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Impact of Inflation and Unemployment on North Sumatra's Economic Growth: A 20-Year Analysis

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Abstract

Penelitian ini bertujuan untuk menganalisis dampak inflasi dan pengangguran terhadap pertumbuhan ekonomi di Sumatera Utara selama 20 tahun terakhir. Dengan menggunakan data tahun 2004 hingga 2023, penelitian ini menerapkan pendekatan kuantitatif untuk mengkaji hubungan antara inflasi, pengangguran, dan pertumbuhan ekonomi melalui analisis regresi. Hasil penelitian menunjukkan bahwa inflasi memiliki dampak negatif terhadap pertumbuhan ekonomi dengan koefisien regresi -0,011, yang berarti setiap kenaikan satu unit inflasi mengurangi pertumbuhan ekonomi sebesar 1,1%. Dampak ini dikaitkan dengan kebijakan Bank Indonesia dalam menjaga stabilitas rupiah melalui penerapan Kerangka Kerja Target Inflasi (ITF) dan ITF fleksibel. Selain itu, penelitian menemukan bahwa pengangguran juga berdampak negatif terhadap pertumbuhan ekonomi dengan koefisien regresi -0,001, yang menunjukkan bahwa setiap kenaikan satu unit pengangguran menurunkan pertumbuhan ekonomi sebesar 0,1%. Tingginya tingkat pengangguran menghambat kontribusi tenaga kerja produktif dalam aktivitas produksi, yang pada akhirnya memperlambat pertumbuhan ekonomi di Sumatera Utara. Penelitian ini menyarankan agar pemerintah dan Bank Indonesia terus berupaya menjaga stabilitas inflasi serta menerapkan kebijakan yang efektif untuk mengurangi pengangguran. Langkah-langkah yang diusulkan mencakup peningkatan kualitas pendidikan dan pelatihan keterampilan, penciptaan peluang kerja baru, dan perbaikan iklim investasi. Dengan demikian, diharapkan pertumbuhan ekonomi di Sumatera Utara menjadi lebih stabil dan berkelanjutan.

This study aims to analyze the impact of inflation and unemployment on economic growth in North Sumatra over the past 20 years. Using data from 2004 to 2023, this research employs a quantitative approach to examine the relationships between inflation, unemployment, and economic growth through regression analysis. The results indicate that inflation has a negative impact on economic growth, with a regression coefficient of -0.011, suggesting that each unit increase in inflation reduces economic growth by 1.1%. This effect is attributed to Bank Indonesia's policy of maintaining rupiah stability through the implementation of the Inflation Targeting Framework (ITF) and the flexible ITF. Additionally, the study finds that unemployment negatively impacts economic growth, with a regression coefficient of -0.001, meaning that each unit increase in unemployment decreases economic growth by 0.1%. High unemployment rates hinder the contribution of productive labor to production activities, ultimately slowing economic growth in North Sumatra. The study suggests that the government and Bank Indonesia should continue efforts to maintain inflation stability and implement effective policies to reduce unemployment. Proposed measures include enhancing the quality of education and skills training, creating new job opportunities, and improving the investment climate. Consequently, it is expected that economic growth in North Sumatra will be more stable and sustainable.

Keywords *Inflation, Unemployment, Economic Growth, North Sumatra, Monetary Policy*

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INTRODUCTION

Economic growth is one of the main indicators used to assess the welfare and progress of a region. In North Sumatra, economic growth reflects the region's ability to increase the production of goods and services from year to year. However, economic growth does not occur in a vacuum; many factors influence and are influenced by the dynamics of the regional economy. Among these factors, inflation and unemployment play a role in economic growth. Inflation, measured as the general increase in the prices of goods and services over a certain period, can have both direct and indirect impacts on economic growth. High inflation tends to reduce people's purchasing power, decrease consumption levels, and ultimately can hinder economic growth. Conversely, stable, and controlled inflation can encourage greater investment and consumption, which in turn accelerates economic growth.

On the other hand, unemployment is a complex economic issue. A high unemployment rate reflects the suboptimal use of human resources, which can hinder productivity and innovation. Unemployment can also lead to a decrease in household income, which negatively impacts consumption levels and, ultimately, slows down economic growth. Reducing the unemployment rate through effective policies can result in a more productive workforce and a more dynamic economy. In the context of North Sumatra, a deep understanding of the impact of inflation and unemployment on economic growth over the past 20 years is very important. Historical data and trend analysis can provide valuable insights into how these two variables interact with regional economic growth. This study aims to analyze the extent to which inflation and unemployment affect economic growth in North Sumatra, as well as to identify the patterns and underlying factors of these changes.

