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The Influence of Direct Spending, Indirect Spending on Gross Regional Domestic Product (GRDP) in Samosir Regency

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Abstract

Economic development is an economic effort that aims to increase economic activities to progress towards a better Indonesian society that is fair, more advanced, prosperous, has potential, quality, and has a great spirit for the formation of economic change. Economic growth is the potential for increased economic development in a region. Economic growth is a situation in which the population of a country and its region increases in income, causing the production prices of goods and services to rise. This research aims to determine the effect of direct spending and indirect spending on Gross Regional Domestic Product (GRDP) in Samosir district. The approach taken in this research is a quantitative approach. The type of data in this research is time series data from 2007 to 2021. The analysis method used is Multiple Linear Regression. The results of the analysis show that simultaneously (direct expenditure and indirect expenditure) have a significant influence on the dependent variable (GRDP of Samosir Regency). Partially it is found that the direct expenditure variable has no effect on Gross Regional Domestic Product (GRDP) in Samosir Regency. Meanwhile, the expenditure variable does not directly have a positive and significant influence on Gross Regional Domestic Product (GRDP) in Samosir district.

Keywords: economic development; economic growth; direct shopping; indirect shopping; gross regional domestic product

1. Introduction

Economic growth is the result of capital accumulation and investment, especially in the private sector, which can increase productivity in the economy. This can be done by providing public facilities supported by social services, for example basic public health programs, education, irrigation, providing roads and bridges or public facilities, training and skills programs and other supporting programs to provide the benefits of prosperity to the community [1]. However, another aspect such as institutions plays a significant role in driving economic growth as the robust and well-functioning institutions positively impact per capita growth [2].

Regional expenditure in Samosir Regency experiences fluctuations every year [3]. In the 2007 period, direct spending and indirect spending in Samosir Regency were the lowest spending. With total expenditure of 226,824. However, in the 2008 period, direct spending and indirect spending in Samosir Regency increased from 2007 by 65.40 percent with total spending of 375,166 million rupiah. The highest direct expenditure in Samosir Regency occurred in the 2017 period with a total of 434,923 million rupiah, an increase of 7.79 percent from the previous 2016. Meanwhile, the highest indirect expenditure in Samosir Regency occurred in the 2020 period with a total of 515,745 million rupiah. Several factors that influence GRDP growth are Regional Government Expenditures (direct spending, indirect spending). The picture below shows the rate of economic growth of Samosir Regency.

Based on the Figure 1, the growth rate of Samosir Regency in 2004 and 2005 decreased, then gradually increased in 2006, 2007, 2008, 2009 and 2010. Then it decreased again in 2011 by 5.18 percent. Furthermore, it experienced an increase in 2012 by 6.05 percent and in 2013 by 6.10 percent. However, there was a decline again in 2014 amounting to 5.95 percent, 2015 amounting to 5.77 percent, and 2016 decreasing to 5.27 percent. Furthermore, there was an increase in 2017 to 2019. Then it decreased again in 2020 by -0.59 percent and returned to a stable increase in 2021. The highest increase in the rate of economic growth in Samosir Regency occurred in 2004 at 7.85 percent.

