576 - \beta_1 \cdot (1.157095) + \beta_2 \cdot (0.005845) - \beta_3 \cdot (-0.292397) + \varepsilon_t \qquad (2)$$

The overall results of the tests produced statistically insignificant values. Figure 4 shows the regression results as follows. which indicate that income inequality does not have a significant impact on GDP with a probability value of 0.3972 > 5%. FDI does not have a significant impact on GDP with a probability value of 0.1870 > 5%. Similarly,

Inflation does not have a significant impact on GDP with a probability of 0.7026 > 5%. Therefore, the alternative hypotheses formulated in H1, H2, and H3 are rejected.

Economic growth in Indonesia tends to be exclusive, driven mainly by the upper-middle class and capital-intensive sectors, rather than by vulnerable groups or the poor. In other words, Indonesia's economy continues to grow despite income inequality, because the contribution of low-income groups to GDP is relatively small. Household consumption is the main driver of Indonesia's economy. This consumption mostly comes from the middle and upper-middle classes, who aren't directly affected by inequality. Sectors like mining, oil and gas, plantations, and manufacturing play an important role in Indonesia's GDP, but they don't hire a lot of poor workers. This means that even though there's inequality in the informal labor sector, growth still happens because GDP growth comes from sectors that aren't affected by income inequality. Social assistance programs and subsidies are not yet sufficient to reduce inequality or boost the productivity of the poor, so the poor remain poor, but the rich and middle classes continue to drive consumption and investment, so growth continues despite high inequality. Economic growth and inequality are not always directly linked in the short term, especially in developing countries. Inequality can be "tolerated" by the economic system as long as consumption, exports, and investment continue from the dominant economic groups.

Foreign investment in Indonesia has increased quantitatively, but its contribution to GDP remains limited because it is not channeled into sectors capable of generating inclusive and sustainable growth. Most investment goes into low value-added sectors, such as property, mining, and utilities. These sectors are limited in creating jobs and long-term productivity, so their impact on growth is limited. Much of the foreign direct investment (FDI) in Indonesia follows a pattern of repatriating profits to the country of origin, thereby adding little to domestic output or reinvestment. This results in a large gross investment but a small net effect on growth. Indonesia's Incremental Capital Output Ratio (ICOR) ranges between 6–7, significantly higher than other ASEAN countries (Vietnam 4, Thailand 3–4). This means that more capital is needed to generate the same additional output an indication that investment efficiency remains low. Although investment values are increasing, their effectiveness is hampered by overlapping regulations, slow bureaucratic permitting processes, and legal and tax uncertainties. This leads to "idle investment" or underutilized investment, which does not drive real growth.

Inflation in Indonesia tends to be moderate and controlled, and does not reach levels that disrupt macroeconomic stability or investment systematically. In addition, Indonesia's economic structure, which is dominated by household consumption and dependence on the informal sector and primary commodities, causes the effects of inflation on investment and production to be indirect and non-linear. Throughout 2015–2023, Indonesia's inflation averaged only around 3–4%, falling within the category of moderate inflation, which in theory does not hinder economic growth. In macroeconomic theory, moderate inflation can even drive growth by providing healthy price signals to producers. Approximately 54–57% of Indonesia's GDP comes from household consumption. Since the majority of the population is still in the lower-middle income bracket, consumption tends to be inelastic to moderate price changes, so low inflation does not necessarily suppress growth. Bank Indonesia has consistently applied an inflation targeting framework (target 3% ±1), which maintains inflation expectations and supports stable growth.

The government must focus more on strengthening economic inclusion through the empowerment of MSMEs and the informal sector and undertake fiscal reforms to expand the coverage of social programs and improve the effectiveness of spending. In addition, the government must accelerate regional development through infrastructure, education, and connectivity, as well as improve the public education and health systems to close the gap between social classes. Inflation control remains a priority, but without sacrificing long-term growth momentum. Food, energy, and logistics reforms will be more effective in controlling structural inflation than suppressing domestic demand. Expanding purchasing power and economic inclusion are more important in maintaining the balance between prices and growth.

5. Conclusion

Based on the analysis of data from the period 2014–2023 in Indonesia, this study concludes that income inequality, Foreign Direct Investment (FDI), and inflation do not have a significant effect on the growth of Gross Domestic Product (GDP). The probabilities of each variable, income inequality (0.3972 > 5%), FDI (0.1870 > 5%), and inflation (0.7026 > 5%), indicate that statistically, these variables are not the main determining factors in the dynamics of national economic growth during the study period. This finding indicates that Indonesia's GDP growth rate during that decade was supported more by other structural factors, such as strong domestic consumption, large-scale infrastructure development, expansion of government spending, and maintained price stability. Additionally, the consistency of fiscal and monetary policy during President Joko Widodo's administration, including effective inflation management and budget optimization for strategic projects, played a role in sustaining economic growth despite macro variables such as income inequality, FDI, and inflation not making significant direct contributions to GDP. This finding reinforces the view that in the context of developing countries with a large domestic economic base, structural factors and long-term development policies can have a more dominant influence compared to conventional macroeconomic indicators.

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