

The impact of Investment, Government Consumption and Education on Economic Growth in North Sumatra

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Abstract

The present study aims to analyze the investment, government consumption and education simultaneously and partially towards economic growth in North Sumatra. The data were collected in 2007 up to 2017 with quantitative data analysis using multiple linear regression. The findings of this study indicate that the investment has a positive and significant effect on economic growth in North Sumatra. The result of the data analysis shows that government consumption has a positive and significant effect on economic growth in North Sumatra. The data analysis result shows that education has a positive and insignificant influence on economic growth in North Sumatra. The findings simultaneously indicate that investment, government and education consumption have a significant effect on the economic growth in North Sumatra. Based on the coefficient of determination, 54.8% of economic growth variable is influenced by investment, government expenditure and education, while 45.2% is influenced by variables which exclude this study.



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INTRODUCTION

Economic prosperity has long been anticipated and desirable by the Indonesian especially the community in North Sumatra. By the hope and aspiration to be made reality can be implemented through economic development to improve the welfare and prosperity of society. Therefore, in National Development the core is for welfare and equitable prosperity for all Indonesian people. Our country is in economic development where we all hope to achieve a level of prosperity. National development is aimed at improving national economic growth. Growth acceleration momentum has come back. In general, the performance of the Indonesian economy is showing signs of progress, indicating the country's inflation rate is well-controlled. Economic growth is a macroeconomic indicator that is a major target for the government. When creating economic growth, conditioning the various aspects of increased economic activity will impact on the achievement of higher levels of production and activity. (If optimal economic growth occurs, economic activity will increase which is marked by the increased utilization of available resources and funds. This growth is a feature of optimizing the welfare of the community (Wijono, 2005). Economic variables often have links between one another. Changes or shocks to one economic variable will also be related to other variable changes. Often the relationship is not a direct relation, but it is a reciprocal relationship (Supriana, 2004). The linkage between economic variables suggests that governments should be keen on organizing and observing changes in economic variables to support economic growth and development. As economic growth increases, expectations of community welfare are also increasing and accompanied by revenue and development governments. Investments are sacrificing current assets to gain more in the future. The study by Myers (1977) in Subekti (2001) states that the firm is a combination of the asset in place and future investment options. However, often companies cannot always carry out all future investment opportunities. For companies who cannot use such investment opportunities will experience higher expenditures than the lost opportunity value. The government's spending on this matter of government investment has a strategic position in increasing the national economic growth rate. It is also often said that government spending on investment can play a role as one of the prime movers in the economy, therefore when the economy is experiencing sluggishness due to the economic recession that deteriorates the ability of the public to carry out economic activity, the government through its own policy instrument may appear to be saving the situation by increasing government expenditure through budget deficits, and vice versa.

In every economic system, either capitalist or socialist economic system, the government always has an important role. The role of the government is huge in the socialist economic system and is very limited in the capitalist system. Research by Gwartney, Lawson and Holcombe (1998), mentions that the government has a function as a core function. This function can make an increase in economic efficiency and thus increase growth. There are two categories in this function that are mostly used in various studies, which are functions as protective functions and the provision of a limited set of collective goods. Protective functions include the enforcement of laws and laws and the rights of individuals who can help the public from losing their rights. The second function of provision of a limited set of collective goods is to provide goods or services such as defence, roads, education and other community services as well as goods that are not provided or provided in the least amount by the private sector. Government expenditures are broadly made up of routine expenditure and development expenditure. Government consumption expenditure is included in routine spending and government investment expenditure is included in development expenditure.