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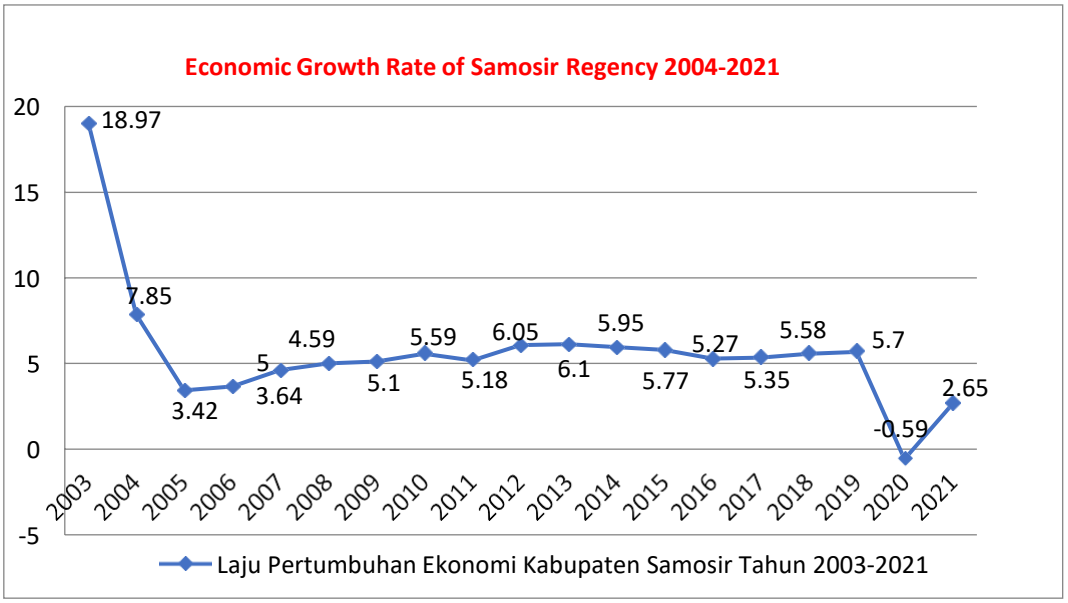

Figure 1. Economic Growth Rate of Samosir Regency (Source: BPS Samosir Regency)

However, the lowest decline in economic growth in Samosir Regency occurred in 2020, amounting to -0.59 percent. During the 2014 to 2019 period, the economic growth rate of Samosir Regency was always higher than the economic growth rate of North Sumatra Province and the national level. This shows that the economic growth of Samosir Regency is relatively better when compared to regional macroeconomic conditions in North Sumatra Province and nationally. So that regional spending and regional original income have a big influence on GRDP, which is generally used as an indicator to assess the economic performance of a region, especially in relation to the region's ability to manage its resources [4]. Related to this, the government has functions and duties in the era of regional autonomy which are able to provide more accurate and flexible information regarding alternative sources of regional revenue to finance regional administration [5]. With this data information, it can be used as a reference for the government to implement regional government planning and policies, especially regional financial management, which is used as material for evaluating the level of independence and decentralization in the current autonomous regions [6]. Moreover, enhancing the effectiveness of funds that are transferred from the central government to local governments requires prioritization of the allocation to productive sector activities [7].

2. Research Method

2.1. Economic Development

Economic development is economic growth plus change. This means that the presence or absence of economic development in a country each year is not only measured by the increase in production of goods and services that occurs each year, but must also be measured based on other changes that occur in every aspect of economic activity such as educational developments, technological developments, improvement in health, improvement in available infrastructure and increase in income, prosperity of the community.

2.2. Economic Growth

Economic growth is a situation in which the population of a country and its region increases in income, causing the production prices of goods and services to rise [8]. Economic growth can also be said to occur if the number of unemployed in an area is very comparable to workers and the poverty line in society is minimal. Due to economic growth, the government is feeling the impact, namely that development and equitable distribution of community infrastructure can be implemented quickly because per capita income has soared.

2.3. Direct Shopping

Direct expenditure according to Minister of Home Affairs Regulation number 13 of 2006 is expenditure that is budgeted directly for program implementation, which is an elaboration of SKPD policy in the form of efforts that include one or more activities using the resources provided to achieve measurable results in accordance with the SKPD mission. The composition of Regional Expenditures according to PMDN Number 13 of 2006 states that Direct Expenditures consist of: Personnel Expenditures, Goods and Services Expenditures, Capital Expenditures. Meanwhile, the composition of Regional Expenditures according to

PMDN Number 77 of 2020 direct expenditure consists of: Operational Expenditures and Capital Expenditures.

