

FACTOR ANALYSIS AFFECTING ECONOMIC GROWTH IN NORTH TAPANULI

PINONDANG NAINGGOLAN¹ and DORTIANA SENILAN SIMANJUNTAK²

^{1,2} Simalungun University, North Tapanuli Regency Government Office.

Abstract

The implementation of public services carried out by the bureaucracy, of course, cannot ignore the demands of the community on the implementation of public services by the government, which prioritizes the principle of legal certainty. The implementation of regional government is based on the principle of autonomy and assistance tasks to realize the welfare of the community through improvement, service, utilization, improvement of regional competitiveness, efficiency, effectiveness, regional diversity, in the implementation of regional autonomy in accordance with democratic principles in the governance system of the Unitary State of the Republic of Indonesia. Specifically at the location of this research, namely the Batam City, an open selection was carried out for candidates for the High Leadership Position within the Batam City Government. The approach method in this paper is a combination of methods between the normative "legal research" approach with the "juridical sociological" empirical approach.

INTRODUCTION

Regional development cannot be separated from the problem of economic growth. The success of a region in the economic sector can be seen from one of its indications, namely economic growth. The higher the economic growth achieved by a region will give the impression that the economy in that area is running well. Regional governments are expected to be able to achieve the expected economic growth by making policies that can support economic growth and are able to create Regional Development which aims to make the community enjoy the results of the development that has been carried out.

It is undeniable that to support the regional development process investment is needed which will lead to the formation of capital for the region. Investment points, both carried out by the government and the private sector, play an important role in regional development. Private investment is urgently needed as a consequence of the limited budgets owned by the regions in implementing development program.

The local government must have precise methods and tactics in meeting these needs. Likewise, North Tapanuli Regency as one of the local governments in North Sumatra Province which relies more on the agricultural and trade sectors requires a sizable investment that is impossible to fulfill if it only relies on government investment. .

Formulation of the problem

The formulation of the problem in this study are:

1. What are the factors that influence the economic growth of North Tapanuli Regency in the 2013-2019 period.

2. extent do these factors affect the economic growth of North Tapanuli Regency in the 2013-2019 period (deterministic analysis).

Research purposes

What factors influenced economic growth in North Tapanuli Regency during the 2013-2019 period and the objectives to be achieved from this study were:

1. To analyze the factors that influence the economic growth of North Tapanuli Regency in the 2013-2019 period.
2. To analyze the extent to which these factors affect the economic growth of North Tapanuli Regency in the 2013-2019 period (deterministic analysis).

LITERATURE REVIEW

Economic growth

Economic growth in a nutshell is a process of increasing per capita production or income output in the long term. The point of understanding emphasizes three things, namely: process, per capita output and long term. the process describes the development of the economy from time to time which is more dynamic in nature, per capita output relates the total output aspect of GDP and the aspect of population while the long term shows the trend of economic change in a certain period which is driven by internal economic processes. Economic growth is also interpreted simply as an increase in the output of total gross domestic product in the long term regardless of whether the increase is smaller or greater than the rate of population growth or whether it is followed by changes in the structure of the economy or not. Even so, the form of economic growth does not reflect the prosperity of a country, therefore it is necessary to measure the level of growth using the Gross Domestic Product per capita so that it does not only measure the increase in Gross Domestic Product but also the increase in population (Todaro 2006).

Investment Theory

Investment is the element of GDP that changes the most frequently second when spending on goods and services falls during the risk of most of the decline associated with the fall in investment spending in 2002 one of the opposing components that determine development is point capital formation according to Van Den Berg (2001), the process Capital formation goes through three levels, namely (1) an increase in the volume of real savings that depends on the willingness and ability to save (2) the existence of credit and financial institutions to promote and channel savings so that they can be converted into investment funds, (3) the use of savings for investment purposes company capital goods.

Foreign Capital Inflow (Capital Inflow)

Each capital flow Capital inflow is the entry of a number of foreign funds into a country for investment purposes. Paul R. Krugman and Maurice Obstfeld (1994: 29), Capital inflow is a transaction of selling assets to foreign countries because selling assets to foreigners will get

funds from foreign countries and these foreign countries will acquire assets. Foreign capital inflow Capital inflow can occur in the form of direct investment foreign direct investment portfolio investment portfolio investment. Direct investment direct investment is an investment made directly or real, for example building a factory building and with a long term. Portfolio investments are investments made indirectly but in the form of financial assets

Foreign Capital Outflow

Paul r. Brugman and Maurice Obstfeld (1994: 29), Capital outflow is an asset purchase transaction from abroad. The point of purchase of foreign country assets will go out to pay for the purchase of these assets. The point of foreign capital outflow. Capital outflow is the outflow of funds or capital from within the country to abroad, both directly direct investment or indirectly indirect investment point in the short term can also be defined as capital or capital flight.

Labor Force and Economic Growth

According to (Todaro 2000) population growth and labor force growth have traditionally been considered one of the positive factors that spur economic growth. a larger number of workers means that it will increase the level of production while greater population growth means a larger size of the domestic market. Even so, it is still questionable whether it is true that the rapid rate of population growth will actually have positive and negative impacts on economic development.

