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Factors Affecting Inflation 4 Cities in North Sumatra Province

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Abstract

This study aims to determine the effect of government expenditure variables, Gross Regional Domestic Product, and District/City Minimum Wage on inflation in 4 CPI cities of North Sumatra, namely, Medan, Pematangsiantar, Sibolga, and Padangsidempuan for the period 2016-2020. The method used in this study is quantitative and uses a panel data regression model. The data used is secondary data obtained from the Central Statistics Agency (BPS). The results showed that the variables of government expenditure and the district/city minimum wage had a positive and insignificant effect on inflation in 4 CPI cities of North Sumatra Province. Meanwhile, the Gross Regional Domestic Product per capita variable has a negative and significant effect on inflation in 4 CPI Cities in North Sumatra Province.

Keywords
Inflation; government expenditure; wages; data panel; common effect model.

I. Introduction

The rate of inflation is an economic phenomenon that commonly occurs in an economy. Inflation will become a serious economic problem if it lasts for a long time and is at a high level. Theoretically, inflation is defined as an increase in the prices of goods in general and continuously. So the increase that occurs in a small group of goods cannot be said to be inflation. Likewise, price changes that occur once cannot be considered as inflation. (Yuliadi, 2019) Economic actors, basically have very important functions. Because it has two functions at once, namely as a supplier of all the needs of the community, both primary, secondary and tertiary. At the same time, they also function as absorbers of community labor, which can economically increase purchasing power. (Ansari, T. 2019)

One of the problems in the economy in every country is the problem of inflation. Inflation is the process of increasing the general prices of goods continuously. This does not mean that the prices of the various goods rise by the same percentage. Perhaps the increase may not occur simultaneously. What is important is that there is an increase in the general price of goods continuously during a certain period. The increase that occurred only once even though with a large enough percentage was not inflation. (Nopirin, 2014).

Factors that generate demand for government goods (goods provided by the government) and analyze these factors on the availability of government goods. The interaction between demand and supply for government goods determines the amount of government goods that will be provided through the budget, and this will lead to demand for other goods. (Salhab, 2010).

According to Keynes, inflation is not only caused by the monetary expansion of the Central Bank but also through government spending. If the government implements an expansionary fiscal policy, namely by increasing government spending, then this will encourage an increase in prices or will trigger inflation. In other words, an increase in government spending through an expansionary fiscal policy will encourage the real sector economy to grow. The productivity of the economy will then have a positive impact on

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increasing demand for production input goods and consumption goods, thereby increasing the price level. (Siswoyo, 2020).

The economic condition of a region can be seen from the Gross Regional Domestic Product (GRDP) of the region. Gross Domestic Product (GDP) can be defined as the value of goods and services produced in the country in a given year. (Sukirno, 2016:34). GRDP is the amount of gross added value generated by all business units in a certain area, or is the total value of final goods and services produced by all business units in a certain area, or is the total value of goods and services the final output produced by all economic units in an area. GRDP per capita is an illustration and average income received by each resident for one year in a region or region. This per capita GRDP can be obtained from the quotient between GRDP and the population in the middle of the year concerned. Inflation can change people's income. In some conditions, such as inflation, it can encourage economic development. Inflation can encourage entrepreneurs to expand their production. Thus, new job opportunities will grow as well as an increase in one's income.

But other things than that are worried about increasing income, people use money by spending excess goods which results in the value or price of an item increasing, due to public demand for an item that is not in accordance with the number of items available. This is in accordance with the law of economics that when demand increases, while supply remains constant, prices will rise.

GRDP itself is one indicator that affects economic growth. As in the research of Chowdury (2001) said that there is a positive long-term relationship between gross domestic product growth and inflation in Bangladesh, India, Pakistan, and Sri Lanka. Meanwhile Jayathileke and Rathnayake (2013) only found a one-way causality between economic growth and inflation.

The high rate of inflation prompted workers to demand an increase in the provincial minimum wage. This condition can cause the main problems in economic development faced by developing countries. The problem is the narrowing of job opportunities due to the increase in the provincial minimum wage as a component of the company's production costs. Seeing these conditions, where the policy of increasing the minimum wage has a contradictory impact between each economic actor. On the one hand, an increase in wages aims to improve the standard of living, which will increase people's purchasing power which ultimately results in an increase in demand for goods and services which results in an increase in the rate of inflation.