Human resources as one of the production factors besides natural resources, capital, entrepreneurs to produce output. The higher the quality of human resources, the higher the efficiency and productivity of a country. History records that countries that implement human-dimensional development paradigms have been able to grow even though they do not have the abundance of abundant natural resources. Emphasis on human investment is believed to be the basis for increasing the total productivity. Land, labour, physical capital may experience a diminishing return, but that's not with science. Robert M. Solow emphasizes on the role of science and capital investment in human resources in spurring economic growth. From the theory of Solow then developed a new theory of economic growth known as The New Growth Theory (Tilaar, 2000). With a higher level of education, it will ensure continuous improvement in the level of technology used by the community. According to Bachtiar, (2004) the ultimate aim of the education program for the community is education service users. Furthermore, the education process in developing countries has resulted in various dilemmas, efforts to expand education facilities to achieve equitable educational outcomes have not been accompanied by improved quality of the graduates. The double effect of the dilemma is the growing number of young and educated job seekers. In an effort to address these issues, both the government and the private sector should work together to solve problems and ways to address these problems. In addition, job seekers should demonstrate their quality and quality in working, especially job seekers coming from college graduates. Because many are found in the field, graduates from college do not have the skills required by the available vacancies, while the wages provided must be in accordance with the graduates. This creates an increasingly educated unemployment rate in society. In macro, unemployed educated workers are a waste. When attributed to opportunity cost sacrificed by the state due to the unemployment of the educated workforce, especially higher education. Recognizing the importance of the role of education, in this paper will be discussed about investment, government consumption, education on economic growth.

LITERATURE REVIEW

Economic Growth

According to Sukirno (2002), Economic development is a process that causes per capita income or society to rise in the long run. Todaro (2000) states that Economic Development is a multidimensional process that includes structural changes, attitudes and institutions, increased economic growth reducing inequality in income distribution and eradicating poverty. According to Kuznets in Todaro (1998), Economic Growth is the increase in capacity in the long-term of the country concerned to provide various economic goods to the population. Economic development has three important traits, among other things: 1) a meaningful process is a continuing change. 2) Efforts to raise the level of per capita income. 3) Increase in per capita income per se in the long run. It can be concluded that development means a structural change in which it expands the economic base and field of life. But in its development, the term economic growth is used for economic development only by developed countries whereas the term economic development is applicable to developing countries. Through economic development, it is hoped that there will be a change towards the desired, a just and prosperous society that is spared from ignorance. In order to realize the purpose of development, active participation of all members of society is required. Some economists distinguish between economic development and economic growth. Economic development is meant to increase the per capita income of society, that is, the rate of GDP growth in a particular year is beyond the level of population growth or the development of GDP prevailing in a society followed by modernization in economic structures that are

generally still traditionally. Meanwhile, economic growth is defined as an increase in GDP regardless of whether the increase is greater or less than the rate of population increase or whether changes in the economic structure apply or not. This opinion is similar to the recognition of Kindeleberger (2000). They argue that economic growth means more output. While economic development means not only more outputs but also more sorts of output than previously produced. In addition to changes in the technical and institutional settings where the output was produced and distributed. Growth can involve a broader range of inputs. It can also be derived from greater development efficiency over this until it covers changes in the composition of output and large relative contribution of various inputs to various production processes. Finally, a new economy can be expressed in a growing state when per capita income shows a bullish trend. This does not mean that per capita income must rise continuously. The occurrence of war, political turmoil and the deterioration of the export sector, for example, may result in an economy experiencing a setback in its level of economic activity. If such circumstances are only temporary and economic activity on average increases from year to year, such communities may be referred to as experiencing economic development

