

DOI:

**Quantitative Economics Journal**

<https://jurnal.unimed.ac.id/2012/index.php/qe/index>

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## **The Impact of Inflation and Unemployment on the Number of Poor People in North Sumatra Province**

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### **Abstract**

*This study aims to analyze the impact of inflation and unemployment on poverty levels in North Sumatra Province. Using time-series data from 2007 to 2020 obtained from the Central Statistics Agency (BPS), the study employs multiple regression analysis with the Ordinary Least Squares (OLS) method. The results reveal that inflation has a positive and significant effect on poverty, while unemployment has a positive but insignificant effect. Simultaneously, both variables significantly influence poverty levels in the region. These findings highlight the importance of inflation control as part of poverty alleviation strategies and underscore the need to understand the complex relationship between unemployment and poverty for more effective policy formulation.*

**Keyword :** *Inflation, Unemployment, poverty*

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ISSN2549-1660 (Print)

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ISSN 2550-1305 (Online)

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### **INTRODUCTION**

Poverty is a phenomenon, a reality that has not and will never be eradicated from the face of this earth. Poverty has become a serious problem in every country, even in developed and prosperous nations, there are still groups of impoverished people. Although poverty will never be completely eliminated, it cannot be ignored because it is suspected of causing many other problems such as social crime and other multiplier effects.

According to Maipita (2014), "poverty is a condition where basic needs or basic needs are not met, so that a decent standard of living is not achieved." <sup>1</sup> A community can be said to be poor if its income/expenditure is below the poverty line. According to the Melbourne Institute (2012), the poverty line can be interpreted as a set level of income or expenditure, where if a person's income is below that level, then they are classified as poor.

Of course, this problem of poverty occurs in every country in the world, including Indonesia



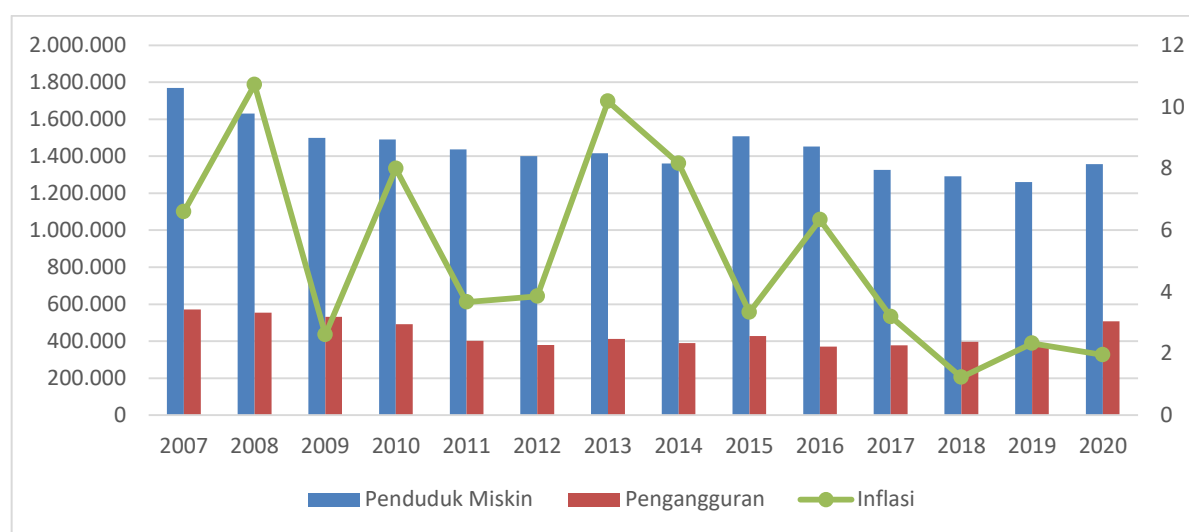
**Chart 1: Changes in Indonesia's Poverty Rate, First Semester of 2011-2021**

Amidst the government's efforts to reduce poverty rates, the COVID-19 pandemic has actually exacerbated global poverty, particularly in Indonesia. Since the impact of the COVID-19 pandemic began in 2020, the negative trend of decreasing the number of poor people in Indonesia has halted and is predicted to continue to rise. According to the research institution Institute for Demographic and Poverty Studies (IDEAS), in a pessimistic scenario, the poverty rate in 2022 has the potential to soar to 10.81%, equivalent to 29.3 million poor people. This is triggered by the weakening of social protection budgets, which has resulted in more poor people being economically unprotected.