This study was conducted with the aim of knowing the effect of government spending, per capita GRDP, UMK on the inflation rate in 4 CPI Cities of North Sumatra Province.

II. Review of Literature

2.1 Inflation

The rate of inflation is an economic phenomenon that commonly occurs in an economy. Inflation will become a serious economic problem if it lasts for a long time and is at a high level. Theoretically, inflation is defined as an increase in the prices of goods in general and continuously. So the increase that occurs in a small group of goods cannot be said to be inflation. Likewise, price changes that occur once cannot be considered as inflation. (Yuliadi, 2019).

The inflation rate is calculated based on index numbers collected from several kinds of goods traded in the market with each price level (these goods are of course the most numerous and are the basic needs of the community). Based on the price data, an index

number is compiled. The index figure that takes into account all the goods purchased by consumers at each price is called the Consumer Price Index (CPI). Based on the consumer price index, the magnitude of the rate of increase in prices in general in a certain period can be calculated. (Iskandar, 2018).

Formula for calculating inflation

Inflation: $\frac{(IHK - IHK_{-1})}{IHK_{-1}} \ x \ 100\%$

The wholesale trade index focuses on a number of goods at the wholesale trade level. This means that the price of raw materials, raw materials or semi-finished products is included in the calculation of the price index. Usually changes in the price index are in line with the cost of living index or consumer price index.

Sometimes the inflation rate increases suddenly or occurs as a result of certain events that occur outside the government's expectations, for example the effect of a very large reduction in the value of money or political instability (Sukirno, 2016).

2.2 Government Expenditure

Government expenditures are incurred by the government to provide education and health facilities, expenditures to provide police and army, payment of salaries to government employees and expenditures to develop infrastructure are carried out for the benefit of the community. (Sukirno, 2016).

Inflation and deflation of the economy can be handled directly by the public and market mechanisms, but the government must use instruments in the form of monetary policy and fiscal policy. Government spending is one element of aggregate demand (Ferayanti, 2014).

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2.4 Gross Regional Domestic Product (GDP)

Gross regional domestic product (GRDP) is a concept of measuring the actual level of production and economic activity of a region. According to Bank Indonesia (BI), GRDP is the amount of gross added value produced by all business units in a certain area, or is the total value of final goods and services produced by all economic units in a region.

Gross Regional Domestic Product is the total market value of all goods and services produced by a regional or province within a certain year. GRDP can be divided into 2, namely GRDP at constant prices and GRDP at current prices.

To calculate economic growth in nominal terms, GRDP can be used. GRDP is used for various purposes but the most important is to measure the performance of the economy as a whole. This amount will be equal to the total nominal value of consumption, investment, government spending on goods and services, and net exports.

Per capita income is also known as the average income of the population. This term can be related to Domestic Regional Domestic Product (GDP) which is the market value of

transaction activities calculated at a certain time. The purposes of calculating per capita income are:

1. Assessing the level of community prosperity in a country
2. As a benchmark for the country's economy
3. As a benchmark for issuing policies in the economy
4. As a benchmark for development

2.5 Regency/City Minimum Wage (UMK)

Wages are the main factor that can encourage morale so that the company's productivity is expected to increase. Wages are remuneration or appreciation for work performance and must be able to meet the needs of living with family properly so that they can concentrate the tasks entrusted to them.

The minimum wage level of an area or city is strongly influenced by economic developments in that area whose determination is made by the governor even though the discussion is proposed by the regent or mayor. In general, wages have a strategic position for workers, wages are needed to support themselves and their families, as well as motivation to increase their work productivity. The purpose of setting the minimum wage is to increase the wages of workers who are still below the minimum wage and to protect workers or laborers from the actions of employers who give their workers inadequate wages. One component of setting the minimum wage is the inflation rate in each province.