Government Spending and Economic Growth

Government expenditure is a set of products produced which includes choices or decisions made by the government to provide public goods and services to the community. Total government spending is the sum total of budget decisions at each level of central government Provinces Regions point at each level within this government can have a different final decision-making process and only a few things the lower government can be influenced by the higher government. (Lee Robert, Jr. and Ronald W. Johnson 1998). Therefore, in understanding the various funding arrangements for the central government, one must know the various functions assigned to them.

According to Arndt (1998) the argument about public policy in relation to government expenditure policies is based on the situation that the market cannot move on its own to activate the mobilization of economic activity, especially to achieve efficiency.

Human Development Index

According to BPS UNDP (2004), the human development index is a composite index that is calculated as a simple average of 3 indices that describe basic human abilities in expanding choices, namely:

1. Life expectancy index
2. education index
3. decent standard of living index

RESEARCH METHODS

Object of research

This research was conducted in North Tapanuli Regency where North Tapanuli Regency is in one of the areas in North Sumatra Province which is located in the North Sumatra Highlands region.

Research design

The method used in this study is a descriptive and quantitative approach. The purpose of this method is to provide an overview of examining and empirically testing the existence of a theory of the variables that have been formulated in a thesis calculation which will then be analyzed for the influence or relationship between these variables based on empirical data using the explanatory research method.

The analysis technique used is time series data with the Ordinary Least Square method. This research uses secondary data in the form of time series data in North Tapanuli Regency. This study limits the analysis of the variable capital expenditure or government investment. The number of labor force. Consumption (Gross Regional Domestic Product expenditure), human development index, bank credit and interest rates on factors of economic growth in general in North Tapanuli Regency.

Data collection technique

In the research data was collected through library research activities from various sources. Meanwhile, to find a factual description, it starts with conducting a literature study and reviewing related research results so that a clear and comprehensive picture of the object and analysis will be carried out. The point of data processing is carried out using a computer software package, namely MS Excel and Eviews 6, especially for the purposes model estimation and testing.

RESULTS AND DISCUSSION

Qualitative Analysis

In this section, a brief description of the variables used in this study will be described during the 1959-2016 period. These variables include: economic growth consumption (expenditure), labor force, capital expenditures (government investment), HDI human development index, and bank credit and bank interest rates.

North Tapanuli Regency economic growth

Economic growth is one measure of the results of development carried out, especially in the economic field. This growth illustrates the level of economic development where economic growth points occur in detail from year to year, presented through gross domestic product at constant prices according to business sector on a regular basis. if there is positive growth at the same time this indicates an increase in the economy compared to the previous year. Conversely, if it shows negative, this indicates a decline in the economy compared to last year.

Economic structure of North Tapanuli Regency is dominated by four main sectors namely:

1. agriculture, forestry and fisheries sector by 51%
2. car or motorcycle repair wholesale and retail trade sector by 12%
3. defense government administration sector and social security by 10%
4. sector by 10%.

The contribution of these 4 sectors exceeds 75% of the total Gross Regional Domestic Product. From this description, these sectors are the main drivers of the economy of North Tapanuli Regency and will become a priority in formulating economic development policies for North Tapanuli Regency.

During the period 1959 to 2016, the economic growth of North Tapanuli Regency experienced an average growth rate of 4.71% per year. The highest economic growth occurred in 2007, namely 6.03% and the lowest was in 1999, namely 2.43%. This condition was caused by the crisis that occurred in Indonesia, which occurred in 1998 where it was difficult for North Tapanuli Regency to rise from the downturn in the national economy at that time.

Consumption (Gross Regional Domestic Product Expenditure) of North Tapanuli Regency

The components of Gross Regional Domestic Product expenditure according to BPS consist of:

1. Household consumption expenditure

Household consumption expenditure is household expenditure on goods and services for consumption purposes. households in this case function as final consumers with various types of goods and services available and household consumption expenditures include household consumption expenditures on goods and services either by buying, receiving transfers or producing themselves with the aim of being consumed or not processed. Furthermore. Household consumption expenditure includes all consumption expenditures on goods and services by residents of a region, both inside and outside the area concerned.

2. LNPRT Consumption Expenditures

Government consumption expenditure is defined as the total amount of government expenditure issued to finance its activities, which consists of purchasing goods and services (goods spending), payment of employee benefits (personnel spending), and depreciation of capital goods, reduced by the proceeds from the sale of goods and services (output). market government that cannot be separated from government activities (which are not consumed by the government). Government consumption is also known as government non-market output.

In general, expenditure or consumption is North Tapanuli Regency in the period 2013-2019 tends to rise with an average increase of 15.38 %.

Total Work Force

The work force or labor force is the total population of productive age, namely 15-64 years who are working or looking for work. The productive age point can be classified into two, namely:

1. Not the labor force

Non-labor force is the population of productive age who are not willing to work or have not yet worked. For example, students who are still in school

2. workforce

The labor force is the population of productive age who already have a job or are looking for work.

