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The Effect of Inflation and Average Expenditure on Poverty in Indonesia (A Case Study of 34 Provinces)

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ABSTRACT: This study analyzes the effect of inflation and average per capita expenditure on poverty in Indonesia using panel data from 34 provinces over the period 2015-2024. Poverty remains a multidimensional socio-economic issue that is closely related to macroeconomic conditions and household purchasing power. This study employs a quantitative approach using panel data regression. Model selection was conducted through the Chow test, Hausman test, and Lagrange Multiplier (LM) test, which indicated that the Random Effects model was the most appropriate. The results of classical assumption tests confirm that the model does not suffer from multicollinearity or heteroskedasticity. The regression results reveal that inflation does not have a significant effect on poverty levels in Indonesia. Similarly, average per capita expenditure is found to have no significant effect on poverty. The simultaneous test also indicates that inflation and average expenditure jointly do not significantly affect poverty. The low coefficient of determination suggests that variations in poverty across provinces are largely explained by factors outside the model, such as income inequality, labor market conditions, human capital quality, and regional structural characteristics. These findings indicate that poverty in Indonesia is a complex and structural problem that cannot be addressed solely through macroeconomic stabilization, but requires more comprehensive and region-based policy approaches.

KEYWORDS: Poverty, Inflation, Average Expenditure, Panel Data, Indonesia

I. INTRODUCTION

Poverty remains a socio-economic problem that continues to be a major focus of development in many countries, including Indonesia. Poverty is not only associated with low income levels but also reflects limited access to basic services and economic opportunities, making it a multidimensional phenomenon (Sen, 1999). In the context of Indonesia, although the poverty trend has shown a declining tendency over the past two decades, this achievement remains vulnerable to various economic shocks, such as global crises and the COVID-19 pandemic (World Bank, 2022). This vulnerability indicates that poverty dynamics are strongly influenced by macroeconomic conditions and purchasing power, particularly among low-income groups. One macroeconomic variable that plays a crucial role in affecting purchasing power is inflation. Price increases, especially in food and energy commodities, have the potential to raise the expenditure burden of poor households and reduce their real consumption (Ackley, 1963). Therefore, inflation is often associated with rising poverty levels, particularly in developing countries with limited social protection systems.

In addition to inflation, average expenditure per capita is a commonly used indicator to reflect the level of social welfare. An increase in expenditure per capita generally indicates improvements in economic capacity and quality of life (Deaton, 1997). However, aggregate increases in expenditure do not always correspond with reductions in poverty when income distribution is unequal and purchasing power differs across regions (Kuznets, 1955). Variations in inflation and average expenditure across provinces indicate that poverty dynamics in Indonesia cannot be explained solely at the national level but require regional-level analysis. Moreover, previous studies examining the effects of inflation and expenditure on poverty have produced mixed findings. Therefore, this study aims to analyze the effect of inflation and average expenditure on poverty levels in Indonesia across 34 provinces. The findings are expected to strengthen the basis for formulating inflation control policies and improving social welfare in a more effective and equitable manner.

II. THEORETICAL FRAMEWORK

A. Poverty

Poverty is defined as a condition in which individuals or households are unable to meet minimum living standards due to limited economic resources. Poverty measurement commonly employs income or expenditure approaches, whereby individuals are classified as poor if they fall below the established poverty line (World Bank, 2000). In addition, poverty is understood as a multidimensional phenomenon reflecting limited access to basic capabilities such as education, health, and economic opportunities (Sen, 1999). In developing countries, macroeconomic conditions play a crucial role in shaping poverty dynamics through their impact on household purchasing power and welfare.

B. Inflation and Poverty

Inflation refers to a general and sustained increase in the prices of goods and services, which reduces purchasing power (Ackley, 1963). The impact of inflation is more strongly felt by low-income groups, as most of their income is allocated to basic consumption needs. Rising prices increase the cost of living and suppress real consumption, leading to the theoretical expectation that inflation has a positive relationship with poverty levels (Fischer & Modigliani, 1978).

C. Average Expenditure and Poverty

Average expenditure per capita is an indicator of welfare that reflects the economic capacity of society. An increase in per capita expenditure indicates improved purchasing power and greater access to goods and services, which may potentially reduce poverty levels (Deaton, 1997). However, the effect of expenditure on poverty is highly dependent on the equity of its distribution. If increases in expenditure are enjoyed only by certain groups, the impact on poverty reduction becomes limited (Kuznets, 1955).

D. Conceptual Relationship

Based on the theoretical framework, poverty is influenced by inflation and average expenditure through purchasing power and welfare mechanisms. Inflation is expected to increase poverty by reducing real income, while increases in average expenditure are expected to reduce poverty through improvements in living standards.

