THE IMPACT OF ECONOMIC GROWTH AND INFLATION ON INCOME INEQUALITY AND POVERTY IN SULAWESI ISLAND

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Abstract

This study analyzes the impact of economic growth and inflation on income inequality and poverty in Sulawesi Island, using secondary panel data from 2011 to 2023. The methods applied include panel data regression and path analysis with the aid of EViews 12 software. The analysis results show that economic growth has a significant negative impact on income inequality, while inflation has a significant positive effect on income inequality. However, neither economic growth nor inflation has a significant direct impact on poverty. Income inequality, on the other hand, has a significant positive effect on poverty and acts as a mediating variable in the relationship between economic growth, inflation, and poverty.

Keyword: *Income Inequality; Poverty; Economic Growth; Inflation*

A. INTRODUCTION

Economic development, which aims to improve living standards and societal well-being, underwent a conceptual shift in the 1970s. Its focus moved from merely pursuing high economic growth to emphasizing poverty reduction and addressing inequality (Arsyad, 2015). In Indonesia, particularly on the island of Sulawesi, income inequality and poverty remain persistent problems closely linked to the pace of economic growth and inflation rates. Uneven development and high inflation can hinder poverty alleviation efforts and deepen income inequality, which in turn increases the socio-economic vulnerability of communities (Shehu & Abba, 2020). Social democracy theory posits that poverty is a structural issue resulting from injustice and inequality in access to resources (Pinontoan, 2020).

Theoretically, economic growth and inflation affect income distribution and poverty. Kuznets argues that inequality increases in the early stages of economic growth but improves as economic progress continues (Todaro & Smith, 2011). The trickle-down effect theory suggests that the benefits of economic growth flow from high-income to low-income groups, but if the benefits are limited, inequality and poverty remain high. Therefore, pro-poor economic growth is essential for effectively reducing poverty(Rahmah, 2023). In addition to economic growth, according to Arsyad, inflation is one of the factors that can cause income distribution inequality in developing countries (Astary et al., 2024). High inflation can worsen income distribution, reduce domestic savings, which are crucial as a source of investment funds, cause trade deficits, and trigger political instability (Hakim, 2018). Low-income groups tend to be the most affected by inflation, as their purchasing power declines more rapidly compared to wealthier groups. This condition is relevant in Sulawesi, where income disparities between regions indicate a deep economic imbalance.

Table 1. Data on Economic Growth Rate, Inflation, Gini Index, and Poverty in Sulawesi Island in 2023.

Province	*Economic Growth Rate (%)*	*Inflation (%)*	*Gini Index*	*Poverty (%)*
North Sulawesi	5.48	2.87	0.37	7.38
Central Sulawesi	11.91	1.87	0.304	12.41
South Sulawesi	4.51	2.89	0.377	8.7
Southeast Sulawesi	5.35	2.61	0.371	11.43
Gorontalo	4.5	3.88	0.417	15.15
West Sulawesi	5.25	1.82	0.351	11.49

Source: Statistics Indonesia, 2024.

Based on Table 1, the 2023 data shows variation in the economic growth rate, inflation, Gini index, and poverty levels across six provinces on Sulawesi Island. Central Sulawesi recorded the highest economic growth at 11.91% with low inflation of 1.87%, while Gorontalo experienced the highest inflation at 3.88%, despite having relatively low economic growth at 4.5%. Income inequality across the provinces is at a moderate level, with the Gini index ranging from 0.351 to 0.417, except for Central Sulawesi, which is close to low inequality at 0.304. Poverty also varies, with Gorontalo recording the highest poverty rate at 15.15%, while North Sulawesi has the lowest at 7.38%. Overall, these data reflect the diverse imbalance in income distribution and poverty across Sulawesi Island.

This research is crucial for comprehending the economic dynamics of Sulawesi Island. It investigates how economic growth and inflation influence poverty both directly and indirectly through income inequality. The study's results are anticipated to support policy formulation aimed at addressing income inequality and poverty. Additionally, this work enriches academic discourse on the connection between economic growth, inflation, income inequality, and poverty.