According to Jingan (2004, p.14) labor is an input or factor of production that is used in the process of increasing economic growth at the point where labor plays a major role in production, because capital goods originating from investment can only be utilized if there is labor. By increasing the number of workers involved in the process of increasing economic growth, where labor will increase the amount of goods and services produced. However, economic growth does not solely depend on the number of workers but places more emphasis on labor productivity.

Labor productivity is influenced by several factors both related to the workforce itself, as well as those related to the environment and government policies.

Capital Expenditure (Government Investment)

According to Mankiw (2006, H. 29) capital expenditure (government investment) is a budget allocation that is prepared in the state revenue and expenditure budget.

Fixed assets owned as a result of capital expenditures are the main prerequisite in providing public services by the regional government. To add to fixed assets, the local government allocates funds in the form of a capital expenditure budget in the Regional Expenditures Revenue Budget. Infrastructure, both for the smooth implementation of government tasks and for public facilities, usually the regional government procures fixed assets every year in accordance with budget priorities and public services that have a long-term impact financially.

Capital expenditure is intended to obtain local government fixed assets, namely infrastructure development equipment, and other fixed assets. But for cases in the government what is done is by buying. The purchasing process is generally carried out through a fairly complicated auction or tender process. The allocation of capital expenditures based on needs means that not all work units or organizational units in the regional government carry out fixed asset procurement activities or projects. In accordance with the main tasks and functions (tupoksi) of each work unit, there are work units that provide public services in the form of providing physical facilities and infrastructure such as education, school buildings, laboratory equipment, R cars, medical equipment to hospitals, highway ambulances and temporary bridges. Other work units only provide direct services in the form of administrative services or Civil Registry

making population identity cards securing empowerment, health services and education services. In principle, the allocation of capital expenditure is made to produce fixed assets belonging to the regional government that are in accordance with the needs of the local government and or the community in the area concerned. In the perspective of participatory unemployment, community involvement is expected to provide important input in choosing fixed assets to be obtained from the implementation of the capital expenditure budget. Provision of public facilities in accordance with public needs is a necessity for Rama, not an option.

Developments in government spending, in this case capital expenditures, were reduced to the 2013-2019 regional expenditure revenue budget appears to fluctuate, this is due to dependence on sources of financing for capital expenditures that still depend on transfer funds from the center, so that the financial condition of the central government greatly influences capital expenditure programs in districts or cities and provinces.

Human Development Index

Based on BPS calculations, the Human Development Index for North Tapanuli Regency tends to remain in position 103 nationally in the 2013-2019 period, which averaged 0.72 during that period and was above the national average of 0.7. This shows that the quantity of human development in North Tapanuli Regency is better than most other districts or cities but this condition is reflected when translated to the regional level in North Sumatra Province. The human development index in North Tapanuli Regency for the period 2013-2019 tends to increase very small.

Banking Credit

Credit is a source of financing for the real sector. Credit extended by banks consists of several types. Based on the business sector served, the types of credit consist of: the agricultural sector, the mining sector, the industrial sector, the service sector, the commander of other sectors.

Loan distribution shows an increasing trend every year in the period 1999 -2016, the highest increase in credit distribution occurred in 2016 and the lowest was in 2003.

Interest Rates

Interest is a form of income or income for the owner of the fund who has sacrificed his funds for a number of occasions not to use the funds because they are being used by other parties. The development of banking interest rates, which in this case refers to the interest rates of Indonesian banks in North Tapanuli Regency, 1999 -2016. The interest rate in North Tapanuli Regency which refers to Indonesian ethnicity shows that every year in the period 1999 -2016 the highest interest rate in 1999 was 16.59%, this shows the difficulty of banks to channel credit due to the post-crisis that occurred resulting in a large business climate, it will be difficult to rise from adversity due to the unavailability of funds to borrow, but in the future, interest rates will decrease every year, this indicates that the level of the economy is increasingly excited due to the availability of funds, both said by the public and channeled back in the form of credit to society.

Quantitative Analysis

In this section, the results of the Declaration will be discussed which are used to determine the effect of the independent variables, namely consumption (Gross Regional Domestic Product expenditure), total workforce, government spending (capital expenditure), the total human development index, bank credit and interest rates on economic growth.

Multiple Regression Analysis

Regression analysis of the effect of the number of labor force, consumption (Gross Regional Domestic Product expenditure) capital expenditure (government investment), human development index of bank credit and interest rates on economic growth of North Tapanuli Regency during the period 1999 to 2016 was carried out by the method (Ordinary least Square) which uses Time Series data for 18 years in North Tapanuli Regency. The regression results are like the table below:

Table 1: Regression Results of the Economic Growth Equation

Variable	Coefficient	Std. Error	Statistic	Prob
Constants	-2.0077281	1.101778	-1.8222620	0.0957
Labor force	0.4583750	0.239521	1.9137110	0.0820
Consumption (GRDP Expenditures)	-0.2621720	0.059272	-4.4232020	0.0010
Capital Expenditures	0.0950740	0.033123	2.8703170	0.0152
Human Development Index	0.7919550	0.276150	2.8678420	0.0153
Banking Credit	-0.0806130	0.076614	-1.0521980	0.3153
Interest Rate	0.434187	0.207645	2.0910100	0.0605
R-squared	0.919046	Mean dependent	0.665222	
Adjusted R-squared	0.874889	SD dependent var	0.087251	
SE of regression	0.030862	Akaike info criterion	-3.833310	
Sum Squared	residence 0.010477	Schwarz Criterion	-3.487054	
Log likelihood	41.49979	Hannan-Quinn criter	-3.785566	
F-statistic	20.81325	Durbin-Watson stat	1.660718	
Prob (F-statistic)	0.000021			

