Analysis of the Effect of Domestic Investment, Foreign Investment, Labor and Exports on Economic Growth in North Sumatra

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Abstract:
Background*:Indonesia as a developing country has a character that is not much different from other developing countries. In order to achieve economic growth, Indonesia is faced with limited capital for development investment. Investment is the first step to develop a country. The most important development capital besides investment is human resources. With a large population followed by a high level of education and good skills, it will be able to encourage the rate of economic growth. On the other hand, the relationship between exports and economic growth shows an interesting thing to study.*
Materials and Methods*: In this study, researchers used quantitative data. So the scope of this research is to analyze the influence of Domestic Investment, Foreign Investment, Labor and Exports on Economic Growth in North Sumatra Province. The type of data used in this study according to the source is time series data. The data in this study is in the form of annual data for 31 years (1990 – 2020) and obtained from the Central Bureau of Statistics of North Sumatra, internet searches and related literature.*
Results*: Domestic Investment and Exports have significant positive effect on economic growth in North Sumatra Province. Foreign investment and labor have negative and significant effect on economic growth in North Sumatra Province. The higher the level of Domestic Investment, Foreign Investment and exports will expand the market for a product, increase the country's foreign exchange and create jobs which will indirectly absorb labor, the more people who work will affect the economic growth of the region. Thus, Domestic Investment, Foreign Investment, Labor and Exports have an effect on economic growth in North Sumatra Province.*
Conclusion:*Regional governmentis expected to be able to maintain stability in investment and pay attention to priority sectors to attract domestic investors. Then, regional governmentis expected to increase labor productivity through increasing budget allocations for education in order to improve the quality of the labor, provide skills training for labor and expand job opportunities so that output increases and ultimately accelerates economic growth in North Sumatra.Encouraging exports activities in North Sumatra by reducing the high cost economy, simplifying export document licensing, improving trade sector facilities and infrastructure, facilitating the flow of goods distribution and increasing domestic market security so that economic growth in North Sumatra increases.*
Key Word*:Economic Growth; Domestic Investment; Foreign Investment; Labor; Exports.*

I. Introduction

Every regional economic development effort has the main goal of increasing the number and types of job opportunities for local communities. In an effort to achieve these goals, local governments and their communities must jointly take local development initiatives. Therefore, regional governments and their community participation and by using existing resources must be able to estimate the potential resources needed to design and develop the regional economy (Arsyad, 2004: 298).

Economic growth in an area can indicate how the achievement and economic development in that area. Economic growth in an area can be positive and can also be negative if in a period the economy experiences positive growth, indicating that economic activity in the area has increased. Meanwhile, if in period the economy experiences negative growth, it indicates that economic activity in the area has decreased.

Indonesia as a developing country has a character that is not much different from other developing countries, to achieve Indonesia's economic growth in its development process, it is faced with limited capital for development investment (Mukhlis, 2015:122). Meanwhile, according to (Todaro, 2011: 92) one of the main

components in the economic growth of every country is capital accumulation. Investment is the first step to develop a country. Investment originating from within the country is called Domestic Investment and investment originating from abroad is called Foreign Investment.Both have important and influential roles in economic growth in a country (Dumairy, 1996:30). The condition of investment development in North Sumatra can be seen in Table 1.1 below.

Table 1.1 The growth of Domestic Investment Realization
and Foreign Investment in North Sumatra 2015-2020

Year	Domestic Investment (BillionRp)	Foreign Investment (Million USD)
2015	4.287	1.246,1
2016	4.954	1.014,7
2017	11683	1.514,9
2018	8.371	1.227,6
2019	19.749	379,5
2020	18.189	974,8

Source: the Central Bureau of Statistics of North Sumatra, 2020.

From Table 1.1, it can be seen that the realized value of Domestic Investment during the 2015-2020 period experienced a fluctuating increase and decrease, where the highest investment level was achieved in 2019 which was Rp. 19,749 billion, while from 2015 to 2016 it increased slightly, in 2017 it was Rp. 11,683 billion while in 2018 it fell by Rp. 8,371 Billion.

Likewise, Foreign Investment in North Sumatra experienced an investment peak in 2017 of 1,514.9 million USD and continued to decline from year to year until 2019 but increase in 2020 by 974.8 million USD. In this case, it can be said that the Government of North Sumatra has not tried optimally in terms of attracting investors who can empower the economic potential in the North Sumatra.