Investment

In general, the definition of an investment is the cultivation of assets or funds undertaken by a company or individual for a certain period of time in order to obtain greater returns in the future. There are many things involved in this activity, and some of them are the number of funds and the purpose of the investment. Investment can be done not only on the physical but also on non-physical fields. The physical investment includes factory building and employee housing, machinery and equipment, and supplies (raw materials, semi-finished goods, and finished goods). Non-physical investments cover education, training, migration, health care and employment. Non-physical investments more or better known as human capital investments are the number of funds incurred and income-generating opportunities during the investment process. Revenue during this investment process is in return and is expected to earn a higher level of income to achieve higher consumption levels. After Theodore W. Schult and other economists began discussing the impact of human capital investment on economic growth then this was noted. Discussion on this problem, human resource investment relations with productivity began to be especially significant since the advent of Gary S. Becker with his analysis of the Human Capital (Warsito Jati, 2002). According to N.Gregory Mankiw (2005), investment theory is the most frequently changed GDP when spending on goods and services falls, most of which are related to the drop in investment spending. There are three forms of investment expenditures, business fixed investment covering the structure of the purchasing company for the production process, the housing investment covers the new housing that the buyers are for living and the landlords buy for rent, inventory investment covers goods that the company places in warehouses including materials and semi-finished goods and finished goods. As a rational decision, investment is largely determined by two key factors, namely the expected return and investment costs. According to Sadono Sukirno (2000), investment activities enable a community to continuously improve economic activity and employment, increase national income and improve the level of community prosperity. This role is derived from three important functions of investment activity: (1) investment is one of the components of aggregate expenditure, so that the increase in investment will increase aggregate demand, national income and employment opportunities; (2) increase of capital goods as a result of investment will increase production capacity; (3) investments are always followed by technological

developments. Suryana (2000) states that capital deficits in developing countries can be seen from several angles (1) Smallest absolute amount of material capacity; (2) Limited capacity and expertise of the population; (3) Low net investment. Due to these limitations, developing countries have undeveloped natural resources and potential human resources. Therefore to increase productivity it is necessary to accelerate new investment in physical capital goods and human resource development through investment in education and training. This is in line with the theory of vicious circle which holds that: (1) the inability to direct sufficient savings, (2) lack of stimulation to invest, (3) relatively low levels of education, knowledge and skills are three factors the main obstacle to the creation of capital formation in developing countries.

Government Consumption Expenditures

Government expenditures are broadly made up of routine expenditure and development expenditure. Government consumption expenditure is included in routine spending and government investment expenditure is included in development expenditure. In developing countries, the largest expenditure is allocated for infrastructure development which is a pure public good that can not be produced by private parties such as energy, defence, as well as to finance social activities such as education, health, and others. The financing is carried out in principle with the ability to pay (Syamsi, 1994). In addition, this is related to the increased fiscal deficit in developing countries, due to the limited ability of the state in increasing revenue in financing higher government spending. As has been known, government spending is reflected in the realization of routine spending budget and realization of development expenditure budget, while total receipts include domestic receipts and foreign receipts called development receipts. In terms of objectives, routine expenditures are operational expenditures and are absolutely necessary and consumptive, but not all routine spending budgets can be categorized as current expenditures, such as spending on office inventory purchases, office building maintenance expenses, and so on. Consumption expenditures are the routine expenditure of the state in this case the expenditure of employees covering salaries and pensions, allowances and expenses of domestic goods, regional routine funds and other routine expenditures which impacts the consumption of employees or the public on increased goods which then increases the consumption function contributing to the contribution to national gross and economic growth (Darma, 2011). The role and magnitude of consumption expenditure and government investment are something that invites controversy on macroeconomics. While countries are moving toward open and free markets, government spending on consumption has increased steadily. Consumption is an activity used for the purpose of taking advantage of a product or service. These products and services can be goods or things, as well as a type of service or service. This consumption activity is intended to fulfil all essential needs or even just pleasure and satisfaction in a moment. Consumer goods are goods manufactured with the purpose to be used by the community in fulfilling their life needs. This consumption activity is created because of someone who does the production or production process. Likewise, production activities exist because of someone who spends the consumption of the product. According to Paul A, Samuelson (2005) consumption theory is the largest single component of the GNP, accounting for 66per cent of total expenditure in the last decade. What are the major components of consumption among the most important categories are housing, motor vehicles, food, and community services? According to John Meynard Keynes (2005), the consumption decision in the two is; 1) Consumption decisions are crucial for short-term analysis because of their role in economic growth. 2) Critical consumption decisions for short term analysis because of their role in

determining aggregate demand. Consumption is two-thirds of GDP, such fluctuations in consumption are an important element of the economic boom and recession. According to Paul A. Samuelson (2005), one of the most important relationships in the overall macroeconomy is the consumption function shows the relationship between the level of consumption expenditure and the level of individual disposable income. According to Paul A. Samuelson (2005) major factors affecting consumption expenditure: 1) Disposable income shows that consumption is closely correlated with disposable income, the only period in which income and consumption are not moving the same pattern is during the world war to II where the goods are so rare that it has to fall, and the people are pushing to save money to help the country in the financing of war. 2) The permanent income of the simplest consumption theory considers only the current level of income in estimating what is done carefully showing that people not only base their consumption expenditure on current income but also on long-term tendencies