The minimum wage is determined based on economic and labor conditions with the formula:

UM_n= + { x (+ %$UM_t UM_t Inflasi_t \Delta\ PDB_t$)}

Where :

UM_n = Minimum wage to be set

UM_t = Minimum wage for the year

$Inflasi_t$ =Inflation calculated from the period of September last year to September period of the current year.

$\Delta\ PDB_t$ =Growth of gross domestic product at constant price

2.6 Hypothesis Floating

The framework of thought can be interpreted as a systematic description of the performance of the theory in providing alternatives to a set of problems. Inflation is a major problem that is an important concern for every economy. Inflation can occur due to an increase in the price of goods which are general goods that are needed by the community continuously. Inflation can occur because the excess between aggregate demand in the economy cannot be balanced with aggregate supply in the economy. The cause of inflation occurs due to excess money circulating in the community. The more money circulating in the community, it can cause the prices of goods in general to rise in the long term.

Government spending is one element of aggregate demand. Government spending reflects government policies. If the government has set a policy to buy goods and services, government spending reflects the costs that must be incurred by the government to implement the policy. Government spending is also one of the indicators that affect economic growth. The purpose of the macro theory of government spending is to analyze the factors that give rise to the demand for government goods (goods provided by the government) and analyze these factors on the availability of government goods.

Gross Regional Domestic Product Per capita is a description and average income received by each resident for one year in a region or region. This per capita GRDP can be obtained from the quotient between GRDP and the population in the middle of the year concerned. Inflation can change people's income. As inflation can encourage economic development. But on the other hand, the income received can affect inflation. This is because too fast economic development can affect the rate of inflation.

In general, wages have a strategic position for workers, wages are needed to support themselves and their families, as well as motivation to increase their work productivity. The purpose of setting minimum wages is to increase the wages of workers who are still below the minimum wage and to protect workers/laborers from the actions of employers who give their workers inadequate wages. One component of setting the minimum wage is the inflation rate in each province.

The high rate of inflation prompted workers to demand an increase in the provincial minimum wage. This condition can cause the main problems in economic development faced by developing countries. The problem is the narrowing of job opportunities due to the increase in the provincial minimum wage as a component of the company's production costs. Seeing these conditions, where the policy of increasing the minimum wage has a contradictory impact between each economic actor. On the one hand, an increase in wages aims to improve the standard of living, which will increase people's purchasing power which ultimately results in an increase in demand for goods and services which results in an increase in the rate of inflation.

From the explanation above, it is known that government spending, per capita GRDP, UMK have an effect on inflation. Then the framework can be described as follows:

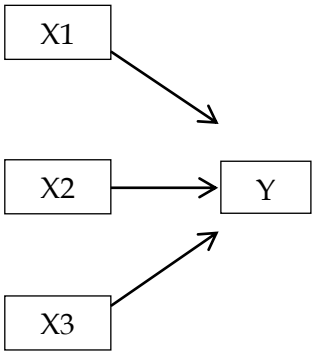


Figure 1. *Framework*

The hypothesis is a temporary answer to a research problem that is theoretically considered the most probable or the highest level of truth (Purba, et al, 2021). So the hypothesis in this study is as follows:

1. Ho = b1 = 0 : It is suspected that government spending does not have a significant effect on inflation in 4 CPI Cities in North Sumatra Province.
   Ha = b1≠ 0 : It is suspected that government spending has a significant effect on inflation in 4 CPI Cities in North Sumatra Province.
2. Ho = b2 = 0 : It is suspected that per capita GRDP does not have a significant effect on inflation in 4 CPI Cities in North Sumatra Province.
   Ha = b2≠ 0 : It is suspected that GRDP per capita has a significant effect on inflation in 4 CPI Cities in North Sumatra Province.

3. Ho = b3 = 0 : It is suspected that the UMK has no significant effect on inflation in 4 cities in North Sumatra Province.
   Ha = b3≠0: It is suspected that the UMK has a significant effect on inflation in 4 cities of North Sumatra Province.

III. Research Method

In this study, researchers used quantitative methods. As the name implies, many are required to use numbers, starting from data collection, interpretation of the data, and the appearance of the results. (Purba, et al, 2021:56-57). This research is a Panel Data Regression study conducted at the Central Statistics Agency (BPS). The data used is data from 4 CPI Cities in North Sumatra Province, namely Pematangsiantar, Sibolga, Medan, Padangsidempuan. The inflation data used is the annual inflation rate data from 2011-2020.