The most important development capital besides investment is human resource. Fairly large population followed by high level of education and having good skills, it will be able to encourage the rate of economic growth, because of the large number of productive age population it will be able to increase the number of available labor and in the end will be able to increase output production. In an area, a large workforce will be formed from a large population. To find out more clearly the development of the labor in North Sumatra, it can be seen in the following table:

Table 1.2 The growth of Labor in North Sumatra 2015-2020 (persons)

Year	Working	The Unemployee	Total	Growth (%)
2015	5.962.304	428.794	6.391.098	0%
2016	5.991.229	371.680	6.362.909	0%
2017	6.365.989	377.288	6.743.277	6%
2018	6.728.431	396.027	7.124.458	6%
2019	6.681.224	382.438	7.063.662	-1%
2020	6.842.252	507.805	7.350.057	4%
Mean			6.839.244	2%

Source: the Central Bureau of Statistics of North Sumatra, 2020.

Based on table 1.2 above, it can be seen that during the period 2015 – 2020, from the total labor aged 15 years and over to 64 years old in North Sumatra, who working reached 38.571.429 (persons). In 2017 the number of labor working in North Sumatra increased to 6.365.989 people out of the total labor of 6.743.277 people. In 2018-2020 the number of the labor continues to increase from year to year, the number of labor and those still in the process of looking for work from 2015-2020 reached 59.617.088 people.

In addition to labor in the economy of a region, in general the correlation between exports and economic growth shows an appeal thing to study. Exports are too low, even those at the level of deflation, will suppress economic growth and inflation is too high will also reduce people's purchasing power, resulting in the economy not running as well as expected. On the other hand, economic growth is needed to be able to achieve targets in the development of a country. Therefore, if the economic growth rate is low, economic development targets will be difficult to achieve. The following data we can see to find out the amount of exports value in North Sumatra in 2015-2020.

Table 1.3 North Sumatra Exports Value in 2015–2020.

Year	Exports (USD)
2015	7.752.786
2016	7.770.742
2017	9.225.286
2018	8.787.224
2019	7.678.558
2020	8.086.221

Source: the Central Bureau of Statistics of North Sumatra, 2020.

From Table 1.3, it can be shown exports value in North Sumatra have fluctuated increases and decreases. In 2015 was 7.752.786 USD, in 2016 and 2017 there was an increase of 7.770.742 USD and 9.225.286 USD, while in 2018 and 2019 it decreased by 8.787.224 USD and 7.678.558 USD and again increased of 8.086.221 USD in 2020. It can be concluded the exports value in North Sumatra experienced increase higher in 2017 was 9.225.286 USD and continues setback from year to year. Based on the description above, the writer wants to study further with the title "Analysis of the Effect of Domestic Investment, Foreign Investment, Labor and Exports on Economic Growth in North Sumatra".

II. Material And Methods

In this study, researchers used quantitative data. So the scope of this study is to analyze the effect of Domestic Investment, Foreign Investment, Labor and Export on Economic Growth in North Sumatra. The type of data is time series data, namely data that is chronologically arranged according to time on a certain variable. The data in this study is in the form of annual data for 31 years (1990–2020) and obtained from the Central Bureau Statistics of North Sumatra, internet searches, and related literature.

This study has four independent variables and one dependent variable. The independent variables are Domestic Investment, Foreign Investment, Labor and Exports. The dependent variable is Economic Growth. To explain the measurement of variables in this study, the following definitions are given:

1. Domestic Investment is the entire domestic investment that has been approved and has been realized in North Sumatra Province which is stated in Rupiah (Rp).
2. Foreign Investment is investment made by foreign investors in the form of direct investment that has been realized in North Sumatra Province which is stated in USD.
3. Labor is the number of working age population aged 15 to 64 years who already have a job in North Sumatra Province in units of people.
4. Exports are the total number of exports of goods and services outside the province of North Sumatra. In this study, the source of export data in North Sumatra Province which is stated in USD.
5. Economic Growth is the economic growth rate of North Sumatra Province which is calculated by the rate of economic growth which is stated in Rupiah (Rp).