Education

According to Law no. 20 Year 2003, the definition of education under Law No. 20 of 2003 is a conscious and planned effort to create a learning environment and learning process so that learners actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and the necessary skills of himself, society, nation, and country. Educational theory is a cornerstone in the development of educational practices such as the development of curricula, teaching and learning processes. The curriculum and learning are related to the theory of education or in the preparation of a curriculum and this lesson plan refers to the theory of education. This education theory is divided into four, namely classical education, personal education, educational technology, and interactional education. Tilaar (2002) states that the essence of education is humanizing humanity, a process that sees human beings as a whole in their existence. Looking at the statement from Tilaar can be found that in the process of education, there is a learning process, thus in education, there is a clear process of human formulation. The process of educating and learning is fundamental because in it there are processes and actions that change and determine the way of human life. Muhammad Saroni (2011) that education is a process that goes on in life as an effort to balance the inner condition with the outside condition. This balancing process is a form of survival that is done in order to be able to follow every activity that goes on in life. In the course of development, education is fundamental to the development of human resource quality. According to Herbison and Myers (Panpan Achmad Fadri, 2000) "human resource development means the need to increase the knowledge, skills of the ability of everyone in society". Educational goals contain a picture of good, noble, worthy, true, and wonderful values for life. Through education besides being able to provide various knowledge, ability and attitude can also be developed various capabilities needed by every member of society so that can participate in development. The primary goal of education is to form community members into individuals who are self-respecting, humane, and members of the community who can educate themselves in accordance with the character of the community itself, to reduce some of the difficulties or obstacles of their life development and to try to meet the needs of their lives and to overcome their problems (Nazili Shaleh Ahmad, 2011).

Hypotheses Development

Based on the prior study, the authors developed several hypotheses in this study as follows:
H1; Investment has a positive and significant effect on economic growth.

H2; Government consumption has a positive and significant effect on economic growth.

H3; Education has a positive and significant effect on economic growth.

H4; Investment, government consumption and education have a positive and simultaneous effect on economic growth.

RESEARCH METHOD

Based on the exploration level, this research includes associative research which aims to test the relationship between two or more variables. Data collection is sourced from the Central Bureau of Statistics of North Sumatra for a period of 10 years from 2007 to 2017. Documentation studies have taken data relating to employment and demographic documents in the Central Statistics Agency of North Sumatra. Documented data are related to foreign investment, consumption, education and economic growth from 2007 to 2017. Classical assumptions are undertaken to determine whether the regression estimation results are really feasible to use or not. Classical assumptions used were Normality test, Multicollinearity test, Autocorrelation test. Data analysis model used is the econometric model with analysis technique using Ordinary Least Square with the formula: $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e$. Hypothesis testing using simultaneous test (F-test) and partial test (T-test)

RESULTS & DISCUSSION

Result

Normality Tests

The results of the Kolmogorov-Smirnov test show the data is also normal because of the value of Asymp sig $0,200 > 0,05$, thus the data is declared normal.

Table 1 NPar Tests- One-Sample Kolmogorov-Smirnov

		Unstandardized Residual
N		21
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.42644873
Most Extreme Differences	Absolute	.144
	Positive	.144
	Negative	-.112
Test Statistic		.144
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.