Source: Regression Test Results

From the regression results in table 1 above, the regression equation (based on the OLS coefficient value) is obtained as follows:

$$Y = -2.0077 + 0.4583 X1 - 0.2621 X2 + 0.0950 X3 + 0.7919 X4 - 0.0806 X5 + 0.4341 X6$$

Where:

Y = Economic Growth

X1 = Labor Force

X2 = Consumption (GRDP Expenditures)

X3 = Capital Expenditures

X4 = Human Development Index

X5 = Banking Credit

X6 = Interest Rate

From the results of the regression equation model in this study, it can be seen that the variables that most influenced economic growth in North Tapanuli Regency in the period 1999 -2016 were the human development index variables (IPM) and the workforce. This is in line with the theory which states that invested investment will yield, if it is supported by the availability of the workforce which is supported by a high human development index point. In addition, from the results of the regression equation model of this study it can also be seen that the effect test can be shown by the test results partial t and regression equation models. It is said that a predictor of X partially or by paying attention to other predictors has an influence on the dependent variable, so that from these results it can be concluded that:

1. variables partially have a positive influence in determining the magnitude of changes in economic growth in North Tapanuli Regency during the 2013-2019 ceteris paribus period.
2. while the consumption variable (GRDP expenditure) has a negative influence in determining the magnitude of changes in economic growth in North Tapanuli district during the 2013-2019 period, ceteris paribus.
3. variable partially has a positive influence in determining the amount of economic growth in North Tapanuli Regency during the 2013-2019 ceteris paribus period.
4. variable partially has a positive influence in determining the amount of economic growth in North Tapanuli Regency during the period 1959-2016, ceteris paribus.
5. banking credit variables have a negative influence in determining the amount of economic growth in North Tapanuli Regency during the period 1959 -2016, ceteris paribus
6. the banking interest rate variable partially has a positive influence in determining the amount of economic growth in North Tapanuli Regency during the period 1999-2016, ceteris paribus.

Hypothesis Test

t-test

Based on table 1 above, from the results of the regression equation model in this study it is also known that the hypothesis test can be concluded that:

1. for the labor force variable X1 it turns out t count = 0.458 three with a significance of 0.0820 so it can be concluded that the X1 variable has a significant effect at the 10% level on economic growth in North Tapanuli Regency.
2. for the consumption variable (x2), it turns out that the t-count is equal to the line 0.2621 with a significance of 0.0010 so it can be concluded that the variable (x2) has a significant effect at the 5% level on economic growth in North Tapanuli Regency.

3. for the capital expenditure variable (x3), it turns out that the t-count is equal to, 0.0950 with a significance of 0.0152 so it can be concluded that the variable X3 has a significant effect at the 5% level on economic growth in North Tapanuli Regency.
4. for the HDI variable (x4) it turns out that t-count = 0.7919 with a significance of 0.0153 so it can be concluded that the variable (x4) has a significant effect at the 5% level on economic growth in North Tapanuli Regency.
5. for the banking credit variable (X5) it turns out that t-count = -0.0806 with a high frequency of 0.3153 so it can be concluded that the variable (X5) has no significant effect on economic growth in North Tapanuli Regency. for the interest rate variable (X6) it turns out t-count = 0.4341 with a significance of 0.0605 so it can be concluded that the variable (x6) has a significant effect at the 10% level on economic growth in North Tapanuli Regency.

F test

The hypothesis test used in this study was a simultaneous test based on the F ANOVA (Analysis of variance) test value by looking at the calculated F value, namely: Prob (F-statistic) of 0.000021 then compared with F table. If $f \text{ count} > F \text{ table}$ or you can look at the P value of the F test if the p value of the F test < 0.05 then simultaneously all independent variables (Y). Value value or Prob (F-statistics). $0.000021 < 0.05$ then H1 or which means simultaneously all the independent variables (predictors) have a significant influence on the dependent variable (Y). This result is used to answer the hypothesis that has been built, namely if the p-value test $F < 0.05$, then H1 is accepted and Ho is rejected.

Determination Test (R^2)

Testing the coefficient of determination (R^2) is carried out to measure the goodness of fit (Goodness of Fit) of the regression equation, which gives the proportion or percentage of the total variation in the dependent variable explained by the independent variables. The magnitude of R^2 is between $0 < R^2 < 1$, where if R^2 gets closer to 1, then a model is said to be good, because the higher the dependent variable which is explained by the independent variable. Based on the estimation results on the economic growth model, the R^2 value is 0.919046 this indicates that 91.90% of changes in the dependent variable can be explained by the independent variables, the remaining 8.10% is explained by other factors not included in the capital equation.