RESEARCH METHODS

The data used in this research was obtained from the Inflation, Unemployment Rate, and Regional Gross Domestic Product (PDRB) publications of North Sumatra, published by the Central Statistics Agency (BPS) and Bank Indonesia (BI). This secondary data includes annual

data on the inflation rate, unemployment rate, and economic growth (real PDRB) of North Sumatra from 2004 to 2023. The research method applied in the analysis of the impact of inflation and unemployment on economic growth in North Sumatra uses a quantitative approach. This approach allows for the measurement of the relationship between variables using numerical data and statistical techniques. This study uses multiple linear regression analysis techniques to identify the relationship between the inflation rate and the unemployment rate as independent variables, and economic growth as the dependent variable. This approach will provide a comprehensive understanding of the simultaneous effects of inflation and unemployment on economic growth in North Sumatra over the past two decades.

RESULTS AND DISCUSSION

1. Inflation

Inflation is the tendency for prices to rise generally and continuously over a certain period. The increases do not have to occur simultaneously or at the same percentage, but the increases that happen show a continuous trend. Inflation itself can be classified according to its nature into three types: creeping inflation, which is a relatively slow price increase over a relatively long period with a percentage below 10 percent; moderate inflation, with significant increases and sometimes having an accelerating nature over a relatively short period; and high inflation, with very rapid price increases usually above 30 percent. Based on this classification, the inflation condition in North Sumatra Province over the past 20 years on average falls into the category of creeping inflation, with a price increase percentage below 20 percent per year. The data below shows the level of inflation in North Sumatra Province based on data sourced from BPS North Sumatra.



Figure 1 Inflation in North Sumatera
Image Source: BPS North Sumatera, data processed 2024

Inflation data in North Sumatra from 2004 to 2023 shows significant year-to-year variation. The highest inflation occurred in 2005 with a figure reaching 22.41%, while the lowest inflation was recorded in 2018 with a value of 1.23%. During this period, inflation experienced significant fluctuations. At the beginning of the period, particularly in 2004 and 2005, inflation was very high. However, after 2005, inflation tended to be lower and more stable with several peaks occurring in 2008, 2013, and 2022. In the second decade (2014-2023), inflation showed a more stable pattern compared to the first decade. (2004-2013).

This stability may be the result of monetary policy efforts undertaken by Bank Indonesia to maintain price stability. Policies such as the Inflation Targeting Framework (ITF), implemented since 2005, likely contributed to inflation stability in recent years. Overall, this data reflects that although there were periods of high inflation, especially in the early years, there has been a tendency towards inflation stability in the last decade. This indicates an improvement in the management of inflation that has been carried out.

2.Unemployment

Unemployment is a phenomenon where individuals who are part of the labor force do not have jobs and are actively seeking employment. Unemployment can be classified into several types, namely classical unemployment, structural unemployment, frictional unemployment, and cyclical unemployment. Classical unemployment occurs due to excessively high wages, leading to a decrease in labor demand. Structural unemployment is caused by a mismatch between the skills of the workforce and the needs of the industry due to technological changes or economic shifts. Frictional unemployment arises from the normal process of job turnover when individuals seek new employment or transition from one job to another. Meanwhile, cyclical unemployment is influenced by fluctuations in the business cycle, where the unemployment rate increases during recessions and decreases when the economy is growing. The high unemployment rate reflects the suboptimal use of human resources, which hinders productivity and innovation, as well as reduces household income and consumption. Therefore, understanding the types and causes of unemployment in North Sumatra is very important for formulating effective policies to reduce unemployment and promote sustainable economic growth. The data below shows the unemployment rate in North Sumatra Province based on data sourced from BPS North Sumatra.



Figure 2 Unemployment in North Sumatera
 Image Source: BPS North Sumatera, data processed 2024

The open unemployment data in North Sumatra from 2004 to 2023 shows significant year-to-year variation. In 2004, the unemployment rate reached 13.75%, which was the highest figure during that period. Since 2005, the unemployment rate has shown a downward trend, reaching its lowest point of 5.41% in 2019. After 2019, the unemployment rate began to rise again, especially in 2020 with a figure of 6.91%, which was likely influenced by the impact of the COVID-19 pandemic. However, the unemployment rate started to gradually decrease in the following years, with the unemployment rate in 2023 recorded at 5.89%. The consistent downward trend until 2019 indicated an improvement in the labor market, despite a temporary increase due to the pandemic. Policy efforts and economic recovery measures likely contributed to the stabilization of the unemployment rate after the spike in 2020.