Dependent Variable(Y) is the dependent variable which is explained or influenced by the independent variable. The dependent variable in this study is inflation. Independent variable (X) or independent variable is a variable that is not influenced or does not depend on other variables, but this variable affects other variables. In this study, the variables were not influenced or independent, namely government spending (X1), GRDP per capita (X2), UMK (X3).

The analytical technique used in this research is Panel Data Regression. This analysis is carried out in the following stages:

3.1 Estimation of Panel Data Regression Estimation

a. Fixed Effects Model (FEM)

Fixed Effect model technique is a technique for estimating panel data by using dummy variables to capture differences in intercepts. This definition of fixed effect is based on the difference in intercepts between companies but the intercept is the same across time (time invariant). In addition, this model also assumes that the regression coefficient (slope) remains between companies and over time. (Widarjono, 2018).

b. Random Effect Model (BRAKE)

In the Random Effects model, where the panel data estimates, the disturbance variables may be related to each other over timean individual. (Widarjono 2018).

c. Common Effect Model (CEM)

By simply combining the data without looking at the differences between time and individuals, it is possible to use OLS to estimate the panel data model. This method is known as Common Effect estimation. (Widarjono 2018). The regression model in the form of a linear log can be written as follows:

$INFL_{it}$= + + + + (Common Effect Model)$\beta_o \beta_1 lnPP_{it} \beta_2 lnPDRBP_{it} \beta_3 lnUMK_{it} e_{it}$

$INFL_{it}$== + + + (Random Effect Model)$\bar{\beta} o \beta_1 lnPP_{it} \beta_2 lnPDRBP_{it} \beta_3 lnUMK_{it} v_{it}$

$INFL_{it}$= + + + + (Fixed Effect Model)$\beta_1 lnPP_{it} \beta_2 lnPDRBP_{it} \beta_3 lnUMK_{it} \alpha_i e_{it}$

Where :

$INFL_{it}$: Inflation Rate

$lnPP_{it}$: Government Expenditure

$lnPDRB_{it}$: Percapita Gross Regional Domestic Product

$lnUMK_{it}$: City Minimum Wage

e_{it} : *Error term*

α_i : *Unobserved time-invariant*

v_{it} : Combination of individual and overall disturbance variables

This approach does not pay attention to the individual dimensions and time. It is assumed that the behavior of the data between regions is the same in various time periods.

3.2 Selection of Panel Data Regression Estimation Technique

In this estimation, there are 3 techniques that can be used, namely the model with the OLS (common) method, the Fixed Effect model and the Random Effect model. And the test used to determine the most appropriate technique for estimating the panel data regression. First, the F (Chow) statistic test was used to choose between OLS or Fixed Effect methods. Second, the Lagrange Multiplier (LM) test was used to choose between OLS or Random Effect. Finally, to choose between Fixed Effect or Random Effect, Hausman's test is used. (Widarjono, 2018)

3.3 Classic assumption test

Before performing a regression analysis, in order to get an estimate that is efficient and cannot, it is necessary to test the classical assumptions that must be met, namely:

a. Normality test

Used to determine whether the dependent and independent variables are normally distributed or not. Using the Jarque-Bera test or the JB test, compare the JB count with the X table. If JB 2 count < the value of X table, then the data is normally distributed or the probability value is < the specified degree of confidence.

b. Autocorrelation Test

Autocorrelation is the occurrence of a correlation between the variables themselves on different observations. The autocorrelation test was carried out using the BreuschGodfrey Serial Correlation Lagrange Multiplier Test (LM test). This test is very useful for identifying autocorrelation problems not only at the first degree but can also be used at the degree level. It is said that autocorrelation occurs if the calculated X (Obs R-Squared) value > X table or the probability value < the specified degree of confidence.

c. Heteroscedasticity test

Heteroscedasticity is the variance of the data used to make the model not constant. Testing whether there is a heteroscedasticity problem in an empirical model that is being observed is also an important stepso as to avoid direct regression problems. The method for detecting the presence or absence of heteroscedasticity problems in the empirical model is using the White test.