Econometric Criteria Testing

Classic Test

a. Autocorrelation Test

The autocorrelation test that will be used in this study is the Durbin Watson autocorrelation test. As explained in chapter 3, that the Durbin-Watson test is carried out to identify autocorrelation problems between independent variables with the condition that if $DW > DU$ and $(4-DW) > DU$, then there is no autocorrelation problem, either positive or negative autocorrelation. The Durbin-Watson test was carried out using the Eviews program software

tool. Based on the results obtained in the Durbin-Watson test, the Durbin Watson DW value: $1.660718 < DU$ but $> DL$ and $(4-DW) > DU$, the autocorrelation is doubtful. Therefore it needs to be confirmed by serial correlation test. DU in the Durbin Watson table $t = 18$ (number of samples) and $k = 7$ (number of independent variables + one). These results indicate a dubious Durbin-Watson test, so the test is continued with a serial correlation test.

b. Residual Normality Test

There are many kinds of normality tests, including: liliefors, Kolmogorov Smirnov, and Shapiro Wilk and Shapiro Francia, skewness kurtosis, Jarque-Bera and others. In this eviws application, the normality test that we can do is use the jarque-bera method. Following are the results of the residual normality test using the Jarque Bera test from the eviws regression results.

c. Heteroscedasticity Testing

According to Gujarati (2006), that heteroscedasticity shows a variant that is not constant from the disturbance variable. Testing can be done with various tests, including the Park test or the White test. In this study, the quantitative analysis technique used was data using the OLS (Ordinary Least Squares) method and according to Widarjono (2005) the test that is often used in this method is the white with poster method, namely by reacting the independent variable squared of the independent variable and the multiplication result between independent variables with the residual square. It is said that there are no symptoms of heteroscedasticity If all Sig. partial $t > 0.05$ and the P value of the F test > 0.05 or based on the Obs* R-Square value, if the p value Obs*R-squared > 0.05 then the model is homoscedastic, then heteroscedasticity is free.

From the regression results with eviws, the following results can be presented in the table below.

Table 2: Heteroscedasticity test results with the white test method

Heteroskedasticity Test: White			
F-statistics	0.594564	Prob. F (6 .11)	0.7294
Obs*R-squad	4.407993	Prob. Chi -Square (6)	0.6216
Scaled explained SS	2.366846	Prob. Chi -Square (6)	0.8831

Source: Results of the White Heteroskedasticity Test

From the table above it can be seen that, there are no symptoms of heteroscedasticity, because all Sig. partial $t > 0.05$ and p test value f: $0.5945 > 0.05$ or Obs*R-squared: 4.407993 with p value or Prob. Chi-square (6): $0.62216 > 0.05$. Or there is no heteroscedasticity.

d. Serial correlation test using the Berusch-Godfrey serial correlation LM test method

This test can also be carried out with the eviws application and the results in this study can be seen in the table below.

**Table 3: Serial correlation test results using the Breusch-Godfrey Serial method
Correlation LM Test**

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.797370	Prob. F (2, 9)	0.4799
Obs*R-squared	2.709395	Prob. Chi -Square (2)	0.2580

Source: Serial Correlation Test Results using the Breusch-Godfrey Serial Correlation LM Test method

From the table above it can be seen that there is no serial correlation where the value of Obs* R-squared: 2.709395 with a p value or Prob. Chi-Squared (2): 0.2580 > 0.05.

e. Multicollinearity Testing

Multicollinearity testing is carried out using the variance inflation factor (VIF) indicator. To see whether the level of collinearity is high or not, you can look at the value (VIF) (Gujarati.2006), which is formulated $VIF = 1 / (1 - R^2)$ with the following conditions:

$1 - R^2$

- $0 < VIF < 10$, there is no multicollinearity
- $VIF > 10$, there is multicollinearity.

The results of the multicollinearity test for the model are presented in table 4.3 below :

Table 4 : Multicollinearity Test Results with VIF

VIF	Variable	Conclusion
2.226896	Labour Force	There is no multicollinearity
3.433474	Consumption (GRDP Expenditure)	There is no multicollinearity
2.466696	Capital Expenditure	There is no multicollinearity
2.797183	Human Development Index	There is no multicollinearity
4.514193	Banking Credit	There is no multicollinearity
2.844649	Interest Rate	There is no multicollinearity

Source: Multicollinearity Test Results with VIF Indicators

From table 3 it is found that the VIF values for all dimensions are below 10. Thus there are no symptoms of multicollinearity between the independent variables in the model.

f. Linearity Testing

According to Gujarati (2006), that the goal of linearity is to form a new model and is BLUE (Best Linear Unbiased Estimation), then this test must be carried out, this can be done with the Ramsey reset test and the results obtained in this study are presented as follows:

Table 5: Linearity Test Results with the Ramsey Test
Ramsey RESET Test

	Value	df	Probability
t-statistics	0.512020	10	0.6198
F-statistic	0.262164	(1, 10)	0.6198
Likelihood ratio	0.465816	1	0.4949
R-squared	0.921114	Mean dependent var	0.665222
Adjusted R-squared	0.865894	S.D. dependent var	0.087251
S.E. of regression	0.031952	Akaike info criterion	-3.748077
Sum squared resid	0.010209	Schwarz criterion	-3.352357
Log likelihood	41.73270	Hannan-Quinn criter	-3.693513
F-statistic	16.68075	Durbin-Watson stat	1.655731
Prob (F-statistic)	0.000091		

Source: Linearity Test Results based on the Ramsey reset test

From the table above it can be seen that the F - statistic value: 0.262164 at DF (1,10) with a p value: 0.000091 <0.05, so there is no linearity between the independent variable and the dependent variable.

