THE INFLUENCE OF INVESTMENTS, GOVERNMENT EXPENDITURE AND LABORS ON ECONOMIC GROWTH IN ACEH PROVINCE

Abstract

This study aims to determine the influence of investment, government spending and labors on economic growth in Aceh province. The method used using multiple regression analysis (Ordinary Least Square). The data in this study is secondary data in the form of Aceh economic data from 1991 - 2017 sourced from the Central Bureau of Statistics (BPS), the Agency for Investment and Promotion of Aceh, and the Dinas Keuangan Aceh. The results showed that investment variables, government expenditures and manpower have a positive and significant impact on economic growth in Aceh province with the value of coefficient of determination (R2) of 0.92 which means the equation of economic growth sector / GDP is able to be explained by independent variables of investment, government and labor with a confidence level of 92%. The conclusion of this study is that economic growth can be increased through increased investment, higher labor productivity and government expenditure to be oriented on community economic development.
INTRODUCTION

Regional economic growth is one of the benchmark of the regional economy towards a better situation in the long run, and at the same time it describes the situation of an increase in production capacity of an economy, expressed in an increase in Gross Regional Domestic Product (GRDP). Increasing economic growth is also an indication of the success of economic development in a region.

As an autonomous region, the province of Aceh, both districts / cities have the right to regulate and manage their own government system to provide services to the community aimed at improving the economy of the community. Different types of developments that have so far taken place in Aceh to boost the economy can increase Aceh's Gross Regional Domestic Product (GRDP) each year. However, when we analyze the Aceh's economic growth which has tended to fluctuate since 2010, we might find out that the development in Aceh has failed to increase economic growth.

Table 1.1
Macroeconomics condition in the province of Aceh

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Gross Regional Domestic Product (Million Rp)</th>
<th>ECONOMIC GROWTH (%)</th>
<th>GOVERNMENT EXPENDITURE (Million Rp)</th>
<th>INVESTMENT (Million Rp)</th>
<th>LABOR (population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>86,077,845</td>
<td>5.91</td>
<td>7.528,516</td>
<td>2.082,370</td>
<td>1.938,519</td>
</tr>
<tr>
<td>2011</td>
<td>89,844,679</td>
<td>4.38</td>
<td>7.374,625</td>
<td>7.681,106</td>
<td>2.001,259</td>
</tr>
<tr>
<td>2012</td>
<td>94,290,896</td>
<td>4.95</td>
<td>8.757,319</td>
<td>2.006,157</td>
<td>1.978,491</td>
</tr>
<tr>
<td>2014</td>
<td>102,512,733</td>
<td>4.13</td>
<td>12.045,847</td>
<td>3.823,718</td>
<td>2.123,312</td>
</tr>
<tr>
<td>2015</td>
<td>106,522,864</td>
<td>4.27</td>
<td>12.135,635</td>
<td>3.789,208</td>
<td>2.182,824</td>
</tr>
<tr>
<td>2016</td>
<td>111,118,991</td>
<td>4.31</td>
<td>12.119,713</td>
<td>4.051,473</td>
<td>2.257,900</td>
</tr>
<tr>
<td>2017</td>
<td>115,680,626</td>
<td>4.14</td>
<td>15.175,669</td>
<td>4.171,473</td>
<td>2.288,777</td>
</tr>
</tbody>
</table>

Source: Central Bureau of Statistics, Aceh Investment Board (data processed)

As an autonomous region, both districts and cities in Aceh Province have the right to regulate and manage their own government system to provide community services aimed at improving the economy of the community. The different types of developments that have taken place...
in Aceh so far to promote the economy are exactly inversely proportional to economic growth. The economic growth of Aceh has been on a downward trend since 2010.

**Graph 1.1.**

*Aceh’s Economic Growth from 2010-2017*

![Graph 1.1. Aceh’s Economic Growth from 2010-2017](image)

As shown in Figure 1.1, it is known that Aceh's economic growth in the period 2010-2017 was only 4.5% on average, still below the average national economic growth rate of 5.1%. In 2010, Aceh's economic growth was quite high at 5.91%, after which it tended to decline due to the 2011 financial crisis. After the end of LNG Gas Arun in 2013, Aceh's economic growth in 2012 increased by 4.95%, remaining around 4%.

