

IMPACT OF INFLATION ON POVERTY LEVELS IN NORTH SUMATERA

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Abstract

Inflation has a significant impact on poverty levels in North Sumatra. This study aims to investigate the impact of inflation on poverty levels in North Sumatra. Inflation as a complex economic phenomenon, has significant implications for the social and economic conditions of people, especially those in poverty. The method used is descriptive quantitative by using secondary data and data analysis methods with linear regression analysis, normality test, multicollinearity test, heterokedastisitas test, autocorrelation test, and hypothesis test. The results of the analysis showed that inflation has a noticeable impact on the level of poverty in the region. This study provides important insights for government policy in designing strategies to reduce poverty levels in the area. In conclusion, the need for targeted and effective action to overcome the negative impact of inflation on poverty levels in North Sumatra. The primary implication of these findings is that in order to effectively eliminate poverty, the government must create and execute more focused measures to control inflation. This study also highlights how crucial it is to coordinate social and monetary policies in order to combat poverty. In order to reduce the detrimental effects of inflation on public welfare, especially in North Sumatra, appropriate and focused action is desperately needed.

Keywords: Economic Growth, Inflation, Poverty Rate

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INTRODUCTION

According to Rudy, Indonesia's inflation has historically tended to be higher than other developing countries, such as Thailand, Malaysia, and so on. ASEAN countries generally experienced inflation between 3% and 5% during the period 2005-2014, while

Indonesia recorded an average annual inflation rate of 8.5% during the same period. One of the reasons for this is Indonesia's dependence on fuel imports. This increase in fuel prices will result in increased transportation costs (such as angkot, buses, taxis, and other modes of transportation) and other costs. Wages increase more slowly than prices during rising inflation in Latin America (Cardoso, E. 1992). Global commodity food and oil price fluctuations, and shipping costs are the main factors explaining the large variability in headline inflation (Tiedemann et al., 2024).

An analysis of the impact of inflation on poverty rates in North Sumatra reveals significant insights. According to Lia, inflation is the process of rising prices of goods in general and that applies continuously. Therefore, avoiding the problem of inflation is essential to maintain economic stability and reduce poverty levels. According to the Central Statistics Agency (BPS) the high rate of inflation can increase the size of the poverty line. Several studies have explored the relationship between inflation and poverty. According to Desrini, inflation has a significant and positive effect on economic growth in Indonesia. If inflation increases, poverty will increase. Conversely, if inflation decreases, the poverty rate will decrease. While some findings suggest that unemployment does not affect the level of poverty. According to Dwi, inflation does not have a partial effect on the poverty rate in East Java, this is evidenced by the significant inflation rate of $0.333 > 0.05$. The poor fear inflation more than rich households (Easterly, W., & Fischer, S, 2001). In addition, inflation is considered an important macroeconomic indicator that can have a significant impact on economic activity. Excessive inflation can disrupt economic stability, reduce the value of currencies, and reduce people's purchasing power potentially trapping more individuals in poverty. In addition, previous studies in North Sumatra have shown fluctuations in inflation rates over the years, with the highest inflation rate of 10.72 in 2008 and the lowest of 1.23 in 2018. The study emphasizes the importance of understanding how inflationary dynamics interact with poverty levels, highlighting the need for effective economic policies to mitigate the adverse effects of inflation on poverty in the region. An increase in average inflation by ten percentage points per year lowers real per capita GDP growth by 0.2–0.3 percentage points (Barron RJ, 2013). Inflation rate has a positive and significant effect on the poverty level in the long run (Akbar, S., Mumtaz, M. M., Atif, M., Munir, S., & Jabeen, F. 2025). Then, inflation has a (small-to-moderate) inequality increasing effect (Kurtzo, M. 2023). Inflation has a significant effect on wealth distribution, tending to increase economic gaps unless countered by effective fiscal and monetary policies (Disha, 2023).

In an economic perspective, inflation is a monetary phenomenon in a country, where the rise and fall of inflation tends to result in economic turmoil (Arjunita, 2016). According to Budiono (2008) inflation is the process of increasing the general prices of goods continuously. While Sukirno (2008) defines inflation as the process of increasing prices in force in an economy. Based on the definition of inflation above, it can be concluded that inflation is the tendency of rising prices of goods in general and occurs continuously. The success of a country in solving its economic problems can be judged from the macro and micro economic conditions of the country. If there is an increase in inflation, it will interfere with the level of welfare by reducing people's purchasing power. One of the macroeconomic indicators that are often used to assess the stability of a country's economy is the level of public welfare, which can also reflect the level of poverty. Higher inflation uncertainty has been unambiguously followed by large economic growth declines, particularly in investment (Ha & Soh, 2024).