3. Economic Growth

Meanwhile, GDP itself is defined as the total value added of goods and services produced from all economic activities across the entire region within a specific year, generally within one year. In its calculation, the calculation of GDP can use two prices, namely current price GDP and constant price GDP, where current price GDP is the value of goods and services calculated using the prices applicable in that year, and constant price GDP is the value of goods and services calculated using the prices of a specific year that is used as the reference year or base year. Meanwhile, to calculate the total GDP in one period, four approaches are used, namely: the production approach, the income approach, the expenditure approach, and the allocation approach.

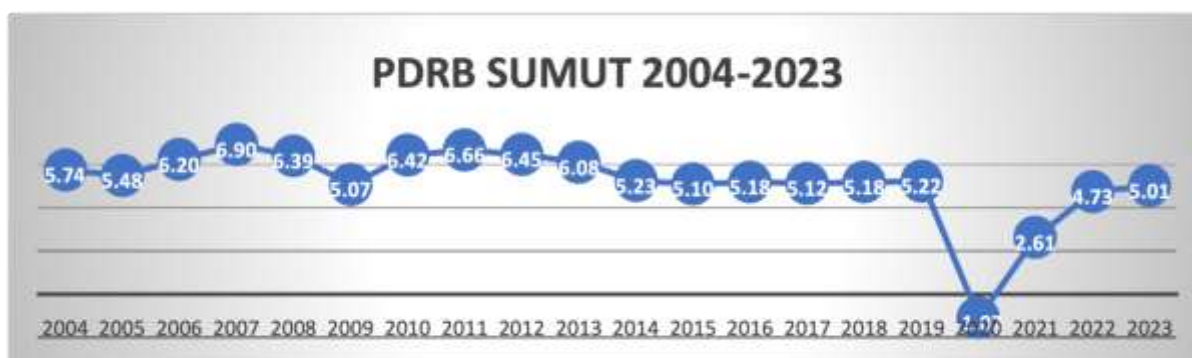


Figure 3 Economic Growth in North Sumatera
Image Source: BPS North Sumatera, data processed 2024.

Economic growth data projected in the Gross Regional Domestic Product (GRDP) in North Sumatra from 2004 to 2023 shows significant fluctuations with several interesting trends. At the beginning of the period, from 2004 to 2007, the economic growth of North Sumatra was relatively stable with quite high figures, ranging from 5.48% to 6.90%. The peak of growth occurred in 2007 with a figure of 6.90%, marking a very good year for the region's economy.

However, after 2007, although still showing positive growth, there was a decline in 2009 with a figure of 5.07%, which may have been caused by the impact of the global economic crisis in 2008. After that, growth increased again and stabilized around 6% until 2012, reflecting a strong and sustainable economic recovery. The period from 2013 to 2019 showed a more stable trend with growth ranging from 5.10% to 5.22%, reflecting more moderate but stable growth, indicating that North Sumatra's economy was beginning to enter a phase of slower but more stable growth. The year 2020 became a turning point with economic growth experiencing a significant contraction of -1.07%, which was almost certainly influenced by the COVID-19 pandemic that disrupted global and regional economic activities. However, the economy began to show signs of recovery in 2021 with a growth of 2.61%, and further improved in 2022 and 2023 with growth rates of 4.73% and 5.01%, respectively. Overall, the economic growth of North Sumatra during the period 2004-2023 experienced various dynamics, ranging from strong and stable growth, the impact of the global economic crisis, the recovery phase, to the significant impact of the COVID-19 pandemic and the subsequent recovery. This data reflects the economic resilience of this region and its ability to bounce back from significant economic challenges.

ANALYSIS OF THE INFLUENCE OF INFLATION ON ECONOMIC GROWTH IN NORTH SUMATRA

Table 1
Coefficients^a

	Model	Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.252	.451		11.637	.000
	INFLASI	-.001	.004	-.050	-.194	.849
	PENGANGGURAN TERBUKA	-.011	.020	-.138	-.533	.602

Source of data: processed SPSS version 26 output, 2024

a. Dependent Variable: PERTUMBUHAN EKONOMI Source: SPSS V25, data processed 2024

Based on data analysis using SPSS 25, the regression equation results obtained from the table above are as follows:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + e$$

or

$$Y = 5,252 - 0,001X_1 - 0,011 X_2 + e$$

The regression equation above shows the relationship between the independent and dependent variables, from the equation it can be concluded that:

a. The constant value of 5.252 indicates that there is an influence of Inflation (X1) and Unemployment (X2) on Economic Growth (Y) in North Sumatra. The constant is positive, which means that if inflation and unemployment are at level 0, the value of economic growth will increase by 5.252.