3.4 Statistic test

This test is used to determine whether the independent variables individually and collectively have a significant effect on the dependent variable. Statistical tests include t test, F test and coefficient of determination (R).

a. Individual Significance Test (Test Statistical t)

The t-statistical test shows how far the influence of one variable*independent*individually in explaining the variation of the dependent variable. To

perform the t-test with the Quick Look method, namely: look at the probability value and the degree of confidence determined in the study or see the ttable value with its tcount. If the probability value < the specified degree of confidence and if the value of t count is higher than t table, then an independent variable individually affects the dependent variable.

b. Simultaneous Significance Test (F Statistics Test)

The F statistical test shows whether all*independent variable*in the model have a joint influence on the dependent variable. To perform the F test using the Quick Look method, namely: look at the probability value and the degree of confidence determined in the study or see the t table value with its calculated F. If the probability value < the specified degree of confidence and if the calculated F value is higher than t table, then an independent variable jointly affects the dependent variable.

c. Coefficient of Determination ()R^2

The coefficient of determination measures how far the model's ability to explain the variation of the dependent variable. The value of the coefficient of determination is between zero and one, a small R value means the ability of the independent variables to explain the variation of the dependent variable is very limited and a value close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable.

IV. Result and Discussion

4.1 Analysis Results

The following are the results of the regression to determine the effect of Government Expenditure, GRDP per capita, UMK on inflation in 4 CPI Cities in North Sumatra Province. In this study, the researcher used the Panel Data Regression method and got the best model out of the three models in this method, namely, the Common Effect Model..

4.2 Panel Data Regression Model Selection

Basically, the three panel data estimation techniques (models) can be selected according to the research situation, there are three tests to choose panel data estimation techniques. 1). F statistical test (Chow test) was used to choose between the Common Effect method and the Fixed Effect method. 2). Hausman test is used to choose between the Fixed Effect method and the Random Effect method. 3) The Lagrange Multiplier (LM) test is used to choose between the common effect method or the random effect method.

a. Chow test

Chow test is used to determine whether the selected model is the common effect model or the fixed effects model. H0 is rejected if the value of the probability F is less than alpha, which is less than 0.05, where H0 is the common effect model and H1 is the fixed effect model.

Table 1. Chow test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.883662	(3,33)	0.4596
Cross-section Chi-square	3.090768	3	0.3778

H0: Selected CEM model (Prob > 0.05)

H1: FEM modelsselected (Prob < 0.05)

The result of the fixed effect or common effect for this model has a probability value of F of 0.3778 which is greater than alpha 0.05, so H0 is accepted and H1 is rejected, the appropriate model from this result is the common effect model.

b.Hausman test

The Hausman test is a test used to see whether fixed effects or random effects are the best method. Where H0 is the Random effect model and H1 is the Fixed Effect model.

Table 2. Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.650985	3	0.4486

H0: Selected REM model (Prob. > 0.05)
H1: FEM modelsselected (Prob. < 0.05)

Based on the results of the Hausman test showing a significance value of 0.4486 (significance <0.05), then H0 is accepted and H1 is rejected, so it can be interpreted that the random effect model is better than the fixed effect model. Then the model that should be used is the Random Effect Model.

b. Lagrange Multiplier Test

Langrange Multiplier(LM) is a test to determine whether the right model is used random effects or common effects. This test was developed by Breusch Pagan.

Table 3. Lagrange Multiplier Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.718915 (0.3965)	39.65497 (0.0000)	40.37388 (0.0000)

H0:***CEM models*** selected (Prob > 0.05)
H1: Selected REM model (Prob < 0.05)

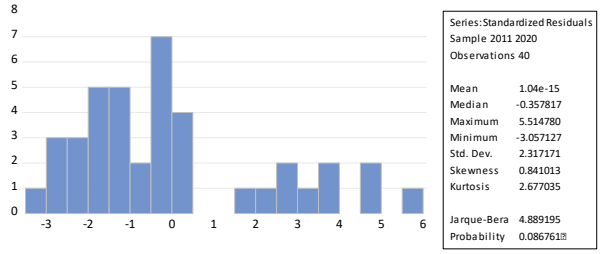
The output above shows the Prob Breush-Pagan (BP) value of 0.3965. The hypothesis is that if the Breush-Pagan Prob (BP) is greater than alpha (0.3965 > 0.05) then H0 is accepted and H1 is rejected, so the correct model in the above results is the common effects model.