Poverty is one of the economic problems that must be addressed or at least minimized. The problem of poverty is a complex one and has many dimensions. Therefore, efforts to reduce poverty must be carried out comprehensively, involving various aspects of people's lives, and implemented in an integrated manner. The term "poverty" refers to a condition when a person or group of people do not have the ability

to achieve the level of economic well-being that is considered the minimum necessary for a decent life. Because the higher the inflation rate, the people who initially can meet their daily needs with the high prices of goods and services they cannot meet their needs, causing poverty. And the inflation rate in Indonesia fluctuates from year to year. In 2012 inflation in Indonesia amounted to 4.30 percent, then in 2013 inflation increased by 8.38 percent due to the increase in the price of subsidized fuel oil (BBM) in Indonesia, with a premium to Rp 6,500/liter and diesel Rp 5,500/liter. Fuel contributed to inflation of 1.17 percent. In 2014 inflation again decreased by 8.36 percent. And in 2015 inflation decreased by 3.35 percent due to falling world oil prices and in 2016 the inflation rate decreased by 3.02 percent (Ningsih, 2018).

Development is carried out by the community to realize the prosperity of the community through economic development to overcome various development and social problems such as unemployment and poverty. The development process requires high national income and rapid economic growth. Economic growth is an indicator to see the success of development and is the main condition for reducing poverty levels (Susanto, 2017).

Therefore, poverty alleviation efforts must be carried out comprehensively and implemented in an integrated manner. In 2012-2016 the percentage of poverty in Indonesia continues to decline. In 2012 the percentage of poverty was 11.96 percent, then in 2013 again decreased by 11.37 percent, then in 2014 again decreased by 11.25 percent, in 2015 also continued to decrease by 11.22 percent and again decreased in 2016 by 10.86 percent.

Table 1. Inflation and Poor People

Year	Inflation	Poor People
2006	6.11	1979702
2007	6.60	1770000
2008	10.72	1630000
2009	2.61	1500000
2010	8.00	1490000
2011	3.67	1436400
2012	3.86	1400400
2013	10.18	1416400
2014	8.17	1360600
2015	3.34	1508140
2016	6.34	1452600
2017	3.20	1326600
2018	1.23	1324980
2019	2.33	1282040
2020	1.96	1283290

Source: Badan Pusat Statistik North Sumatra Province, 2024

In 2006, the number of poor people increased again by 197,902. Then from 2007 to 2012, the number of poor people continued to decrease successively by 209,702 people, 140,000 people, 130,000 people, 10,000 people, 53,600 people, and 36,000 people. However, the number of poor people again increased by 16,000 in 2013. Furthermore, in 2014 there was a decrease of 55,800 people, but an increase of 147,540 people in 2015. After that, the number of poor people decreased again from 2016 to 2019, as many as 55,540 people, 126,000 people, 1,620 people, and 42,940 people, respectively. Finally, there was an increase in 2020 of 1,250 inhabitants. Success in reducing poverty can not be separated from several supporting factors. The head of BPS said that poverty decreased due to relatively low general inflation, a decrease in the average price of basic necessities, a decrease in the Open unemployment rate (TPT), and an increase in the

average wage of agricultural and construction workers (BPS, 2016). The purpose of this study is to analyze the effect of inflation on poverty in North Sumatra. Inflation worsens poverty and inequality low-income families coping strategies like borrowing or skipping meals (Borkotoky, R. 2018).

RESEACRH METHODS

The Data used in this study is secondary data, which has been collected and put together from the period 2006 to 2020 and published by the agency of www.bps.go.id. The method of data analysis involves the use of multiple linear regression methods (multiple regression analysis), as well as data processing using SPSS software. The analysis process is done by testing the variables statistically using software. The purpose of this analysis is to determine the extent to which the independent variable affects the dependent variable.

The regression Model used in this study is:

$$Y = \alpha + \beta_0 X_1 + \beta_1 X_2 + e$$

where :

- Y = Poverty Rate
- α = Konstanta
- X_1 = Inflation
- β_0 = Coefisien Regression
- e = Error term

RESULTS AND DISCUSSION

Result Analysis Data

Multiple linear regression analysis in the study was used to determine the effect of inflation (X_1) to the poverty level (Y).

Classical Assumpstion Test

Before testing the hypothesis, first conducted a test on the presence or absence of the influence of inflation on poverty levels. These tests include: normality test, multicollinearity test, heterocedasticity test and autocorrelation test.

a. Normality Test

One way to see whether the research model is normally distributed or not can be detected through statistical analysis (one sample kolmogrov test).

Table 2. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		6
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.19907000
Most Extreme Differences	Absolute	.178
	Positive	.130
	Negative	-.178
Kolmogorov-Smirnov Z		.435

Asymp. Sig. (2-tailed)		.992
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a. Test distribution is Normal.

b. Calculated from data.

Source: SPSS processing, 2024

The results of this test show that all variables have a relationship to the level of poverty. This can be seen from the value of sig (2-tailed) of $0.992 > \alpha$, where the value of α is 0.05. This means that the data is normally distributed.

b. Multikolinearity Test

This test is conducted to test whether the regression model finds a correlation between independent variables by looking at the tolerance value and variance inflation factor (VIF).