Data analysis conducted in this study will use the regression equation using the Ordinary Least Square (OLS) regression method with the following formulation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Then the formulation is transformed into logarithmic form with the following equation:

$$\ln Y = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \beta_4 \ln X_4 + e$$

Explanation :

Y : Economic Growth proxied by GRDP based on constant prices (Rp)
X_1 : Domestic Investment (Rp)
X_2 : Foreign Investment (US $)
X_3 : Labor (person)
X_4 : Exports (USD)
β_0 : Constanta
$\beta_{1,2,3,4}$: regression coefficient
e : disturbance error

The accuracy sample regression function in estimating the actual value can be measured from its goodness of fit. Statistically, at least this can be measured from the value of the t-statistic, the value of the F-statistic, the descriptive statistic value and the coefficient of determination.

1. The t-statistic test basically shows how far the influence of one independent variable individually in explaining the variation of the dependent variable.

2. The F-statistical test basically shows whether all the independent variables included in the model have a joint effect on the dependent variable.
3. The coefficient of determination (R^2) essentially measures how far the model's ability to explain the variation of the dependent variable is.

In the use of regression, there are several basic assumptions that can produce an unbiased linear estimator or the best BLUE (Best Linear Unbiased Estimator) from the regression model obtained from the ordinary least squares method or OLS (Ordinary Least Square). With the fulfillment of these assumptions, the results obtained can be more accurate and close to or equal to reality. The classical assumption tests are as follows:

1. The normality test is a test that is carried out to determine whether the research regression model has a normal distribution of residual values or not. Based on the empirical experience of several statisticians, the data with more than 30 numbers (n > 30), can be assumed to be normally distributed.
2. Multicollinearity test aims to determine whether the regression model found a correlation between independent variables. A good regression model should not have a correlation between the independent variables (Gozali, 2001).
3. The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one observation residual to another observation.
4. The autocorrelation test aims to test whether there is a correlation between the confounding error in period t and the confounding error in period t-1 (previous).

III. Result

To determine the effect of each independent variable on the dependent variable partially used the t-statistical test. The t-test was conducted by comparing the t-count value with the t-table value. Where the t-table value is obtained from α ;df (n-k).
Number of observations, n = 31
Number of parameters, k = 5
t-table value = (α = 0,05 : df = 26) = 1.706.
Partial regression test results are as follows:

Table 3.1 Partial Regression Test Results (t-test)

Variable	t-statistic	Probability	t-table
Domestic Investment	2.393041	0.0242	1.706
Foreign Investment	-2.464974	0.0206	1.706
Labor	-3.086327	0.0048	1.706
Exports	2.980640	0.0062	1.706

Source: Data processed with Eviews

Based on the regressionresults, it is obtained that:
1. Domestic Investment has positive effect on economic growth in North Sumatra and is statistically significant, so it can be stated that Domestic Investment has significant effect on economic growth in North Sumatra.
2. Foreign Investment has negative effect on economic growth in North Sumatra and is statistically significant, so it can be stated that Foreign Investment has negative and significant effect on economic growth in North Sumatra.
3. Labor has negative effect on economic growth and is statistically significant, so it can be stated that Labor has negative and significant effect on economic growth in North Sumatra.
4. Exports havepositive effect on economic growth and is statistically significant, so it can be stated that exports have significant effect on economic growth in North Sumatra.

The F-test used to determine the effect of the independent variables simultaneously (simultaneously) on the dependent variable. This test is done by comparing the F-count value with the F-table (α; k-1,n-k).
Number of observations, n = 31
Number of observations, k = 5
Table F value, df = (k–1, n–k) = (5–1, 31–5) = (4,26) , α = 5% → 2.7426

Table 3.2 Simultaneous Regression Test Results (F-test)

F-statistic	4.201155
Prob(F-statistic)	0.009351

Source: Data processed with Eviews

The results obtained from table 3.2 are F-count = 4.201155 > F-table = 2.7426 the decision is the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. So the results of the F-test state that the variables of Domestic Investment, Foreign Investment, Labor, and Exportstogether (simultaneously) have significant effect on economic growth in North Sumatra.

Table 3.3 Determinant Coefficient Value (R^2)

R-squared	0.392589
Adjusted R-squared	0.299141

Source: Data processed with Eviews

Based on table 3.3, the coefficient of determination shows the level/degree of accuracy of the correlation between the independent variable and the dependent variable. From the regression results, the value of R^2 = 0.392589, means that economic growth in North Sumatra can be explained by variations in the model from Domestic Investment, Foreign Investment, Labor and Exports by 39% and the remaining 61% is explained by other variables not included in this study.The classical assumption test intended to detect the presence or absence of multicollinearity, heteroscedasticity, autocorrelation problems and the data in this study is normally distributed or not, because if there is a deviation from the classical assumption, the t-test and F-test previously performed are invalid and statistically can confuse the conclusions reached.