Of course, there are many factors that influence the poverty rate in a country, one of which is unemployment. According to Todaro (2000), most of the unemployed are among the poorest groups of people, who do not have regular jobs or who work seasonally. However, not everyone who is unemployed is necessarily poor. There are always voluntary unemployed people in developing countries, those who could easily find good jobs but choose to be unemployed because the type of work does not match their education, qualifications, personal aspirations, financial targets, or status standards. In addition to unemployment, inflation is also suspected to be a trigger for increasing poverty rates. According to Mankiw

(2003), rising inflation will inevitably raise the poverty line. When the rate of inflation rolls and the value of real money fluctuates greatly, then rising inflation will in turn be followed by an increase in the poverty line as a result of the increase in the rate of inflation will encourage an increase in the number of poor people, if not accompanied by an increase in purchasing power or an increase in people's income, especially low-income groups.

Not only occurring at the national level, various problems related to poverty certainly also occur at the provincial level, especially in North Sumatra Province. The following is a graph of data on the development of poverty, unemployment, and inflation in North Sumatra Province from 2007 to 2021:



**Figure 2. Trends in the Number of Poor, Unemployed, and Inflation in North Sumatra Province from 2007 to 2021**

As depicted in the graph, the data on poverty, unemployment, and inflation rates in North Sumatra Province exhibit fluctuations. These fluctuations in poverty levels are not isolated phenomena. Numerous factors are believed to contribute to these changes. Among these factors, unemployment is often cited as a significant contributor to rising poverty rates. Arsyad (2016) defines unemployment as a condition where individuals categorized as part of the labor force are actively seeking employment but remain unsuccessful in securing suitable jobs. The disparity between the rapid growth of the labor force and the relatively sluggish growth of job opportunities is a primary cause of unemployment. Sukirno (2006) corroborates this assertion by suggesting that when the growth rate of job vacancies lags behind the growth rate of the labor force, a substantial portion of the workforce will be unemployed.

Consequently, this leads to an increase in the number of people living in poverty. In essence, there is a direct correlation between unemployment rates and poverty levels.

Previous studies have extensively examined the relationship between unemployment and poverty. Theoretically, unemployment has a positive impact on increasing the number of poor people. This is in line with the findings of previous researchers, Primandari (2018), and Mardiatillah et al. (2019). However, these research results contradict those of other researchers, Endrayani and Dewi (2016) and Susanto et al. (2017), who concluded that unemployment has a negative and insignificant impact on poverty. Certainly, the disparity in research findings among these researchers presents an interesting subject for further investigation into the relationship between unemployment and poverty, especially in North Sumatra Province.

In addition to unemployment, inflation is frequently cited as a factor contributing to the rise in poverty. Sukirno (2006) defines inflation as a sustained increase in the general price level. A mere increase in the prices of a few commodities does not constitute inflation unless it results in a broad-based increase in the prices of other goods.

The relationship between inflation and poverty has been the subject of numerous studies. Theoretically, inflation is posited to have a positive correlation with poverty rates. This proposition is supported by the findings of previous research conducted by Endrayani and Dewi (2016), and Ningsih and Andiny (2018). Nevertheless, these findings diverge from those of other studies conducted by Amalia (2012) and Susanto et al. (2017), which suggest a negative relationship between inflation and poverty. The discrepancy in these research findings underscores the need for further investigation into the complex relationship between inflation and poverty, particularly in the context of North Sumatra Province.