Table 3. Coefficients

Model	Collinearity Statistics	
	Tolerance	VIF
1. Poverty	1.000	1.000

a. Dependent Variable: Tingkat Inflasi

Source: SPSS processing, 2024

From the results table 3 of the regression test above, it is shown that the tolerance value is > 0.01 and the VIF value is < 10 . So it is concluded from the data that the independent variables do not experience multicollinearity.

c. Heterocedasticity Test

Table 4. Coefficients

Model	Standardized	t	Sig.	Unstandardized	
	Coefficients			B	Std. Error
	Beta				
1. (Constant)		2.096	.104	.663	.316
Poverty	-.503	-1.165	.309	-.038	.032

a. Dependent Variable: Inflation Rate

Source: SPSS processing, 2024

Based on the table 4 above can be seen in the column signya value > 0.05 so it can be concluded that from the data does not occur heterokedasticity.

d. Uji Autokorelasi

Table 5. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.503a	.253	.067	.22257	2.698

a. Perdictors: (Constant), Poverty

b. Dependent Variable: Inflation Rate

Source: SPSS processing, 2024

From the table 5, the Durbin-Watson test results showed a value of 2,698. In the DW table for $k = 1$ and $N = 6$, the outer limit (dl) is 0.610, while the 4-dl value is 3.39. Thus, it can be concluded that the possible range ($dU < d < 4-dU$) is $1,400 < 2,698 < 3.3900$. This indicates that there is no autocorrelation in this regression equation model.

Hypothesis Testing

The effect of inflation on the poverty rate in North Sumatra in the 2023 period can be seen from the multiple regression analysis. In this study hypothesis test using simultaneous test and partial test.

1. Simultaneous testing (F test)

Table 6. ANOVA^b

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.067	1	.067	1.358	.309 ^a
Residual	.198	4	.050		
Total	.265	5			

a. Predictors: (Constant), Poverty

b. Dependent Variable: Infaltion Rate

Source: SPSS processing, 2024

From the table, it can be seen that the significant value of F is 0.309, and the calculated value of F is 1.358. The F value of the table, based on the statistical table, is 2.89. Therefore, it can be concluded that F is significant ($0.309 < \textcircled{3} = 0.05$), and F count (1.358) is greater than F table (2.89). Thus, it can be concluded that simultaneously, the inflation rate is significantly influenced by the level of poverty.

1. Partial testing (t-test)

Table 7. Coefficients^a

Model	Standardized Coefficients	t	Sig.	Unstandardized Coefficients	
	Beta			B	Std. Error
1 (constant)		2.096	.104	.663	.316
Poverty	-.503	-1.165	.309	-.038	.032

Source: SPSS processing, 2024

Table 7 shows, the Constant Value (a) is 0.663, which indicates that if there is no influence from inflation variables that are considered constant, the poverty rate in North Sumatra during the 2023 period will remain at 0.663. Significant value for variable poverty rate of 0.309 that the poverty rate is greater than 0.05 then it can be concluded that inflation does not significantly affect the poverty rate. But on the significant value we can see that in testing the data above sebsesar -0.503, it can be concluded that the variable poverty rate partially affect inflation. Inflation has a significant and positive effect on poverty for the long term (Yolanda, Y. 2017).

In the short and long term, the impact of variable inflation on the poverty rate in North Sumatra is not significant and positive. Variable inflation has a significant value of 0.309 greater than 0.05, it can be concluded that the variable inflation has no significant effect on economic growth. However, the results of t-count showed the value of -1.165 and T-table of 2.89. This means that the t-count is smaller than the T-table which shows that the inflationary variable has a significant effect on the poverty rate. This study

indicates the need for further research using alternative analysis models to explore the effect of inflation rate on poverty in this region. The economic stability of North Sumatra is reflected in the level of inflation that occurs in economic activity in the province. The lower the inflation rate (below 10 percent), the more stable the economy. Conversely, the higher the inflation rate (above 10 percent), the more unstable the stability of the economy. In other words, high inflation rates will greatly affect the various economic activities of various sectors, suppressing economic growth, increasing unemployment, and ultimately, decreasing the level of well-being of the population, especially for those in low and fixed income groups. The threshold is lower for industrial than for developing countries (Khan et al, 2001). Interest rates, exchange rates, and inflation must be used to create an investment climate that is conducive to economic development factors (Ogege et al, 2019).

Inflation volatility may adversely affect economic activity, particularly through its impact on investment and consumption decisions" (Friedman, 1977). Then, Moderate inflation may have a positive effect on growth by reducing the liquidity risk of investment projects" (Zhou, 2019).

CONCLUSION

Based on research that has been done, it can be concluded that inflation has no significant and negative effect in the long term and short term on the poverty rate in North Sumatra. That is, in the period 2006 - 2020 the increase in inflation that occurs will reduce poverty in North Sumatra. On the other hand, changes in inflation also affect poverty.

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