2.4. Indirect Shopping

Indirect Expenditure is expenditure that has been budgeted and is not directly related to the implementation of programs and activities such as subsidized expenditure, employee interest, and others [9]. The composition of Regional Expenditures according to PMDN Number 13 of 2006 states that Indirect Expenditures consist of Employee Expenditures, Interest Expenditures, Subsidy Expenditures, Grant Expenditures, Social Assistance Expenditures, Financial Assistance Expenditures, Unexpected Expenditures. Meanwhile, the composition of Regional Expenditures according to PMDN Number 77 of 2020, indirect expenditure consists of: Transfer Expenditures and Unexpected Expenditures.

2.5. Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GRDP) is the gross added value of all goods and services created or produced in the domestic region of a country which arise as a result of various economic activities in a certain period without regard to whether the production factors are owned by residents or non-residents [10]. The high level of economic growth is seen by the high value of GDP, which shows that there is economic progress in that area.

3. Research Method

The type of research used is research using quantitative methods because the data used is numerical. The data used in the research is Time Series data which is secondary data, starting from 2007-2021. The data source for this research is from the Central Statistics Agency (BPS). The model used in testing this hypothesis is a multiple linear regression model. The regression analysis used shows a correlated model between variables, besides that it is used to determine which independent variables statistically influence the dependent variable. Multiple linear regression analysis is also a type of linear regression that is used to determine the magnitude of the correlation between independent variables and the number of relationships greater than two (Suharyadi and Purwanto, 2004: 508). The multiple linear regression analysis used in this research, the regression model equation is as follows:

$$Y = \beta 0 + \beta 1 X1i + \beta 2 X2i + \varepsilon i \; i = 1,2,3,4 \ldots., n$$

The statistical tests used to determine the significance level of each independent variable coefficient on the dependent variable are: statistical t test, F-Statistics test, coefficient of determination (R2). One of the requirements carried out to detect whether there are deviations from the basic classical assumption test in regression includes: multicollinearity test, autocorrelation test which is to test the existence of serial autocorrelation, namely with the Durbin Watson test (D-W test) and Run Test, normality test which is to test Residual normality in this research is the non-parametric Kolmogorof – Sminov (K-S) statistical test, a heteroscedasticity test where to determine whether there is a heteroscedasticity problem in this research, it can be seen from the scatterplots graph.

4. Results and Discussion

4.1. Multiple Linear Regression

Table 1. Multiple Linear Regression Coefficients

Variable		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	624.062	259.021		2.409	.033
	Direct spending (million rupiah)	-.417	1.601	-.047	-.260	.799
	Indirect spending (million rupiah)	5.470	1.012	.978	5.406	.000

Dependent Variable: Gross Regional Domestic Product Bruto (PDRB) (million rupiah) Source: Data processed SPSS version 26 (2023)

Based on the SPSS print out, the regression equation can be written as follows:

$$\hat{Y} = 624{,}062 - 0{,}417\,X1 + 5{,}470\,X2 + Xn$$

With the following interpretation:

1. Constant

The constant value is positive at 624,062 which shows that GDP in Samosir tends to increase by 624,062 million rupiah with the assumption that direct spending and indirect spending are zero.

2. Direct Shopping Regression Coefficients

   The regression equation shows that direct spending has a negative effect with a regression coefficient of – 0.417. This means that if direct spending increases by 1 million rupiah, GDP in Samosir will decrease by 0.417 million rupiah.

3. Indirect Shopping Regression Coefficient

   Indirect Shopping has a positive effect with a regression coefficient of 5.470. This means that if indirect spending in Samosir increases by IDR 1 million, then GDP in Samosir will increase by 5,470 million rupiah.

4.2. Individual/Partial Test (t-test)

The t test is used to see the significant influence of each independent variable on the dependent variable. If the probability value of the independent variable is <0.05, then H0 is rejected and H1 is accepted, which means the independent variable has a significant effect on the dependent variable.