The low level of economic growth in recent years has been in the westernmost province of Indonesia and also below the national economic growth rate of 5.1 percent. This has been influenced by many factors, including the imbalance in the distribution of raw materials or materials, the weather or natural factors, and a limited investment climate. In particular, the current investment climate is still uncompetitive, so investors still do not have the confidence and seriousness to grow large companies in Aceh.

To support regional economic development efforts, local governments at all levels should establish favorable policies to promote mutually beneficial investment for local governments, the
private sector and the community. The growth of a healthy and competitive investment climate is hopefully will spur the development of mutually beneficial investment in regional development. Based on Table 1.2, investments in Aceh tend to fluctuate. This shows that investors hesitate over Aceh investment. Thus, government efforts are needed to convince potential investors to promote investment in Aceh, so the economic conditions of Aceh will also develop.

<table>
<thead>
<tr>
<th>Years</th>
<th>Domestic Investment (Million Rp)</th>
<th>Number of Projects</th>
<th>Foreign Investment (Thousand US$)</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>40.880,0</td>
<td>5</td>
<td>4.565,7</td>
<td>13</td>
</tr>
<tr>
<td>2011</td>
<td>259.417,6</td>
<td>16</td>
<td>22.455,5</td>
<td>40</td>
</tr>
<tr>
<td>2012</td>
<td>60.188,0</td>
<td>11</td>
<td>172.272,8</td>
<td>26</td>
</tr>
<tr>
<td>2013</td>
<td>3.636.419,3</td>
<td>71</td>
<td>94.167,1</td>
<td>87</td>
</tr>
<tr>
<td>2014</td>
<td>5.110.209,5</td>
<td>75</td>
<td>31.132,5</td>
<td>49</td>
</tr>
<tr>
<td>2015</td>
<td>4.192.413,6</td>
<td>169</td>
<td>21.189,1</td>
<td>78</td>
</tr>
<tr>
<td>2016</td>
<td>2.456.092,0</td>
<td>94</td>
<td>134.505,0</td>
<td>69</td>
</tr>
<tr>
<td>2017</td>
<td>782.798,9</td>
<td>154</td>
<td>23.245,7</td>
<td>89</td>
</tr>
<tr>
<td>Total</td>
<td>16.538.418,9</td>
<td>595</td>
<td>503.533,4</td>
<td>451</td>
</tr>
</tbody>
</table>

Source: Central Bureau of Statistics, Aceh Investment Board (data processed)

Based on Table 1.2 above, it can be seen that domestic investments in Aceh realized 595 projects with a total investment of 16,538,418.9 trillion Rupiah in the years 2010 - 2017. In the meantime, foreign investments totaling 503,533.4 thousand US dollars were made in 451 projects. Table 1.1 also shows that investment in Aceh is always volatile. It has also tended to decline in the last three years. Although the number of projects has increased, the overall investment has been lower. This low level of investment shows that the government of Aceh has not optimally put some efforts to attract both foreign and domestic investors to invest in this Veranda of Mecca.

Government spending has also become an important subject for analysis. In general, the description of public expenditure, such as physical infrastructure or human capital, will boost economic growth, but unfortunately these expenditures can also hamper the economic growth of a region.
Table 1.3. Aceh Government Expenditure in 2010 – 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Aceh Government Expenditure (Million Rp)</th>
<th>APBA (Million Rp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>7.528.516,36</td>
<td>6.992.253,9</td>
</tr>
<tr>
<td>2011</td>
<td>7.374.625,29</td>
<td>7.610.320,15</td>
</tr>
<tr>
<td>2012</td>
<td>8.757.319,94</td>
<td>9.180.143,05</td>
</tr>
<tr>
<td>2013</td>
<td>11.220.427,55</td>
<td>10.671.826,52</td>
</tr>
<tr>
<td>2014</td>
<td>12.045.847,34</td>
<td>11.606.324,71</td>
</tr>
<tr>
<td>2015</td>
<td>12.135.635,48</td>
<td>11.680.376,91</td>
</tr>
<tr>
<td>2016</td>
<td>12.119.713,19</td>
<td>12.364.563,97</td>
</tr>
<tr>
<td>2017</td>
<td>15.175.669,33</td>
<td>14.733.699,98</td>
</tr>
</tbody>
</table>

Source: Central Bureau of Statistics, Aceh Investment Board (data processed)

Table 1.3. above shows that expenditure of the provincial government of Aceh in 2010-2017 continues to increase. This increase exceeds that of the local revenue and expenditures budgets of Aceh (APBA). The steps taken by the government of Aceh as an effort to make Aceh even better, in terms of infrastructure and economic development to reduce poverty and unemployment rate and at the same time to improve people welfare through various types of empowerment programs. The high level of government spending is inversely proportional to Aceh's economic growth, where economic growth is slow (see Figure 1.1) and the growth rate in recent years is only 4%.