Multicollinearity Tests

Table 2. Multicollinearity Tests

Model	Unstandardized Coefficients		Standardized Coefficients	Collinearity Statistics	
	B	Std. Error	Beta	Tolerance	VIF
(Constant)	4.928	.933			
Investment	.090	.034	.521	.707	1.414
Government Consumption Expenditure	2.926	1.014	.562	.699	1.430
Education	.195	1.776	.024	.576	1.735

a. Dependent Variable: Economic Growth

Based on the table above it can be concluded that this research is free multicollinearity. It can be seen by comparing Tolerance and VIF values. From the results of this test, it can be seen that the Tolerance figure for all independent variables (investment, government consumption and education) is greater than 0.1 and the VIF number is smaller than 10, it can be concluded that there is no multicollinearity among the independent variables.

Autocorrelation Tests

Table 3. Autocorrelation Tests

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.342 ^a	.117	-.049	.10926	1.859

a. Predictors: (Constant), Investment, Government Consumption Expenditure, Education

b. Dependent Variable: Economic Growth

Based on the table above in the Durwin-Watson column, it can be seen that the Durbin-Watson value of 1.859 indicates that there is no autocorrelation since the value is between 1.6694 to 2.3306.

Multiple Linear Regression Analysis

The result of data processing that has been done, it can be seen that the relationship model from the multiple linear regression analysis is seen from the following table:

Table 4 Multiple Linear Regression

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.928	.933		5.285	.000
Investment	.090	.034	.521	2.687	.016

Government Consumption Expenditure	2.926	1.014	.562	2.884	.010
Education	.195	1.776	.024	.110	.914

a. Dependent Variable: Economic Growth

Based on table 4, the research model is as follows $Y = 4.928 + 0.90 X_1 + 2.926 X_2 + 0.195 X_3 + e$

Partial Tests

Table 5. Partial Tests

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.928	.933		5.285	.000
Investment	.090	.034	.521	2.687	.016
Government Consumption Expenditure	2.926	1.014	.562	2.884	.010
Education	.195	1.776	.024	.110	.914

a. Dependent Variable: Economic Growth

Based on Table 5, this partial hypothesis test can be summarized as follows:

1) Investment has a positive and significant effect on economic growth.

Investment t-value is $2.687 > 1.729$ ($n-2 = 21-2 = 19$ a5%) then sig value is $0.016 < 0.05$, H_a is accepted, it means partially, investment has a significant effect on economic growth.

2) Government consumption has a positive and significant effect on economic growth.

The t-value of government consumption is $2,884 > 1,729$ ($n-2 = 21-2 = 19$ a5%) then sig value is $0,010 < 0,05$, then H_a is accepted, it means partially, government consumption has a significant effect on economic growth..

3) Education has a positive and significant effect on economic growth.

The t-value of education is $0.110 < 1.729$ ($n-2 = 21-2 = 19$ a5%) then sig value is $0.914 > 0.005$, then H_a is rejected, it means partial education has insignificant effect on economic growth.

Simultaneously Tests

Table 6. Simultaneously Tests

Model	Sum of Squares	df	Mean Square	F
Regression	4.414	3	1.471	6.877

Residual	3.637	17	.214
Total	8.051	20	

Predictors: (Constant), Investment, Government Consumption Expenditure, Education & Dependent Variable: Economic Growth

Based on the ANOVA table, the result of F-count test is 6.877. If compared to F-tables at a confidence level of 5% ($\alpha = 0.05$) the magnitude 3.16, F-count (6,877) > F-table (3,16) which means simultaneously independent variables have the significant effect on dependent variable (economic growth).

Determination Coefficient

Table 7. Determination Coefficient

Model	R	R Square	Adjusted R Square	Std. An error of the Estimate
1	.740	.548	.469	.46255

Predictors: (Constant), Investment, Government Consumption Expenditure, Education
Dependent Variable: Economic Growth

Based on table 7, the coefficient of determination is 0.548 which means 54.8% means that economic growth variable is influenced by investment, government consumption and education variables, whereas 45.2% influenced by other variables not included in this study.