b. The value of the inflation regression coefficient is -0.001. The coefficient indicates that there is a negative relationship between inflation and economic growth. This means that if inflation increases by one unit, economic growth decreases by 0.001 units or 0.1 percent. The relationship between inflation and economic growth can also be seen from the significance value, where inflation has a significance value of 0.849 > 0.05, meaning inflation has not significantly affected economic growth over the past 20 years.

c. The value of the unemployment regression coefficient is -0.011. The coefficient indicates that there is a negative relationship between unemployment and economic growth. This means that if unemployment increases by one unit, economic growth decreases by 0.011 units or by 1.1 percent. The relationship between unemployment and economic growth can also be seen from the significance value, where inflation has a significance value of 0.602 > 0.05, meaning that unemployment has not significantly affected economic growth over the past 20 years.

INFLATION TO ECONOMIC GROWTH

Based on the above description, it is known that the inflation coefficient value is -0.011. This means that if the inflation variable increases by 1 unit, it will reduce economic growth by 1.1%. The reason for the insensitivity of inflation to economic growth is that the goal of Bank Indonesia in implementing its monetary policy is to achieve and maintain the stability of the rupiah. Therefore, in an effort to achieve this goal, Bank Indonesia has implemented the Inflation Targeting Framework (ITF) monetary policy framework since July 1, 2005. However, since the experience of the global financial crisis in 2008/2009, Bank Indonesia has strengthened the ITF into a flexible ITF while still relying on the important elements of the established ITF. Both ITF and flexible ITF still have the same achievement, which is inflation control. Therefore, inflation is not very sensitive to economic growth because it is always tightly controlled or managed by Bank Indonesia. This is because when inflation is tightly controlled and always managed, the interest rates in North Sumatra Province will remain relatively stable, so both domestic and foreign investors will continue to invest. Thus, the existing job opportunities are not significantly affected, and the production of goods and services remains within the same scale. As a result, economic growth in North Sumatra Province remains relatively stable and unchanged.

This research aligns with Daniel, P. A. (2018), who stated that the inflation rate negatively affects economic growth, although not significantly. The results of the analysis indicate that the actual conditions align with the existing theory. Although the relationship that occurs is categorized as very weak, the role of inflation in influencing economic growth is also quite significant. Because high inflation will hinder economic development and economic activities in society, thereby slowing down economic activities and ultimately reducing econom-

UNEMPLOYMENT TO ECONOMIC GROWTH

The value of the unemployment regression coefficient is -0.001. The coefficient indicates that there is a negative relationship between unemployment and economic growth. This means that if unemployment increases by one unit, economic growth decreases by 0.001 units or decreases by 0.1 percent. Based on the results of this study, it shows that the higher the unemployment rate, the more it causes a decrease in the economic growth rate of a country. This is because the high number of unemployed individuals means that the workforce in the productive age group is not working or has not yet found employment, so they do not contribute to production activities, thereby slowing down the economic growth of a country.

This research is in line with Fajri et al., (2022), which states that unemployment has a negative impact on the economic growth of Bali Province. Unemployment, like inflation, has a negative relationship with economic growth. The higher the unemployment rate, the lower the economic growth rate. Conversely, if the unemployment rate decreases, the economic growth rate increases.

CONCLUSION

Based on the research results regarding the influence of inflation and unemployment on economic growth in North Sumatra Province, it can be concluded that:

1. The Influence of Inflation on Economic Growth. The inflation coefficient value of -0.011 indicates that inflation has a negative relationship with economic growth. Each increase in inflation by 1 unit will reduce economic growth by 1.1%. The insensitivity of inflation to economic growth is caused by Bank Indonesia's strict policy in maintaining the stability of the rupiah through the implementation of the Inflation Targeting Framework (ITF) since July 1, 2005, which was later strengthened into a flexible ITF after the global financial crisis of 2008/2009. This policy successfully maintained interest rate stability, attracted investments, and preserved job opportunities as well as the production of goods and services, thereby keeping economic growth in North Sumatra Province stable.

2. The Impact of Unemployment on Economic Growth. The regression coefficient value for unemployment of -0.001 indicates that unemployment has a negative relationship with eco-

conomic growth. Every one-unit increase in unemployment will decrease economic growth by 0.1 percent. The high unemployment rate leads to a decline in the economic growth rate because the workforce in the productive age group who are not working or have not yet found employment do not contribute to production activities, thereby slowing down economic growth in North Sumatra Province.

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