Another factor that influences economic growth is labor. High labor productivity is potentially maximizing the efforts to create economic growth and development overall. As it has been shown in Table 1.3 below, the number of workers in the province of Aceh has continued to increase in recent years.
The table above depicts that there is an increase in labor because the Aceh Province continues to carry out economic development in all sectors so that the impact of economic development is able to absorb labor. With the existence of economic development, it is expected to be able to increase economic growth and public welfare.

LITERATURE REVIEW

Economic Growth Theory According to Classics

According to classic economists, there are four factors that influence economic growth: population, number of capital goods, land area and natural wealth, and technology used. Although classical economists recognize that economic growth depends on many factors, they focus mainly on the impact of population growth on economic growth (Sukirno, 2013).

Robert Malthus said that the population will influence the pace of economic growth as population growth increases in geometrical rate whereas the supply of food will increase in an arithmetical fashion. Similar to David Ricardo, Malthus Smith holds different views from Smith about economic development. According to Smith, whose arguments opposed the Law of Diminishing Return, population growth is believed to be a factor in driving economic development as it will expand the market. On the contrary Ricardo and Malthus postulate that the rapid development of the population will increase it to double therefore lowering the level of economic development to a lower level. At this point, workers will not surprisingly receive very low wages or subsistence wages in the future (Sukirno, 2013).
The Harrod-Domar Economic Growth Model

This theory was developed by Harrod (1948) in England and Domar (1957) in the United States. This theory complements the theory first proposed by Keynes, in which Keynes views it in the short-run (static conditions), while Harrod-Domar saw it in the long-run (dynamic conditions). The Harrod-Domar theory is based on the assumption:

1. the economy is closed,
2. marginal propensity to Save (MPS = s) is constant,
3. the production process has a constant return scale and the growth rate of the workforce (n) is constant and corresponds to the population growth rate (Tarigan, 2005).

Neoclassical Economic Growth Theory

The Solow model of neo-classical economic growth is a pillar that contributes greatly to neoclassical growth theory, so that the initiator, Robert Solow, was awarded the Nobel Prize for Economics. Basically, this model is a further development of the Harrod-Domar formulation, which adds a second factor, work, and the third independent variable. Technology, is added to the growth equation. However, unlike the Harrod-Domar model, which assumes a fixed scale return with a standard coefficient, the Solow model for neoclassical growth includes the decreasing labor and capital input scale, when both are analyzed separately. When analyzed both simultaneously or simultaneously, Solow also uses the assumption of a fixed income scale (Todaro and Smith, 2004).

Theory of endogenous economic growth

The theory of endogenous growth stems from the unsatisfactory performance of neoclassical theory in explaining the sources of long-term economic growth that have led to a widespread disappointment with the theory of neo-classical economic growth. The endogenous growth theory, or simply called the new growth theory, provides a theoretical framework for the analysis of the endogenous growth or growth process of the gross national product (GNP), which is derived from a system that regulates the production process. This theory states that GNP growth is a natural consequence of long-term equilibrium (Todaro, 2004).

Investment
Mulyadi (2001: 284) states that investment is the pooling of resources to achieve long-term gains in the future. Investment can be interpreted as the capital investment in an activity that has a relatively long life span in different business areas. Investments in the narrower sense are made in the form of specific physical and non-physical projects, such as: Through the construction of factories, roads, bridges, building construction and research projects, and development. Sukirno (2007: 366) defines investment as expenditure on the purchase of capital goods and production equipment with the aim of replacing and in particular adding to capital goods in the economy, which will in future be used for the production of goods and services.

**Definition of Government Expenditures**

Government expenditure is one of the instruments of fiscal policy. Government expenditures are all purchases or payments for goods and services for national interests, such as the purchase of weapons and equipment for government offices, construction of roads and dams, salaries of civil servants, armed forces, and others. Government spending is also a measuring instrument where the government determines the role of the government and the private sector. In addition, government spending can be a key determinant of the amount of aggregate expenditure, and also a determinant of short-term real GNP growth (Sukirno, 2004).