1. Test the Effect of Direct Shopping (X1) on GRDP (Y) in Samosir

   Based on the results of the estimation model analysis, it is known that direct spending has a significant value of 0.799. This figure is greater than α = 0.05. The calculated t value of the direct shopping regression coefficient is – 0.260, while the t table value at α = 5% with 12 degrees of freedom (15-3) is 1.782. So the tcount value is smaller than the ttable value at α 5% so it can be concluded that H0 is accepted and H1 is rejected. This means that partially direct spending has a negative and insignificant effect on GRDP in Samosir in 2007 - 2021.

2. Test the Effect of Indirect Shopping (X2) on GRDP (Y) in Samosir

   Based on the results of the estimation model analysis, it is known that Indirect Shopping has a significant value of 0.000. This figure is smaller than α = 0.05. The calculated value of the Indirect Shopping regression coefficient is 5.406, while the ttable value at α = 5% with degrees of freedom 12 (15-3) is 1.782. So the tcount value is greater than ttable at α 5% so it can be concluded that H0 is rejected and H1 is accepted. This means that partially indirect spending has a positive and significant effect on GRDP in Samosir in 2007–2021.

4.3. Simultaneous Test (F TEST)

To determine the joint influence of independent variables on the dependent variable, the F test is used. The test results using SPSS 26 are presented in Table 2.

Table 2. Simultaneous Test (F Test) ANOVA[a]

Variable		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7461533.380	2	3730766.690	44.456	.000[b]
	Residual	1007050.890	12	83920.907		
	Total	8468584.270	14			

Dependent Variable: Gross Regional Domestic Product (PDRB) (million rupiah)
Predictors: (Constant), Direct shoping (jutaan rupiah), Belanja Langsung (jutaan rupiah)
Source: Data processed by SPSS version 26 (2023)

From table 4.2 direct spending, indirect spending has a significant influence with an F test of 44.456 with sig. 0,000. This means that simultaneously/together direct spending and indirect spending significantly influence GRDP in Samosir in 2007 - 2021.

4.4. Goodness Test: Coefficient of Determination (R2)

The coefficient of determination (R2) is used to measure how much diversity in the dependent variable can be explained by the diversity of the independent variable. The R2 value can be seen in table 4.3 which states that the coefficient of determination is 0.881. This means that the diversity of the dependent variable can be explained by the independent variable by 88.1%. The remaining 11.9% is explained outside the model which is not included in this study. Thus, the multiple linear regression model can be considered appropriate.

4.5. Classic Assumption Test

4.5.1. Multicollinearity Test

The multicollinearity test is used to find out whether there is a strong correlation between the independent variables. The SPSS results in Table 4.4 show that there are no symptoms of multicollinearity. The TOL test result for each variable is ≥ 0.10 and the VIF test result for each variable is ≤10.

Table 3. Goodness Test: Coefficient of Determination (R2) Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939[a]	.881	.861	289.691055

a. Predictors: (Constant), Indirect Spending (million rupiah), Direct Spnding (million rupiah)
Source: Data processed by SPSS version 26 (2023)

Table 4. Multicollinearity Tests

Variable	Testing Criteria		Testing Value	
	VIF	Tolerance	VIF	Tolerance
X1	≤ 10	≥ 0,10	3,300	0,303

Source: Data processed by researchers, results of data analysis (2023)

4.5.2. Autocorrelation Test

To test whether in a linear regression model there is a correlation between confounding errors in theory t and errors in period t-1 (previously). If correlation occurs, it is called an autocorrelation problem. Of course, a good regression model is one that is free from autocorrelation.

1. *Durbin-Watson test*

Table 5. Durbin-Watson Autocorrelation Test
Model Summary [b]

Variable	R	RSquare	Adjusted R Square	Std. Error ofthe Estimate	Durbin-Watson
1	.939[a]	.881	.861	289.691055	1.093

a Predictors: (Constant), Indirect Spending (million rupiah), Direct Spending (million rupiah)
b Dependent Variable: Gross Regional Domestic Product (PDRB) (million rupiah)
Source: Data processed SPSS version 26 (2023)

In the model summary section in Appendix 1, it is known that the DW figure is + 1.093. For n = 15 and k = 2, then dL = 0.946 and dU = 1.543. Thus it can be stated that there is no decision (table 4.6.1). To find out, use the Run test.