Tabel 3.4 Normality Test with Jarque-BeraTest
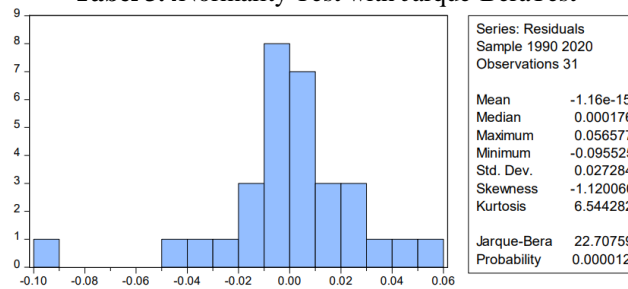
Source: Data processed with Eviews

Based on table 3.4, it can be seen that the Jarque-Bera value is 22.70759 while the value of 2 tables with df = 4 and = 0.05 is 9.488, so the JarqueBera value > X^2 table value (22.70759 > 9.488) and the probability value is 0.00012 < 0.05, then it can be concluded the data used are not normally distributed. Because the data in this study amounted to 30, based on the empirical experience of several statisticians, the data were more than 30 numbers (n > 30), so it can be assumed that the data is normally distributed. Commonly referred to as a large sample.

Table 3.5 Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.071875	38683.84	NA
LOG(Domestic Investment)	3.49E-05	237.5845	4.224561
LOG(Foreign Investment)	3.98E-05	215.2029	3.354935
LOG(Labor)	0.005759	49686.65	5.267808
LOG(Exports)	0.000474	1225.373	6.434401

Source: Data processed with Eviews

Based on table 3.5, the multicollinearity test between the independent variables is known from the value of the Variance Inflation Factor (VIF). The test results obtained the value of VIF centered for Domestic Investment 4.224561; Foreign Investment = 3.354935; Labor = 5.267808; Exports = 6.434401. Because the VIF value of all independent variables is less than 10, there is no multicollinearity in the four independent variables in this study.

Table 3.6 Heteroscedasticity Test Results

Heteroskedasticity Test: Glejser			
F-statistic	1.377751	Prob. F(4,20)	0.2772
Obs*R-squared	5.400616	Prob. Chi-Square(4)	0.2486
Scaled explained SS	6.519091	Prob. Chi-Square(4)	0.1636

Source: Data processed with Eviews

Based on table 3.6, it is known that the heteroscedasticity test was carried out with the GlejserHeteroskedasticity test. The results obtained are the probability value of F(4.20) of 0.2772 which means it is greater than the level of = 0.05 (5%). Thus it is concluded there is a heteroscedasticity problem.

Table 3.7 Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.303171	Prob. F(2,18)	0.7422
Obs*R-squared	0.814699	Prob. Chi-Square(2)	0.6654

Source: Data processed with Eviews

Based on table 3.7, it can be seen the results of autocorrelation test were carried out using the Breusch-Godfrey Serial Correlation LM Test. The result of analysis shows the calculated probability value of F(2.18) is 0.7422 which mean it is greater than the level of = 0.05 (5%). It is concluded there is no autocorrelation.

The Effect of Domestic Investment on Economic Growth in North Sumatra

The significance effect of domestic investment on economic growth in North Sumatra can be seen from the large amount of capital formation, as well as the slight allocation of government spending for consumption compared to capital formation so that the role of domestic investment in economic growth increases. Investment is a determinant of the rate of economic growth, both for domestic investment but for foreign investment, because besides that it will be able to advance an increase in economic growth which can significantly increase input demand, so that in turn it will increase job opportunities and the welfare of the North Sumatra people.

This means here it can be seen the amount of domestic investment who invested the company will be able to increase or decrease the job opportunities which will have an impact on economic growth. The results of this study are supported by research of ArifNurHidayat (2020) which states the influence of Domestic Investment on Lampung's economic growth.