A plethora of expert opinions and empirical studies have posited a link between unemployment, inflation, and rising poverty rates. Nevertheless, the results of previous research exhibit significant disparities, even contradicting established theoretical frameworks. Given the prevalence of unemployment, inflation, and poverty in society, the issue of poverty and its determinants has emerged as a compelling area for further investigation, particularly in the context of North Sumatra Province

## **RESEARCH METHODS**

The primary objective of this study is to investigate poverty in North Sumatra Province. The research encompasses an analysis of key variables such as poverty,

unemployment, and inflation within the province. Secondary data obtained from the Central Bureau of Statistics (BPS) of North Sumatra Province serves as the primary source of data for this study. The data employed is a time series spanning 14 years, from 2007 to 2020.

Consequently, the analytical techniques employed in this study are:

$$PMIS = f (INF, PGG) \dots\dots\dots(1)$$

Equation 1 is subsequently specified within a model framework and transformed into its logarithmic equivalent as follows:

$$L(PMIS) = \beta_0 - \beta_1 (INF) + \beta_2 L(PGG) + e \dots\dots\dots(2)$$

Explanation:

- PMIS = Poor Population (People)
- INF = Inflation (Percent)
- PGG = Unemployment (People)
- L = Logarithm
- $\beta_0$  = Constant
- $\beta_1$  --  $\beta_2$  = Regression coefficient
- e = Error term

The data analysis technique used in this research is multiple linear regression analysis with the Ordinary Least Squares (OLS) method. The assumption tests used include normality test, autocorrelation test, multicollinearity test, and heteroscedasticity test (Ghozali, 2011). This research examines partial effects, simultaneous effects, and the coefficient of determination. All data processing in this research uses the Eviews 10 analysis tool.

**Classical Assumption Test**

**a. Normality Test**

A normality test is conducted to determine whether a regression model, dependent variable, independent variable, or both have a normal distribution (Ghozali, 2006). A good regression model is one whose data is normally distributed or nearly so. This study uses the Jarque-Bera test for normality. The decision criteria are as follows:

- Accept  $H_0$  if the probability of Jarque Bera > 0.05. This means there is no normality problem in the research model.
- Reject  $H_0$  if the probability of Jarque Bera < 0.05. This means there is a normality problem in the research model.

**b. Multicollinearity Test**

A multicollinearity test is used to determine whether there is a correlation or a strong relationship between the independent variables in a multiple linear regression model. If there is a high correlation among the independent variables, then the relationship between the independent variables and the dependent variable is disrupted.<sup>1</sup> Multicollinearity can be detected using the Centered VIF (Variance Inflation Factor) value (Sarwono and N.S, 2014). The decision criteria are as follows:

- Accept  $H_0$  if the VIF value  $< 10$ . This means there is no multicollinearity problem in the research model.
- Reject  $H_0$  if the VIF value  $> 10$ . This means there is a multicollinearity problem in the research model.

### **c. Autocorrelation Test**

An autocorrelation test is conducted to determine whether there is a correlation between the error terms in a linear regression model. If there is a correlation, then there is an autocorrelation problem. A good regression model is one that is free from autocorrelation (Ghozali, 2006). The autocorrelation test in Eviews uses the Breusch-Godfrey LM Test. Similar to the heteroscedasticity test, the decision for the autocorrelation test is also focused on the prob obs r-square. The decision criteria are as follows:

- Accept  $H_0$ , if prob. obs r-square  $> 0.05$ . This means there is no autocorrelation problem in the research model.
- Reject  $H_0$  if the probability of chi-square  $< 0.05$ . This means there is an autocorrelation problem in the research model.

### **d. Heteroscedasticity Test**

Heteroscedasticity occurs when the residuals of a regression model have a variance that is not constant from one observation to another (Hasan, 2002). This means that each observation has a different reliability due to changes in the underlying conditions that are not captured in the model specification. However, one of the important assumptions in the OLS or simple regression model is that the variance is homoscedastic. The method used to detect heteroscedasticity in this study is the Breusch Pagan Godfrey test. The decision criteria are as follows:

- Accept  $H_0$ , if prob. obs r square  $> 0.05$ . This means there is no heteroscedasticity problem in the research model.

- Reject  $H_0$ , if prob. chi square  $< 0.05$ . This means there is a heteroskedasticity problem in the research model.