B. LITERATUR REVIEW

Poverty refers to a state where an individual is unable to fulfill essential needs for a basic quality of life, including access to healthcare, adequate living standards, personal freedom, self-worth, and equal respect within society. Economic factors such as inequality in resource ownership, low human capital quality, and limited access to capital contribute to poverty (Putri & Aminda, 2024). The Neo-Liberal theoretical approach asserts that poverty is primarily an individual issue arising from personal weaknesses or choices, with the role of the state in poverty alleviation being minimal. In contrast, the Social-Democratic theory argues that poverty is caused by structural injustices that obstruct certain groups' access to resources, and that equal access to education, healthcare, and decent income is essential to achieving true independence (Pinontoan, 2020).

Income inequality is the uneven distribution of income among households, leading to a widening gap between groups in society (Todaro & Smith, 2011). The Gini coefficient is used to measure inequality, ranging from 0 (perfect equality) to 1 (total inequality). Arsyad identifies factors contributing to inequality in developing countries, such as high population growth, inflation without production increases, uneven regional development, and protective industrial policies (Astary et al., 2024). Kuznets' theory indicates that during the initial phases of development, income distribution is skewed, but over time, economic growth can reduce inequality (Putri & Aminda, 2024).

Economic growth refers to the long-term increase in output per capita, driven by the internal processes of the economy (Boediono, 2014). Gross Regional Domestic Product (GRDP) is commonly employed to avaluate the economic growth of a region, influenced by the vailability of natural resources and production factors. Economic growth theory has evolved from Classical theory, which focuses on resources and capital, to Endogenous Growth theory, which emphasizes the importance of human capital and innovation (Liana et al., 2024). Meanwhile, Inflation is the continuous rise in the prices of goods and services, which can worsen income distribution, affecting purchasing power unevenly across income groups, thereby exacerbating inequality. According to Keynesian theory, inflation arises from an imbalance between demand and supply, while Structuralist theory views it as a result of economic rigidity, particularly in the production of essential goods (Boediono, 2014).

The connection between economic growth, inequality, and poverty suggests that, in the early stages, economic growth may increase inequality, but at later stages, inequality will decrease over time (Todaro & Smith, 2011). Arthur Lewis's trickle-down effect theory states that the benefits of economic growth are initially felt by the wealthy but gradually reach the poor through job creation (Rahmah, 2023). Meanwhile, The impact of inflation on income inequality and poverty is also multifaceted. Inflation can have a positive, negative, or U-shaped effect on inequality, depending on the relative composition of wealth and skills in income distribution. If wealth is more dominant, inflation increases inequality; if skills are more dominant, inflation can reduce inequality (Kim & Lin, 2023). According to Cardozo, inflation affects income distribution inequality depending on a country's initial level of inflation. Low initial inflation tends to negatively impact inequality, while high initial inflation tends to exacerbate it (Hakim, 2018). High inflation reduces the purchasing power of low-income groups, increasing poverty and worsening income distribution inequality (Fauza, 2020). Income inequality is also closely related to poverty. High inequality creates significant income disparities and worsens the conditions of the poor, as they struggle to meet basic needs (Nisa et al., 2020). Persistent inequality allows the wealthy to become increasingly prosperous, while the poor sink further into poverty, making the reduction of inequality essential in reducing poverty levelsan.

C. METHOD

This study was conducted in six provinces on Sulawesi Island in 2023 using secondary panel data with a total of 78 observations (2011-2023). The methods employed are panel data regression and path analysis using EViews 12 to examine the direct and indirect effects between variables, involving mediating variables. There are two structural equations in this study, namely:

1. Structural Equation 1: Models the impact of economic growth (LogX1) and inflation (X2) on income inequality (Y1) using the equation:
$$Y_1 = \alpha_0 + \alpha_1 LogX_1 + \alpha_2 X_2 + e_1 \quad (1)$$
2. Structural Equation 2: Explores the effects of economic growth (LogX1), inflation (X2), and income inequality (Y1) on poverty (Y2) using the equation:
$$Y_2 = \beta_0 + \beta_1 LogX_1 + \beta_2 X_2 + \beta_3 Y_1 + e_2 \quad (2)$$