4.3. Classic assumption test

a. Normality test

The significance test of the effect of the independent variable on the dependent variable through the t-test will only be valid if the residuals we get have a normal distribution. There are several methods that can be used to detect whether the residual has a normal distribution or not. In this chapter, we will discuss the method developed by Jarque-Bera. (Widarjono, 2018).

The basis for determining whether the data is normal or not, if the value of the probability > 0.05, then the data is normally distributed, but if the probability is < 0.05 then the data is not normally distributed.



Source: Data analysis, 2021

Figure 1. *Normality Test*

From the results of graph 4 above the probability. JB count 0.086761 > 0.05 stating the probability value > so it can be concluded that the residuals are normally distributed.

b. Multicollinearity Test

Multicollinearity test aims to test whether the regression model has a correlation or relationship between independent (independent) variables. A good regression model should not have a correlation between the independent variables. A good regression model is a model that does not have multicollinearity. The following are the results of multicollinearity testing in this study:

Table 4. Multicollinearity Test

	X1	X2	X3
X1	1.000000	0.413403	-0.044175
X2	0.413403	1.000000	0.694372
X3	-0.044175	0.694372	1.000000

Source: Olahdata, 2021

The results of the multicollinearity test show that there is no high correlation value between the independent variables, so it can be concluded that there is no multicollinearity between the independent variables.

b. Autocorrelation Test

Literally, autocorrelation means that there is a correlation between one observation and another at different times. In relation to the assumption of the OLS method, autocorrelation is a correlation between one disturbance variable and another disturbance variable. Meanwhile, one of the important assumptions of the OLS method related to the disturbance variable is that there is no relationship between the disturbance variable and other disturbance variables. This study uses the DW (Durbin Watson) value, with the following test results:

Table 5. Durbin Watson Test

RootMSE	2.288023
Mean dependent var	4.461000
S.D. dependent var	2.675531
Akaike info criterion	4.693254
Schwarz criterion	4.862142
Hannan-Quinn criter.	4.754318
Durbin-Watson stat	1.943551

Source: data processing, 2021

Based on the table above, it can be concluded that the results of autocorrelation are not autocorrelation.

Table 6. Data Panel Regression Results

Dependent Variable: Y
Method: Panel Least Squares
Date: 11/17/21 Time: 06:35
Sample: 2011 2020
Periods included: 10
Cross-sections included: 4
Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.154263	1.506814	5.411593	0.0000
X1	1.68E-13	2.00E-13	0.840612	0.4061
X2	-3.06E-09	2.86E-08	-0.107099	0.9153
X3	-2.03E-06	1.04E-06	-1.949743	0.0590

Root MSE	2.288023	R-squared	0.249939
Mean dependent var	4.461000	Adjusted R-squared	0.187434
S.D. dependent var	2.675531	S.E. of regression	2.411788
Akaike info criterion	4.693254	Sum squared resid	209.4020
Schwarz criterion	4.862142	Log likelihood	-89.86507
Hannan-Quinn criter.	4.754318	F-statistic	3.998707
Durbin-Watson stat	1.943551	Prob(F-statistic)	0.014813

The results of the test of the Government Expenditure variable (X1) obtained a coefficient of 1.6888 and the probability result of 0.4061 is greater than 0.05, so it can be concluded that the Government Expenditure (X1) variable has no significant positive effect on Inflation. The results of the test of the Per capita GRDP variable (X2) obtained a coefficient of -3.0666 and a probability result of 0.9153 smaller than 0.05 so it can be concluded that the Per capita GRDP variable (X2) has a negative and insignificant effect on inflation. The test results for the UMK variable (X3) obtained a coefficient of -2.0333 and the probability result of 0.0590 is greater than 0.05 so it can be concluded that the UMR variable (X3) has no significant negative effect on inflation.