## Hypothesis Testing

### a. T-Statistic Test (Partial)

The t-test is used to test the influence of each independent variable used in this study on the dependent variable partially. The partial test basically shows how far the influence of one explanatory or independent variable individually explains the variation of the dependent variable<sup>1</sup> (Ghozali, 2018). The decision criteria are as follows:

- Accept  $H_0$ , if  $t\text{-calculated} < t\text{-table}$  and/or prob.  $> 0.05$  in a one-tailed test. This means that there is no influence of the independent variable on the dependent variable.
- Reject  $H_0$ , if  $t\text{-calculated} > t\text{-table}$  and/or prob.  $< 0.05$  in a one-tailed test. This means that there is an influence of the independent variable on the dependent variable.

### b. F-Test (Simultaneous)

According to Ghozali (2018), the F-test is used to determine whether the independent variables together have a significant influence on the dependent variable. The decision criteria are as follows:

- Accept  $H_0$ , if  $F\text{ calculated} < F\text{ table}$  and/or prob.  $> 0.05$ . This means that there is no simultaneous influence of the independent variables on the dependent variable.
- Reject  $H_0$ , if  $F\text{ calculated} > F\text{ table}$  and/or prob.  $< 0.05$ . This means that there is a simultaneous influence of the independent variables on the dependent variable.

### c. Coefficient of Determination

The coefficient of determination ( $R^2$ ) is used to measure how well the model can explain the variation in the dependent variable. The value of the coefficient of determination is between 0 and 1. A small value of  $R^2$  means that the ability of the independent variables to explain the variation in the dependent variable is very limited (Ghozali, 2018).

## RESULTS AND DISCUSSION

### Result

#### 1. Classical Assumption Tests

**a) Normality Test.** The criterion for the Prob. Jacque Bera (JB) value is  $> 0.05$ , meaning that the null hypothesis is rejected, indicating that there is no violation of the normality

assumption or that the residuals are normally distributed. Based on Table 1, the Prob. Jarque Bera value is  $0.300 > 0.05$ , so it can be concluded that there is no violation of the normality test in this research model.

**b) Autocorrelation Test.** The Breusch-Godfrey Serial Correlation LM Test result shows that if the prob. Obs\*R-squared value is  $> 0.05$ , then there is no autocorrelation in this study. Based on Table 2, the Prob. value is  $0.0774 > 0.05$ , so it can be concluded that there is no violation of the autocorrelation test in this research model.

**c) Heteroscedasticity Test.** The Breusch-Pagan-Godfrey: Heteroskedasticity Test result shows that if the Prob. Obs\*R-squared value is  $> 0.05$ , then there is no heteroscedasticity in this research model. Based on Table 2, the Prob. value is  $0.4431 > 0.05$ , so it can be concluded that there is no violation of the heteroscedasticity test in this research model.

**d) Multicollinearity Test.** The Variance Inflation Factors test result shows that if the Centered VIF value is  $< 10$ , then there is no violation of the multicollinearity test in this research model. Based on Table 1, the Centered VIF value is  $1.0512 < 10$ , so it can be concluded that there is no violation of the multicollinearity test in this research model.

The results of the classical assumption tests and hypothesis tests for the OLS regression model in this study are summarized in Table 1 below:

**Tabel 1.** Hasil Uji Asumsi dan Uji Regresi Model OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.73746	1.688381	6.951901	0.0000
INFLASI	0.012724	0.005851	2.174894	0.0440
LOG(PGG)	0.186776	0.130232	1.434177	0.1697
R-squared	0.335515	Durbin-Watson stat		0.94667
F-statistic	4.291860	Prob (F-statistic)		0.03098
Normalitas	Prob (Jarque-Bera)			0.3000
Auto Korelasi	Prob (Breusch-Godfrey SC LM Test)			0.0774
Heteroskedasitas	Prob (Breusch- Pagan- Godfrey Test)			0.4431
Multikolinierity	Centered Variance Inflation Factors			1.0512



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## 2. Hypothesis Test

### a) Simultaneous Test

Simultaneously, unemployment and inflation have a significant influence on poverty in North Sumatra Province with a probability of  $0.03098 < 0.05$ , thus  $H_a$  is accepted.