The steps in conducting path analysis with panel data are selecting the best model, performing classical assumption tests, followed by model feasibility tests and hypothesis testing, and finally conducting mediation tests (Basuki, 2021). The mediation test uses the Sobel test to measure the significance of a mediating variable's influence on the relationship between variables. Data sources include Statistics Indonesia (BPS) and regional statistical offices. Variables are defined as follows: income inequality (Y1, Gini Index), poverty (Y2, poverty rate %), economic growth (X1, GRDP at constant prices, 2010 base year, in billions of rupiahs), and inflation (X2, CPI inflation rate %).

D. RESULTS AND DISCUSSION

1. RESULTS

Selection of the Best Model

The choice of model in panel data regression can be conducted through three tests: the Lagrange Multiplier (LM) test, the Chow test, and the Hausman test.

Table 2. Results of the Model Selection Test for Structure 1

Type of Test	*Result*		*Criteria*
	Structure 1	*Structure 2*	
LM Test	0.0000	0.0000	< 0.05 = REM, > 0.05 = CEM
Chow Test	0.0000	0.0000	< 0.05 = FEM, > 0.05 = CEM
Hausman Test	0.1500	0.0000	< 0.05 = FEM, > 0.05 = REM

Source: EViews 12 Output, 2024

Based on the results above, it can be observed that the most suitable model for structure 1 is the Random Effects model, whereas the Fixed Effects model is the best choice for structure 2

Classical Assumption Test

Table 4. Results of the Normality Test

Test	*Structure 1*	*Structure 2*	*Conclucion*
Normality Test	Prob. > 0.05	Prob. > 0.05	Data meet the normality assumtion
Multicollinearity	All correlation < 0.70	All correlation < 0.70	No multicolinearity detected
Heteroskestisity	Prob. > 0.05 for all variables	Prob. > 0.05 for all variables	No heteroskedasticity detected

Source: EViews 12 Output, 2024

The diagnostic tests indicate that the data meet the assumptions of normality, no multicollinearity, and no heteroskedasticity, making it suitable for further analysis.

Model Feasibility and Hypothesis Testing

Model Feasibility Test (Coefficient of Determination)

Table 7. Results of the Coefficient of Determination Test

	Structure 1	*Structure 2*
R-Squared	0.260456	0.939232
Adjusted R-Squared	0.240735	0.932187

Source: EViews 12 Output, 2024

The results presented in Table 7 indicate that in Structure 1, the independent variables (economic growth and inflation) account for 26.04 % of the income inequality in Sulawesi, while the remaining 73.96% is influenced by other factors not included in the model. In Structure 2, the independent variables (economic growth, inflation, and income inequality) explain 93.92% of poverty in Sulawesi, with the remaining 6.08% influenced by other factors not considered in the model.

Hypothesis Testing

Simultaneous Test (F)

Table 8. Results of the Simultaneous Test (F)

	Structure 1	*Structure 2*	*Criteria*
F-statistik	13.20693	133.3087	Prob. < 0.05 = Signifikan
Prob(F-statistik)	0.000012	0.000000	Prob. > 0.05 = No Signifikan

Source: EViews 12 Output, 2024

Based on Table 8 above, in Structure 1, both economic growth and inflation together have a significant impact on income inequality in Sulawesi. Meanwhile, economic growth, inflation, and income inequality combined have a significant effect on poverty in Sulawesi.

Partial Test (t)

Table 9. Results of the Partial Test (t)

Variable	*Coefficient*		*Probability*		*Criteria*
	Structure 1	*Structure 2*	*Structure 1*	*Structure 2*	
C	0.479009	8.925057	0.0000	0.0063	Prob. < 0.05 =
LOG_EG	-0.009599	-0.273154	0.0100	0.1175	Signifikan
INF	0.003736	0.036896	0.0004	0.4464	Prob. > 0.05 = No
GINI	-	15.556804	-	0.0038	Signifikan

Source: EViews 12 Output, 2024

The estimation results in Table 9 above can be interpreted as follows:

1) Economic growth variable significantly affects income inequality.
2) Inflation variable significantly affects income inequality.
3) Economic growth variable does not have a significant affects on poverty.
4) Inflation variable does not have a significant affects on poverty.
5) Income inequality variable significantly affects poverty.