**Labor**

Workers are residents who have or are working, who are looking for work and who carry out other activities such as going to school and taking care of the household. The three groups called job seekers go to school and take care of the household, even though they are not working, they are considered physically capable and can work at any time. Practically, the definition of labor and non-labor is distinguished only by age limits. Where each country gives a different age limit (Simanjuntak, 1998: 2)
Workers are residents of working age, between 15-64 years. In summary, the workforce consists of the workforce and not the workforce. What is meant by the workforce is part of the workforce involved or still trying to engage in productive activities that produce goods and services, or in other words it is said that those who have jobs, both working and temporary are not working for a reason, such as farmers who are waiting for harvest / rain, employees who are on leave, sick, etc. (Simanjuntak, 1998: 3).

Influence between Variables

a. Influence of Investment Variables on Economic Growth

In the endogenous growth model, it can be said that the return on investment will be higher as total production in a country grows. Private and public investment in resources or human capital is expected to create external economies (positive externalities) and boost productivity to compensate for the scientific tendency to lower yields. Although technology is recognized to play a very important role, the endogenous growth model states that technology need not be highlighted to explain the process of creating long-term economic growth. Therefore, this model encourages government involvement in direct and indirect investment management. As public investment in public goods increases, private sector and household growth is expected to increase in the allocation of existing resources in a region. This will ultimately increase GDP (Todaro, 2011). The above theory is underlined by Irma's research (2004), which states that investment increases economic growth.

b. Impact of Government Spending on Economic Growth

Government Expenditure (Government Expenditure) is part of fiscal policy, which is a government measure to regulate the economy, by determining the amount of revenue and
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expenditure of the state every year that appears in APBN documents for national level and local government budget for regional level. The aim of this fiscal policy is to stabilize prices, production volumes and employment opportunities and to stimulate economic growth (Sukirno, 2012). The theory of Peacock and Wiseman states that economic development leads to an increase in tax collection, although the tax rate does not change, and the increase in tax revenues has also led to a rise in government spending. As a result, rising GDP will normally lead to higher government revenues and government spending (Sukirno, 2004).

C. Impact of Work on Economic Growth

From a macroeconomic point of view, employment job growth is closely linked to the pace of economic growth. In other words, economic growth will affect employment growth. The relationship between the rate of economic growth and the growing employment growth rate means that any economic growth rate can create wider employment opportunities (Sukirno, 2012).

RESEARCH METHODOLOGY

This research is a quantitative research, in which this study uses a quantitative method with a scientific approach. The objects in this study are variables of government expenditure, investment and labor that affect economic growth (GDP). The data used is secondary data ranging from 1991 to 2017.

The model used in this study is a Multiple Linear Regression model which is described by linear function formulation. In this case, based on research variables, it can be written in the form of equation functions as follows:

$$PDRB_t = \alpha I\beta_1 GE\beta_2 TK \beta_3$$
Furthermore, the formulation can be transformed into multiple regression forms (Gujarati, 2012: 268) as follows:

\[ LPDRB_t = \beta_0 + \beta_1 LIt + \beta_2 LGE_t + \beta_3 LTK_t + \varepsilon_t \]

Where:
- \( LPDRB = \) Logarithm of GRDP in year \( t \)
- \( LI = \) Logarithm of Investment in year \( t \)
- \( LGE = \) Logarithm of Government Expenditures in year \( t \)
- \( LTK = \) Logarithm of Labor in year \( t \)
- \( t = 1 \) to \( 27 \)
- \( \beta_0 = \) Constants
- \( \beta_1 \beta_2 \beta_3 = \) Regression coefficient

RESULTS AND DISCUSSION

To prove the analysis in this study, the estimation of each variable is done with the Ordinary Least Square (OLS) model for 27 years time series data. So that the following results are obtained:

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Estimated Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
<th>P-Value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>3.343551</td>
<td>0.934989</td>
<td>3.576032</td>
<td>0.0028</td>
<td>Significant</td>
</tr>
<tr>
<td>LGE</td>
<td>0.076661</td>
<td>0.015432</td>
<td>4.967529</td>
<td>0.0002</td>
<td>Significant</td>
</tr>
<tr>
<td>LI</td>
<td>0.024411</td>
<td>0.018709</td>
<td>1.304781</td>
<td>0.0116</td>
<td>Significant</td>
</tr>
<tr>
<td>LTK</td>
<td>0.926565</td>
<td>0.125787</td>
<td>7.366123</td>
<td>0.0000</td>
<td>Significant</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>R Square</th>
<th>F Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.925776</td>
<td>62.36362</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>Prob(F Stat)</td>
</tr>
<tr>
<td>0.910931</td>
<td>0.000000</td>
</tr>
<tr>
<td>DW</td>
<td></td>
</tr>
<tr>
<td>1.540839</td>
<td></td>
</tr>
</tbody>
</table>