Based on the results of the analysis, the F-count value is 3.998707 with a probability value of 0.014813 at a significance level of 5%, it can be concluded that government spending, gross regional domestic product per capita, UMK together have a significant effect on inflation in 4 CPI Cities of North Sumatra Province.

From the test results using the common effect model, the effect of government spending, regional gross domestic product per capita, and UMK on inflation in 4 cities, the CPI of North Sumatra Province was obtained at 0.2499. This means that the independent variables in the model can explain inflation of 24.99% while the remaining 76.01% is explained by other variables outside the model.R^2

4.4. Discussion

To control inflation can be done by using monetary policy, fiscal policy and non-monetary policy. Monetary policy targets are achieved through regulating the money supply, fiscal policy targets regarding government spending and taxation and non-monetary policy targets regarding wage and price determinations.

a. The Effect of Government Spending on Inflation in 4 CPI Cities of North Sumatra Province

Based on the results of research conducted, the Government Expenditure variable (X1) has a positive and insignificant effect on inflation in 4 CPI Cities in North Sumatra Province. If it is associated with the theory that inflation occurs because of an increase in the money supply, and this can happen because the government budget is being spent in excess. In this research, government spending has a positive but not significant effect on inflation in 4 CPI Cities of North Sumatra Province, which can be interpreted that the amount of government spending issued in 4 CPI Cities of North Sumatra Province doesn't really affect inflation in the area, because the government budget for regions, both in terms of direct and indirect expenditures, it is considered appropriate, There is a balance between the budget provided and the budget issued. And the Central Banks in the 4 CPI Cities of North Sumatra Province carried out policies to stabilize inflation by controlling the government budget in each region, so that government spending was not excessive. And other policies can be in the form of increasing tax rates and making loans.

The same thing happened to the results of research by Siswoyo (2020) and Sirtal (2021) which stated that government spending had a positive effect on inflation. Which means if government spending increases it will push up prices or will trigger inflation

b. The Influence of Per capita GRDP on Inflation in 4 CPI Cities of North Sumatra Province

Based on the results of research conducted, the GRDP per capita variable (X2) has a negative and insignificant effect on inflation in 4 CPI Cities in North Sumatra Province. and based on the observation test, the graph data states that there is an increase in income every year. And it can be concluded that the regional economic growth is quite good and this results in per capita income not affecting inflation.

The results of this research test state that per capita GRDP has a negative and insignificant effect. It can be concluded that when income increases in 4 CPI cities of North Sumatra Province, the inflation rate will decrease. This could have happened because the regional inflation control team (TPID) was able to control and keep the inflation rate low and stable by collecting data and information on the development of prices for basic and essential goods and services at the provincial level, formulating inflation control policies at the provincial level taking into account the national inflation control policy, coordinating with the central inflation control team and the district/city inflation control team.

The results of this study are the same as the results of Bernard's (2020) study which states that GRDP has no effect on inflation. And this study contradicts the results of Ferayanti's research (2014) which states that GRDP has an effect on inflation.

c. The Influence of MSEs on Inflation in 4 CPI Cities in North Sumatra Province

Based on the research results, the UMK variable (X3) has a negative and insignificant effect on inflation in 4 CPI Cities in North Sumatra Province. The minimum wage level of an area/city is strongly influenced by economic developments in the area, the determination of which is carried out by the governor even though the discussion is proposed by the regent or mayor. The results of the observations state that the UMK data increases every year, besides the increase in the UMK does not affect the inflation rate because the nominal UMK is still categorized as standard in each city of North Sumatra Province IHK. And this cannot be separated from the help of the inflation control team in each CPI city.

And this study contradicts the results of Siswoyo's research (2020) which states that the minimum wage has an effect on inflation.

V. Conclusion

From the results of the study using panel data regression with the Common Effect model, it can be concluded that

1. Government spending has a positive and insignificant effect on inflation in 4 CPI Cities in North Sumatra Province.
2. Per capita GRDP has a negative and insignificant effect on inflation in 4 CPI Cities in North Sumatra Province.
3. The UMK has a negative effect on inflation in 4 CPI Cities in North Sumatra Province.

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