From the results above, it can be concluded that there are no problems with violations of autocorrelation, residual normality, heteroscedasticity, serial correlation, multicollinearity and linearity, thus it is declared BLUE (Best Linear Unbiased Estimation).

Based on the estimation results on the economic growth model, the value (R^2) is 0.919046, this indicates that 91.90 % of changes in the dependent variable can be explained by independent variables, the remaining 8.10% is explained by other factors not included in the in the equation model.

DISCUSSION

From the regression results using OLS in table 4, the partial coefficient test results are obtained by using the t test, this can be explained as follows:

1. Whereas **the Work Force** has a positive effect on economic growth with a regression coefficient of 0.458375. These results provide an explanation, that every one percent increase in the workforce, will increase economic growth by 0.458375% (ceteris paribus). The results of this study are in line with the findings of Yunan (2009) in North Sumatra, that labor influences economic growth in Indonesia mainly due to the position of labor as one of the factors of production that drives the economy in the regions. Apart from being a factor of production, productive labor is also a source of local revenue from the tax sector and is a consumer.
2. Meanwhile , **consumption** has a negative effect on economic growth with a regression coefficient of -0.262172 . These results provide an explanation that, an increase of 1% in consumption will lead to economic growth of 0.26172% (ceteris paribus). only a small portion of the potential for expenditure is used in the North Tapanuli district or household and private sector consumption constitutes a very small share of expenditure by the government.
3. For government **capital expenditure** or investment, it has a positive effect on economic growth, with a regression coefficient of 0.095074. These results provide an explanation that, a 1% increase in capital expenditure will increase economic growth by 0.0957.4 % (ceteris paribus). these results are in line with research conducted by Deddy Rustianto (2008) in the provinces of Central Java and Yunan (2009) in North Sumatra. From the estimation results it is known that capital expenditure (government investment) has a positive and significant effect on economic growth. Government spending is intended so that the implementation of public services provided by the government and development can take place as planned. government spending on development aims to make it easy economy can develop by increasing the development of facilities and infrastructure carried out by the government. The point is that the construction of facilities and infrastructure by the government can directly affect the economy of a region and provide a multiplier effect. The community's economy because it will provide long-term employment and income to the community.
4. **The human development index** has a positive effect on economic growth, with a regression coefficient of 0.791955. These results provide an explanation that, a 1% increase in the human development index will increase economic growth by 0.791955 % (ceteris paribus). these results are in line with research conducted by Ranis, G., Stewart, F., and Ramirez, A (2000), where the study concluded that economic growth has a reciprocal relationship with human development, being the cause of differences in human development performance even though the level of performance the economy is equal.

The second path is from human development to economic growth. a high level of human development will affect the economy through increasing the capacity of the population and consequently also on their productivity and creativity. Education and health of the population determine the ability to absorb and manage sources of economic growth both in terms of technology and institutions that are important for economic growth.

1. While **bank credit** has a negative effect on economic growth, with a regression coefficient of -0.080613 this point explains that a point increase of 1% of banking products will reduce economic growth by 0.0 8613% (ceteris paribus), this negative effect can be explained whereas the disbursement of bank credit is still taken into account for activities that are consumptive in nature, not investment activities, such as activities aimed at increasing the economic level of the community, so that it can be explained that this does not have a direct relationship with economic growth.
2. The **interest rate has a** positive effect on economic growth with a regression coefficient of 0.434187. These results provide an explanation that the same 1% increase in interest rates will increase economic growth by 0.434187% (ceteris paribus). these results are in line with research conducted by Syahril Nasution 2015 in West Kalimantan Province.

The main factors that affect the size of the determination of interest rates are as follows:

- Funding needs
- Competition
- Government policy
- Desired profit target
- Time period

Vice versa if the loan is short term, the interest is relatively lower:

- Guarantee quality
- Company reputation
- Competitive product
- Good relationship

Policy implications and solutions to problems

Seeing the role of the number of labor force, consumption, capital spending as government investment, the human development index, bank credit and interest rates in North Tapanuli Regency on economic growth in North Tapanuli Regency during the 2013-2019 period which mostly had a positive effect, for this reason a policy of increasing to further support increased growth, this can be realized with government programs that focus more on people's welfare, ease of credit for small and medium enterprises that take into account banking interest rates and human development.