Mediation Test using the Sobel Test

Table 10. Results of Mediation Test using the Sobel Test

Variable	*t-statistic*	*p-value*
Econimic Growth	-1.982744	0.047395
Inflation	2.324645	0.020105

Source: Sobel Test Calculator Output, 2024

According to the results shown in Table 10, the t-statistic values for both economic growth and inflation exceed 1.96, and their p-values are below [illegible] s inc[illegible] at income inequality functions as an intermediary variable in th[illegible] cti[illegible] en [illegible] c growth and poverty, as well as between inflation and poverty.

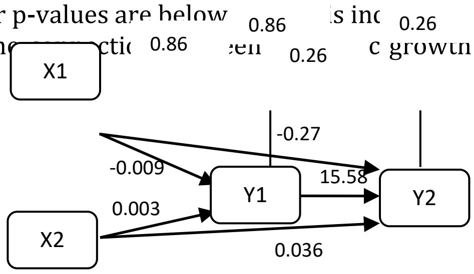

Fig. 3. Path Diagram Results

Based on Figure 3 above, the direct effect, indirect effect, and total effect can be determined as shown in Table 11 below.

Table 11. Direct and Indirect Impacts of Independent Variables on Poverty

Variable	*Direct Impact*	*Indirect Impact*	*Total Impact*
Economic Growth	-0.273154	-0.140022	-0.413176

Inflation	0.036896	0.046674	0.08357

Source: Data processed in 2024

2. DISCUSSION

The Impact of Economic Growth on Income Inequality

The regression results show that economic growth has an inverse relationship with income inequality on Sulawesi Island. With a coefficient of -0.009599 and a probability value of 0.0100 < 0.05, the findings indicate that a 1 percent increase in economic growth will lead to a 0.00653 percent reduction in income inequality across the provinces of Sulawesi Island. These results support Kuznets' hypothesis, which posits that economic growth helps reduce income inequality over time (Todaro & Smith, 2011).

The increase in economic growth on Sulawesi Island is driven by infrastructure development and the growth of sectors such as fisheries, oil, gas, and cocoa. This condition is consistent with the research by (Firdhausy et al., 2023), He discovered that economic growth is negatively correlated with income inequality. The ongoing development of infrastructure and various economic sectors on Sulawesi Island plays a vital role in stimulating economic growth, which, in turn, helps reduce income inequality in the region.

The Impact of Inflation on Income Inequality

The test results show that inflation is positively correlated with income inequality on Sulawesi Island, with a probability value of 0.0004 < 0.05 and a coefficient of 0.003736. This implies that a 1 percent increase in inflation will result in a 0.0033736 percent increase in income inequality across the provinces of Sulawesi Island. High inflation can worsen income distribution, reduce domestic savings, which are an important source of investment funds, and create deficits in the trade balance and political instability. The impact of inflation on inequality depends on the initial inflation rate in a region; low initial inflation tends to have a negative impact on income inequality, while high initial inflation tends to exacerbate inequality (Hakim, 2018). This study is consistent with the findings of (Astary et al., 2024), which show that inflation significantly impacts income inequality. In Sulawesi Island, high inflation worsens income inequality, primarily because inflation can reduce purchasing power and increase the cost of living, which disproportionately affects low-income communities.

The Impact of Economic Growth on Poverty

Analysis shows the economic growth variable has a negative but insignificant relationship with poverty in Sulawesi Island, with a probability value of 0.1175 > 0.05 and a coefficient of -0.273154. This implies that economic growth does not significantly affect the poverty rate in the region. The reserch in this cse alings with the findings of (Aini & Nugroho, 2023), which also show that economic growth does not significantly affect poverty. One of the main reasons is the uneven distribution of development outcomes across Sulawesi Island. Economic growth tends to be concentrated in certain areas, benefiting only a small portion of the population or specific regions. This condition causes people in remote or less developed areas to not feel the direct impact of economic growth, which ultimately keeps poverty as a major challenge in Sulawesi Island.