The Effect of Foreign Investment on Economic Growth in North Sumatra

The significant influence of foreign investment on economic growth is determined by foreign investment, because investment is one of the important factors exist to advance a production. The existence of foreign investment in the community will helpful and increase job opportunities, so that people's incomes increase as well as in a wider network which will increase the national income of country. The significance of foreign investment to economic growth in North Sumatra, this is the same as what Mankiw said (2003: 69).

Where when a foreign entity (individual or company) invests in a country the goal is to get a take. Thus, it is explained that foreign investment affects the Gross Regional Domestic Product in different ways. The results of this study are supported by SukandriahSulistiawati's research (2018), which states that foreign investment has a negative and significant effect on economic growth.

The Effect of Labor on Economic Growth in North Sumatra

Labor variable has negative and significant impact on economic growth in North Sumatra. It is known that the labor variable has very large influence on economic growth in North Sumatra, increase the number of labor so far has not been matched by the expansion of job opportunities in North Sumatra, it is possible in North Sumatra unemployment is greater influenced by factors other than the number of people such as the level of job opportunities in various sectors, the lack of information obtained by job seekers, the low level of education, inadequate skills and abilities, coupled with the economic crisis that does not end, results in an increase in the number of unemployed every year.

This is because the labor that is classified into the people working in the economic sector in North Sumatra is a production factor encourage the regional economy, in addition to the large number of labor with high productivity is one of the positive promote in accelerating economic growth in North Sumatra. The results of this study are supported by Alisman (2016)'s research which states the labor has significant negative effect on economic growth.

The Effect of Exports on Economic Growth in North Sumatra

Exports variable have positive and significant effect on economic growth in North Sumatra. This is because the greater the export value of a region, the higher economic activity to be achieved by the region. With export activities in North Sumatra, it is possible to produce various goods and services that exceed the amount of production required for the region itself. In addition, exports activities will also increase the level of economic activity in North Sumatra and the level of regional income will increase so that it can encourage economic growth in North Sumatra. The results of this study also support the findings of previous research,

FerdinanDwiLaksmanaAryatama, WaspodoTjiptoSubroto (2016) which stated exports had significant positive effect on economic growth in East Java in 2001-2014.

The Effect of Domestic Investment, Foreign Investment, Labor and Exports on Economic Growth in North Sumatra

This study aims to determine the simultaneous influence of Domestic Investment, Foreign Investment, Labor and Exports on Economic Growth in North Sumatra Province. From the test result carried out in the study there is significant influence between Domestic Investment, Foreign Investment, Labor and Exports on economic growth in North Sumatra Province. Domestic Investment, Foreign Investment, and Exports in line with the level of national income increase in Investment Domestic capital, foreign investment, and large exports certainly have a positive effect on economic activity.

The higher level of Domestic Investment, Foreign Investment, and Exports, more people who work or create the jobs generate more Labor will affect the economic growth region. Thus, Domestic Investment, Foreign Investment, Labor and Exports have effect on economic growth in North Sumatra Province.

IV. Conclusion

Based on the results and discussion in this study, several conclusions are:
1. Domestic Investment has significant positive effect on economic growth in North Sumatra Province with coefficient value of 0.014141.
2. Foreign Investment has negative and significant effect on economic growth in North Sumatra Province with acoefficient value of -0.015542.
3. Labor has negative and significant effect on economic growth in North Sumatra Province with coefficient value of -0.234219.
4. Exports havesignificant positive effect on economic growth in North Sumatra Province with coefficient value of 0.064922.
5. The research variables of Domestic Investment, Foreign Investment, Labor, and Exports simultaneously affect economic growth in North Sumatra Province.

Based on the results and the conclusions obtained, the suggestions can be given in this study are as follows:
1. Regional government is expected to be able maintaining stability in investment and pay attention to priority sectors to attract domestic investors so that Domestic Investment can increase. Create a conducive climate for investing and the investment process for foreign investors can also be facilitated so that Foreign Investment can expand.
2. Regional government is expected to increase labor productivity through increasing budget allocations for education in order to improve the quality of the labor, provide skills training for labor and expand job opportunities in order tomultiply output and ultimately accelerates economic growth in North Sumatra.
3. Encouraging export activities in North Sumatra by reducing the high cost economy, simplifying export document licensing, improving trade sector facilities and infrastructure, facilitating the flow of goods distribution and domestic market security so that economic growth in North Sumatra mount up.

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