### b) Partial Test

1. There is a positive and significant influence of inflation on poverty in North Sumatra Province with a probability of  $0.0440 < 0.05$ , thus  $H_a$  is accepted.
2. There is a positive but insignificant influence of unemployment on poverty in North Sumatra Province with a probability of  $0.1697 > 0.05$ , thus  $H_0$  is accepted.

### c) Coefficient of Determination

Based on Table 1 above, the R-Squared value is 0.3351, meaning that 33.51% of the variation in the number of poor people can be explained by unemployment and inflation variables. The remaining 66.49% is influenced by variables that were not examined in this study.

### d) Discussion of the Analysis Model

The regression equation produced from this research model is as follows:

$$L(\text{PMIS}) = 11,73746 + 0,01272 (\text{INF}) + 0,186776 \text{ LOG}(\text{PGG}) + e$$

Based on the coefficients above, it can be explained that:

- a. The constant of 11.73746 indicates that if the independent variables such as unemployment and inflation are constant, then the number of poor people in North Sumatra Province is 11.73746 percent.
- b. Every 1% increase in inflation will increase the number of poor people in North Sumatra Province by 0.01272 percent, assuming all other factors remain constant (*ceteris paribus*).
- c. Every 1% increase in unemployment will increase the number of poor people in North Sumatra Province by 0.18677 percent, assuming all other factors remain constant (*ceteris paribus*).

## DISCUSSION

### 1. The Impact of Inflation on Poverty in North Sumatra Province

The results of the partial hypothesis test in this study explain that inflation has a positive and significant impact on poverty in North Sumatra Province, meaning that the hypothesis of the impact of inflation on poverty in North Sumatra Province is proven to be correct. This research result is in line with previous research by Endrayani and Dewi (2016), Ningsih and Andiny (2018), Primandari (2018), and Mardiatillah et al. (2019). Many empirical studies have shown that one of the main factors of poverty is inflation. Continuous price increases will cause a decrease in people's real income, thus reducing people's purchasing power. When purchasing power is low, people's consumption levels are also low. Low purchasing power and consumption levels will have a significant impact on the decline in the standard of living. Of course, if the price of basic necessities increases, then the poverty line will increase, so the number of poor people will also increase. This is reinforced by Mankiw's opinion (2003) that an increase in inflation will certainly increase the poverty line. When inflation rates roll and the value of real money fluctuates greatly, the increasing inflation will in turn be followed by an increase in the poverty line as a result of the increasing inflation rate, which will lead to an increase in the number of poor people. Various expert opinions and the empirical results of this study further convince and strengthen the argument that the higher the inflation rate, the higher the level of poverty in a region.

## **2. Unemployment and Poverty in North Sumatra Province**

The results of the partial hypothesis test in this study show that unemployment has a positive but insignificant impact on poverty in North Sumatra Province, meaning that the hypothesis of the influence of unemployment on poverty in North Sumatra Province is not supported.

This research result is in line with previous studies by Hilmi et al. (2022) and Saputra (2011) which stated that unemployment does not affect poverty. This is because there are groups of people who are intentionally unemployed because they prefer jobs that are relevant to their competencies. This is reinforced by Todaro's opinion (2000) which states that not everyone who is unemployed is necessarily poor, as there are always voluntary unemployed people who can easily find jobs but choose to be unemployed because the type of work does not match their education, qualifications, personal aspirations, financial targets, or status standards.

People who are classified as openly unemployed include various types of unemployed people, such as those who are looking for work, those who are preparing for a business,

those who are not looking for work because they feel it is impossible to find a job, and finally those who already have a job but have not started working. Among these four categories of open unemployment, some of them are in the informal sector, and some have jobs with less than 35 hours of work per week. In addition, there are those who are trying or preparing their own business, are waiting to start working, or have part-time jobs but with income exceeding that of normal workers, and all of which fall into the category of open unemployment.

## **CONCLUSION**

The conclusions of this research are as follows:

1. Inflation has a positive and significant impact on poverty in North Sumatra Province.
2. Unemployment has a positive but insignificant impact on poverty in North Sumatra Province.
3. Simultaneously, unemployment and inflation have a significant impact on poverty in North Sumatra Province.

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