The Impact of Inflation on Poverty

The analysis results imply that inflation exhibits positive though not statiscally significant impact on poverty in Sulawesi Island, as evidenced by the probability value of 0.44764> 0.05 and a coefficient of 0.036896 The study shows increases or decreases in inflation do not significantly affect poverty in Sulawesi Island. The findings of this study suggest that inflation does not influence poverty, which contrasts with the research by (Esterly & Fischer, 2001), which asserts that inflation impacts the poor. However, this study aligns with (Pratiwi, 2022) research, which claim that inflation does not significantly affect poverty. Inflation is a macroeconomic factor that can influence changes in a country's poverty level. The poor are not significantly affected by inflation because they already lack purchasing power, so even when inflation occurs, they remain without the ability to afford goods and services.

The Impact of Income Inequality on Poverty

Research results indicate that income inequality has a significant impact on poverty in Sulawesi Island, with a probability value of 0.0038 < 0.05. This finding supports Sugyarto's statement (Nisa et al., 2020), which asserts that inequality exacerbates poverty and can be seen as a form of poverty itself. The high level of inequality between provinces in Sulawesi Island reflects the development gap between regions. This inequality causes some areas to develop more rapidly, while others lag behind, and the uneven distribution of development results in an increase in poverty in the less developed areas.

The Indirect Impact of Economic Growth on Poverty Through Income Inequality

Resecarh of the Sobel test, the p-value of 0.047395 < 0.05 indicates that economic growth have an indirect impact on poverty through income inequality. In other words, the economic growth that occurred between 2011 and 2023 succeed in reducing poverty in Sulawesi Island through the influence of income inequality. Research results of this study align with the Trickle-down effect theory, which suggests that economic growth can reduce poverty through an indirect effect, where the benefits of economic growth flow from the rich to the poor. This means that, although economic growth occurs, poverty can only decrease to a small extent because the poor receive very little benefit from the overall economic gains created (Rahmah, 2023). These findings align with the study by (Rasyid & Sa'roni, 2023) which emphasizes that economic growth has a significant negative effect on poverty. Economic growth stimulates production, creates job opportunities, and helps reduce poverty. For example, the growth of the tourism industry in North Sulawesi, particularly in Bunaken, has created numerous jobs in the service sector, thereby contributing to the reduction of poverty in the area.

The Indirect Impact of Inflation on Poverty Through Income Inequality

Research the Sobel test, the inflation variable shows that income inequality can mediate the impact of inflation on poverty, with a P-Value of 0.02010597 < 0.05. This indicates that inflation has an indirect impact on poverty through income inequality, with the indirect effect amounting to 0.08357%. Research results of this study align with the research conducted by (Esterly & Fischer, 2001) who stated that inflation negatively impacts the poor. Inflation affects income distribution, with the most detrimental effects being felt by low-income groups. In Sulawesi, rising inflation can worsen income inequality, which in turn increases poverty, especially among low-income communities. The poor, who already have limited purchasing power, will face even more difficulties in coping with rising prices of goods and services, while wealthier individuals can still manage.

E. CONCLUSION

This study examines the connection between economic growth, inflation, income inequality, and poverty on Sulawesi Island. Economic growth has a negative effect on income inequality, supporting Kuznets' hypothesis, but it does not directly affect poverty. On the other hand, inflation exacerbates income inequality and indirectly increases poverty, particularly affecting low-income groups. Income inequality significantly contributes to poverty, as regional disparities lead to economic growth benefits being concentrated in specific areas, leaving remote regions behind. The Sobel test shows that both economic growth and inflation influence poverty indirectly through income inequality. This highlights the need to reduce income inequality to alleviate poverty and improve welfare on Sulawesi.

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