To support the policy of increasing economic growth in North Tapanuli Regency to further encourage community welfare, it is hoped that later it will be able to solve the problems of

economic growth in North Tapanuli Regency, so that real and consistent action is needed from various parties, especially the government and the people in North Tapanuli Regency who are related with policies in the following matters:

1. Increasing employment to increase employment opportunities for the workforce group in North Tapanuli Regency. This can be done with programs for workers for activities sourced from REGIONAL EXPENDITURE REVENUE BUDGET and APBN.
2. Increase public consumption in the North Tapanuli district by conducting market operations so that affordable prices maintain the stability of public consumption or in other words encourage people's purchasing power in terms of increasing consumption.
3. Increasing the allocation of government investment for the capital expenditure budget which is programmed in the REGIONAL EXPENDITURE REVENUE BUDGET for North Tapanuli Regency to increase in the coming years. In this case, investment is in the form of infrastructure and also supports the smooth accessibility of the economy.
4. Paying attention to human development as one of the factors driving economic growth in North Tapanuli Regency by increasing development spending which directly supports health education programs and people's purchasing power.
5. Encouraging the disbursement of public credit by both financial and banking institutions, but still pay attention to the flexibility of credit intended to be more directed towards business credit, not for consumptive loans.
6. Maintaining the stability of bank interest rates, especially business loan interest rates, this needs to be done as a stimulus for public loans as one of the factors driving economic growth in the banking sector.

CONCLUSION

The purpose of this research is to analyze the factors that influence economic growth. Based on the estimation results of the equation model it can be concluded that:

1. Based on the results of this study, in accordance with the research methodology which limits the understanding of the analysis of independent variables that there are 6 factors that influence economic growth in North Tapanuli Regency for the 2013-2019 period, namely the number of workforce, consumption expenditure (GRDP expenditure), government investment (capital spending), human development index, bank credit and interest rates.
2. In accordance with the results of the regression and tests carried out in this study, it can be concluded to what extent these factors influence financial economic growth as follows:
 - A. The number of workforce has a positive influence on economic growth in North Tapanuli Regency, the ease of getting work, both the formal and informal sectors will further encourage economic growth in the future

- B. Consumption has a negative relationship with economic growth, this means that spending by the public has not been able to drive the pace of economic growth because it is likely due to more public consumption occurring outside North Tapanuli Regency.
- C. Capital expenditure for the Government of North Tapanuli Regency as a government investment property has a positive effect on economic growth, how can the allocation of capital expenditure be more focused on the infrastructure spending sector to encourage accessibility in the economy in North Tapanuli Regency and the construction of infrastructure facilities that support human development.
- D. The human development index in North Tapanuli Regency has a positive effect on economic growth where the index is built from the education index, health index and purchasing power index in North Tapanuli Regency.
- E. Bank credit has a negative relationship with economic growth, this means that credit extended by banks to borrowers has not been able to drive the rate of economic growth, possibly because credit by the public is consumptive in nature not for businesses that can promote economic growth.
- F. The interest rate has a positive effect on economic growth, where the interest rate is a driving factor for doing business on funds provided to the public.

Bibliography

- ❖ ADB. 1997. *Emerging Asia : Changes and Challenges* . Manila : Asian Development Bank
- ❖ Adisasmita, Rahardjo. 2013. *Theories of economic development* , Yogyakarta: Graha Ilm
- ❖ Arsyad, Lincoln. 2010. *Development Economics 5th edition* . Yogyakarta: UPP STIM YKPN
- ❖ Barro, RJ 1991. Economic growth in a cross section of countries. *The Quarterly Journal of Economics*, 106(2): 407.
- ❖ BPS, North Tapanuli. 2000-2016. *North Tapanuli in Figures 1997-2016* . Tarutung.
- ❖ Boediono. 1982. *Economic Growth Theory* . First Edition. BPFE-UGM. Yogyakarta.
- ❖ Budi Untung, 2000, *Banking Credit in Indonesia* , publisher Andi, Yogyakarta 2000
- ❖ Dendawijaya, L, 2000 *Fundamentals of Banking Jakarta: GHALIA Pustaka*
- ❖ Dumairy. 1996. *The Indonesian Economy*. Jakarta : Erlangga Publisher.
- ❖ Gujarati, D. 2006. *Fundamentals of Econometrics* . Erlangga. Jakarta
- ❖ Hady, Hamdy. 2001. *International Economics : International Financial Theory and Policy* , Jakarta: Ghalia Indonesia.
- ❖ Jhiangan, M. 2008. *Development Economics and Planning* . Jakarta : PT Raja Grafindo Persada, Jakarta.
- ❖ Krugman, Paul R & Maurice Obstfeld, 1996. *International Economics : Theory and Policy* , Jakarta: PT Raja Grafindo Persada
- ❖ Kurnia Astuti, Budiono Sri Handoko. 2007. *Analysis of Economic Growth, Needs Investment and Absorption of Labor in Sleman Regency* . *Journal of Economics & Business*. Vol. 1, No. 3, Nov. 2007.
- ❖ Lincoline Arshad. 1993. *Development Economics* . Second Edition. STIE-YKPN. Yogyakarta.