Discussion

According to Sadono Sukirno (2000), economic growth activities enable a community to continuously improve economic activity and employment, increase national income and improve the level of community prosperity. This role is derived from the three important functions of economic growth activities: (1) economic growth is one of the components of aggregate expenditure, so the increase in economic growth will increase aggregate demand, national income and employment opportunities; (2) increase of capital goods as a result of economic growth will increase production capacity; (3) economic growth is always followed by technological developments accelerating new economic growth in physical capital goods and human resource development through economic growth in education and training. This is in line with the theory of vicious circle that argues that: (1) inability to direct sufficient savings, (2) lack of stimulation to invest, (3) relatively low level of education, knowledge and skills are three the main factor inhibiting the creation of capital in developing countries. Some of the assumptions used in this theory are that: The economy in full working conditions and the capital goods in society are used in full. In the two sectors of the economy (Household and Enterprise) means the government and trading sectors do not exist. The amount of public savings is proportional to the national income, meaning the savings function starts from the original point (zero). The Marginal Propensity to Save = MPS rate is fixed, as well as the capital and output ratio (Capital Output Ratio = COR) and the Incremental Capital Output Ratio. This theory has a weakness that saving savings and ratio of capital-output increase, in reality, has always changed in the long run. Similarly, the proportion of labour and capital utilization is not constant, prices are always changing and rates may change will affect economic growth. In the model of endogenous growth is stated that the result of economic growth will be higher when the aggregate production in a country gets bigger. Assuming that

private and public economic growth in the field of human capital or resources can create positive externalities and spur productivity that is able to offset the scientific trend of descending scale. The interesting implications of this theory are the ability to explain the potential benefits of complementary investment in capital or human resources, infrastructural infrastructure or research activities. Given that complementary economic growth will result in both personal and social benefits, the government will have the opportunity to improve the efficiency of domestic resource allocation by providing a wide range of public goods (infrastructure means) or actively promoting private economic growth in the technology-intensive industry where human resources are accumulated. Thus, this model advocates the active participation of the government in managing economic growth either directly or indirectly. In principle, not all inflation has a negative impact on the economy. Especially if there is mild inflation of inflation below ten per cent. Lighter inflation can encourage unemployment. This is because inflation is able to inspire entrepreneurs, to further improve their production. Employers are eager to expand their production, as the price increases that entrepreneurs get more profit. Additionally, increased production has another positive impact, namely the availability of new jobs. Inflation will have a negative impact if the value exceeds ten per cent. Production will increase if price increases of goods are faster than salary increases or wages. This will give employers the benefit of being higher. Increased profits gained by entrepreneurs will encourage entrepreneurs to produce more so that the yields will increase. Production will decrease if inflation is too high (hyperinflation). When hyperinflation occurs, people do not like to have cash, as the real value of money held is lower. The purchasing power is low. Since some people do not hold cash, some exchange tends to be done in barter ways. This makes the producers not eager to produce because the production results will be less expensive, and consequently the production results are down. It is very closely the relationship between economic growth and unemployment. Economic growth is the prosperity of a country with the specific income of its members. the lower the unemployment rate in a country then the higher economic growth in addition to other unstable factors such as entrepreneurs, a country is stated to be economic growth if the numbers of independence are high as America.

CONCLUSION & SUGGESTION

Conclusion

Based on the description and explanation above which concluded in this research are: 1) The results of the data analysis showed that investment had positive and insignificant influence on economic growth in North Sumatra. 2) The result of the data analysis shows that government consumption has a positive and significant effect on economic growth in North Sumatra. 3) The result of the data analysis shows that education has a positive and insignificant influence on economic growth in North Sumatra. 4) The results simultaneously state that investment, government consumption and education have a significant effect on the economic growth in North Sumatra. 5) Based on the table above in the R Square column, the coefficient of determination is 0.548 which means 54.8% means that economic growth variable is influenced by variable meaning investment, government consumption and education, while the remaining 45.2% is influenced by other variables that are not included in this study.

Suggestion

1) In an effort to improve economic growth, it is recommended that existing potentials support foreign investment in North Sumatra, such as central and local government policies

that encourage the entry of foreign investment and conducive social and economic conditions in North Sumatra. 2) Development of production will increase economic growth. High economic growth will lead to increased employment and reduced unemployment.

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