2. *Runs test*

Table 6. Runs Test

	Unstandardized Residual
Test Value[a]	10.51412
Cases < Test Value	7
Cases >= Test Value	8
Total Cases	15
Number of Runs	6
Z	-1.059
Asymp. Sig. (2-tailed)	.290

a. Median
Source: SPSS Regression Results

From table 6, it can be seen that the Z value = -1.059, with a probability of 0.290. The probability value is greater than 0.05, which means that there is no autocorrelation between the errors. So it can be concluded that the model is free from autocorrelation.

3. *Normality Test*

From table 7, a significant Asiymp value is obtained. Sig. (2-tailed) is 0.200, which means it is not smaller than 0.05. So, according to the decision made in the Kolomogrof Sminov normality test above, it can be concluded that the error (residual) data is distributed normally. Thus, the normality assumption in the regression model has been fulfilled.

Table 7. Descriptive Statistic
One-Sample Kolmogorov-Smirnov Test

N		15
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	268.20180167
Most Extreme Differences	Absolute	.160
	Positive	.111
	Negative	-.160
Test Statistic		.160
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Source: Data processed by SPSS version 26 (2023)

4. *Heteroscedasticity Test*

The heteroscedasticity test is used to show the similarity of each residual variation in the observations. A good regression model is one that does not have heteroscedasticity problems or what is known as the model must be heteroscedastic. To be able to show whether there is a heteroscedasticity problem in a regression model, you can look at the scatterplot graph. A regression model is said to be free from heteroscedasticity problems if there is a clear pattern (wavy, expanding, narrowing) and the points spread above and below the number 0 on the Y axis.

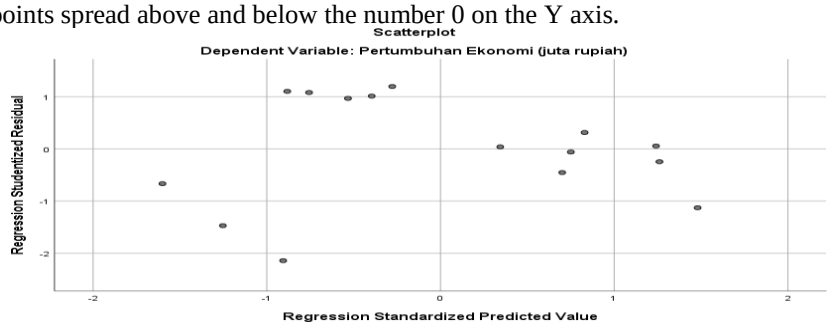

Figure 2. Heteroscedasticity Test Scatterplot Image
Source: Data processed by SPSS version 26 (2023)

In Figure 2, it can be seen that there is no clear pattern in the scatterplot image (widening, widening, narrowing) and the points spread up and down the number 0 on the Y axis. Therefore, it can be concluded that this regression model can be said to be good or heteroscedasticity, in other words, does not experience heteroscedasticity problems.

5. Conclusion

The research conclusion is that simultaneously direct variables and indirect spending together (simultaneously) have a significant effect on GDP in Samosir Regency in 2007 - 2021. Partially, direct spending variables have no influence on GDP in Samosir Regency. The results show that direct spending has a negative and insignificant effect on GDP in Samosir Regency in 2007-2021. Meanwhile, indirect spending has a positive and significant effect on GDP in Samosir Regency in 2007 - 2021. The results of the fourth test show that based on the goodness-of-fit test, the coefficient of determination (R2) is 0.881, which means that the diversity of GDP variables can be explained by direct spending variables, non-direct spending. directly amounting to 88.1% and the remaining 11.9% can be explained outside the model which has not been studied.

The test results are based on the classical assumption test, the regression results show that there are no violations or are free from problems of multicollinearity and autocorrelation, heteroscedasticity so that the model obtained is good for use as a GDP estimate in Samosir Regency.

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