- ❖ Lincoline Arshad. 1999. Development Economics . Fourth Edition. STIE-YKPN.
- ❖ Mangkosesoebroto, Guritno. 2001. Public Economics . Yogyakarta: BPFE.
- ❖ Mankiw, N. Gregory. , Euston Quah., PETER Wilson. 2012. Introduction to Macroeconomics. Principles Of Economics An Asian Edition-volume 2 . Jakarta : Salemba four.
- ❖ Mankiw, Gregory N. 2002. Macroeconomic Theory. Fifth Edition . ERLANGGA. Jakarta.
- ❖ Mohammed. Rizal Mubaroq, 2013 THE EFFECT OF GOVERNMENT INVESTMENT, LABOR AND PHYSICAL DECENTRALIZATION ON ECONOMIC GROWTH DI DISTRICT INDONESIA, 2007-2010 , Department of Economics, Padjadjaran University, Bandung.
- ❖ M. Suparmoko. 1991. Introduction to Macroeconomics . Second Edition. BPFE-UGM. Yogyakarta
- ❖ Musgrave, RA 1959. The Theory of Public Finance : McGraw-Hill.
- ❖ Nasution Syahrizal, Effect of inflation, investment and interest rates on growth Economics in West Kalimantan , 2015, Curvanomic Journal Vol 4, Number 4 of 2015. Accessed from <http://jurnal.untan.ac.id/index.php/jcc/article/view/12033> .
- ❖ Novia Hadhi Ali, Deasy Engka and Steeva. 2012. The Effect of Consumption and Investment Expenditures Government on Economic Growth in the city of Manado . Journal Accessed from <http://ejournal.unsrat.ac.id/index.php/jbie/article/download/5652/5184> on 30 January 2018 at 11.26 WIB.
- ❖ Pratama Heru Kuspriyadi. 2004. Investment analysis and the factors that influence it (Case Study in Central Java). Postgraduate Program Master's Thesis. Diponegoro University. Semarang (unpublished)
- ❖ Rahayu, Sri Endang. 2011. Analysis of the Effect of Government Spending on Growth Economy in North Sumatra . Journal. Accessed from http://jurnal.umsu.ac.id/index.php/mbisnis/article/view/133/pdf_29 on January 30 2018 at 21.49 WIB.
- ❖ Ranis, G., Stewart, F., & Ramirez, A. 2000. Economic Growth and human development. World Developments, 28(2): 197-220.
- ❖ Rinaldi, Raffi. 2013. Analysis of the Influence of Government Consumption, Government Investment , Private Investment and the Labor Force on Regional Economic Growth (Case Study of East Java Province in 2007-2011). Essay. Accessed from <http://jimfeb.ub.ac.id/index.php/jimfeb/article/view/641> on 01 February 2018 at 11.26 WIB.
- ❖ Rosadi, Dedi. 2011. Econometrics & Applied Time Series Analysis with Eviews. Yogyakarta: Andi
- ❖ Rosen, HS 2008. Public Finance : McGraw-Hill.
- ❖ Rustianto Deddy, 2008, ANALYSIS OF THE INFLUENCE OF INVESTMENT, LABOR AND GOVERNMENT SPENDING ON ECONOMIC GROWTH IN CENTRAL JAVA PROVINCE, Master's Thesis in Economics and Development Studies at Semarang State University.
- ❖ Sadono Sukirno. 1985. Introduction to Macroeconomic Theory . Build BG Graphics. Jakarta.
- ❖ Samuelson, Paul A., Nordhaus, William D. 1992. Macroeconomics. Fourteenth edition. McGraw-Hill Book Co. Singapore.
- ❖ Sandria Sjahputra. 2008. The need for investment in increasing regional economic growth in Natuna Regency in 2008-2001. Postgraduate Program Master's Thesis. UGM. Yogyakarta. (unpublished)
- ❖ Siat D Commercial Bank Management , 1993 Jakarta Intermedia
- ❖ Suryana, 2000. Development Economics , Jakarta: Salemba Empat Publisher.

- ❖ Susanti, A. Ayu Sari. 2010. The effect of regional original income on regional economic growth during the autonomy period for local government in East Java . Essay. State University of Malang.
- ❖ Todaro, MPS , C. Smith. 2004. Economic Development in the Third World . Jakarta: Erlangga Publisher.
- ❖ Van den Berg, H. 2001. Economic Growth and Development . McGraw-Hill/Irwin. Singapore.
- ❖ Van der Eng, P. 2008. Capital Formation and Capital Stock in Indonesia, 1950-2007. Working paper No. 2008/24. December 2008. The Arndt-Corden Division of Economics. Research School of Pacific and Asian Students. The Australian National University.
- ❖ Wibisono, Yusuf. 2005. Sources of Regional Economic Growth : Inter Empirical Studies Provinces in Indonesia , 1984-2000. Indonesian Journal of Economics and Business Vol.02, Gajah Mada University, 2005.
- ❖ Wing Wahyu Winarno. 2006. Econometrics and Statistical Analysis with Eviews .
- ❖ UPP STIM YKPN. Yogyakarta.
- ❖ Widarjono, A. 2005. Econometrics Theory and Applications for Economics and Business, Econosia FE UII, Yogyakarta RESEARCH DATA.
- ❖ Greece. 2009. Analysis of the factors influencing Indonesia's economic growth . University of North Sumatra thesis.
- ❖ Zhang, L., & Bezemer, D. (2004). How the credit cycle affects growth: the role of bank balance sheets. (SOM Research Reports ; Vol. 14026-GEM). Groningen: university of Groningen, SOM research school.