E. Reseacrh Hypotheses

Based on the theoretical framework and previous studies, the hypotheses proposed in this study are as follows:

H_1: Inflation has a positive and significant effect on poverty levels in Indonesia.

H_2: Average expenditure per capita has a negative and significant effect on poverty levels in Indonesia.

H_3: Inflation and average expenditure simultaneously have a significant effect on poverty levels in Indonesia.

III. RESEARCH RESULT

Before estimating the panel regression model, model selection was conducted through a series of tests, namely the Chow test, Hausman test, and Lagrange Multiplier (LM) test. Based on the results of these tests, the Random Effects model was identified as the most appropriate model for this study. Therefore, all subsequent estimations were performed using the Random Effects approach.

Multicollinearity Test

	X1	X2
X1	1	-0.2577571...
X2	-0.2577571...	1

Heteroskedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.514835	0.183001	2.813298	0.0052
X1	-3.10E-05	0.000152	-0.203272	0.8390
X2	-0.023232	0.027602	-0.841678	0.4006

After selecting the model, classical assumption tests were conducted. The multicollinearity test results indicate that the correlation between inflation (X_1) and average expenditure (X_2) is -0.2578, which is far below the critical threshold of 0.80. This finding suggests that there is no multicollinearity problem in the model, and both independent variables are suitable for simultaneous inclusion in the regression analysis. Furthermore, the heteroskedasticity test results show that the probability values for inflation (0.8390) and average expenditure (0.4006) exceed the 5% significance level, indicating that the panel regression model does not suffer from heteroskedasticity and satisfies the homoskedasticity assumption.

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Effects Specification	S.D.	Rho
Cross-section random	0.288487	0.9867
Idiosyncratic random	0.033461	0.0133

Weighted Statistics			
R-squared	0.002209	Mean dependent var	0.013569
Adjusted R-squared	-0.003712	S.D. dependent var	0.033306
S.E. of regression	0.033367	Sum squared resid	0.375209
F-statistic	0.373121	Durbin-Watson stat	0.897507
Prob(F-statistic)	0.688866		

Unweighted Statistics			
R-squared	0.000807	Mean dependent var	0.370197
Sum squared resid	26.27011	Durbin-Watson stat	0.012819

The results of the panel data regression estimation using the Random Effects approach for the period 2015-2024 across 34 provinces in Indonesia indicate that inflation and average expenditure do not have a significant effect on poverty levels. Partially, inflation has a negative coefficient of -3.10E-05 with a probability value of 0.8390, indicating that variations in inflation do not significantly affect changes in poverty levels. Similarly, average expenditure per capita has a negative coefficient of 0.023232 with a probability value of 0.4006, suggesting that increases in average expenditure have not been statistically proven to reduce poverty levels. The simultaneous test results also indicate that inflation and average expenditure together do not significantly affect poverty levels, as shown by the Prob(F-statistic) value of 0.688866. The low coefficient of determination (R^2 = 0.002209) suggests that most of the variation in poverty levels across provinces is explained by factors outside the model. Furthermore, the high value of the cross-sectional random effects (rho = 0.9867) indicates that regional heterogeneity plays a dominant role in explaining differences in poverty levels across Indonesia.

CONCLUSIONS

This study aims to analyze the effect of inflation and average expenditure per capita on poverty levels in Indonesia using panel data from 34 provinces over the period 2015-2024. Based on the results of the model selection process using the Chow test, Hausman test, and Lagrange Multiplier (LM) test, the Random Effects model was identified as the most appropriate model. The classical assumption tests further confirm that the regression model does not suffer from multicollinearity or heteroskedasticity, allowing for valid interpretation of the estimation results. The regression results indicate that inflation does not have a significant effect on poverty levels in Indonesia. Therefore, the first hypothesis (H_1), which states that inflation has a positive and significant effect on poverty, is rejected. This finding suggests that during the study period, inflation fluctuations did not directly affect poverty levels, possibly due to price stabilization policies, subsidies, and social protection programs that mitigated the impact of inflation on poor households.

The results also show that average expenditure per capita does not have a significant effect on poverty levels. Consequently, the second hypothesis (H_2), which states that average expenditure has a negative and significant effect on poverty, is also rejected. This finding implies that increases in average expenditure do not necessarily reflect improved welfare among poor households, particularly when such increases are predominantly enjoyed by middle- and high-income groups. Simultaneously, inflation and average expenditure per capita do not significantly affect poverty levels, leading to the rejection of the third hypothesis (H_3). The low coefficient of determination indicates that variations in poverty levels across provinces are largely influenced by other factors beyond the model, such as income inequality, labor market conditions, human capital quality, and regional structural characteristics. The high cross-sectional random effects further reinforce the conclusion that poverty in Indonesia is a complex structural issue requiring more comprehensive and region-based policy approaches.

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