Based on the regression results, the results of the regression equation are obtained as follows:

\[ LPDRB = 3.343 + 0.024 \text{Lt} + 0.076 \text{LGet} + 0.925 \text{LTKt} + e \]

From these results obtained coefficients that can be interpreted as follows:

Based on the results of the regression equation, the investment regression coefficient (I) is positive and significant, meaning that investment is positively related to economic growth (Y). Investment coefficient of 0.024 can be explained that an increase in investment of 10 percent will increase economic growth by 0.24%. This result is statistically significant. The influence of investment has very large influence on economic growth. According to the study of Suindyah (2011) which examined the effect of investment on economic growth in East Java, it was explained that investment had a positive and significant effect on economic growth. The results of the analysis show that economic growth in East Java is very dependent on the amount of investment coming in because investment is capital to drive the economy. Similar things also apply in Aceh. With so much investment coming in both domestic and foreign investments, it will drive the economy in Aceh and can create jobs so that other macro variables such as unemployment and poverty can be minimized due to the influence of these investments.

The Aceh government's expenditure regression coefficient (GE) is positive and significant, meaning that Aceh government spending is
positively related to economic growth (Y). The Aceh government expenditure coefficient of 0.0766 can be explained that an increase in government expenditure by 10 percent will increase economic growth by 0.7%. This result is statistically significant. Many studies are in line with the results of this study such as the Zahari (2017) study which conducted a study of government spending on economic growth in Jambi where government spending has a positive and significant effect on economic growth even though growth trends tend to fluctuate and decline. However there are other factors that affect growth, especially macro factors and monetary factors. In Aceh, government spending is so dominant in driving economic growth, this is because the Aceh Revenue and Expenditure Budget (APBA) is so large, besides that it is also caused by the investment that enters Aceh is still small, forcing the government to do government spending to accelerate development to increase economic growth.

The regression coefficient of labor (TK) is positive and significant, meaning that labor is positively related to economic growth (Y). The employment coefficient of 0.926 can be explained that an increase in government spending of 10 percent will increase economic growth by 9.26%. This result is statistically significant. Many studies show the effect of labor on economic growth, such as Isma's (2014) study which states that labor variables are positively and significantly related to economic growth in Aceh. The increase in labor will increase the productivity of an item or service so that the increase will affect the increasing economic growth. Thus the result of increasing economic growth, it will again create jobs.

Based on the coefficient of determination (R2) of 0.9257 it can be interpreted that in the economic growth equation the dependent variable (Y) is able to be explained by the independent variables of investment, government expenditure and labor with a confidence level of 92.57%. While the remaining 7.43% is explained by variables outside the equation.

The constant is 3.343. This means that if the investment variable, government expenditure and labor are considered constant, then the amount of GDP growth is 3.3%, or in other words that the growth of Aceh
GRDP will remain even with a minimal percentage or even if it is not influenced by the three independent variables.

CONCLUSION AND CONSULTATION

Conclusion
The conclusions in this study are:

1. The investment regression coefficient (I) is positive and significant, which means that the investment is in a positive relationship to economic growth (Y). The investment coefficient of 0.024 can be explained by the fact that an investment increase of 10% increases economic growth by 0.24%.

2. The government spending revision coefficient (GE) of the Aceh government is positive and significant, which means that the spending of the government of Aceh is in a positive relationship to economic growth (Y). Aceh's governmental spending ratio of 0.0766 can be explained by the government's 10% increase in government spending, which will boost economic growth by 0.7%.

3. The regression coefficient of labor (TC) is positive and significant, which means that the work is positively related to economic growth (Y). The employment coefficient of 0.926 states that a 10% increase in government spending will boost economic growth by 9.26%.

4. The coefficient of determination (R2) of 0.9257 can be interpreted as meaning that the dependent variable (GRDP) in the economic growth equation can be explained by the independent variables investment, government expenditure and labor with a confidence level of 92.57%. The remaining 7.43% are explained by variables outside the equation.

SUGGESTION

1. It is hoped that the government of Aceh will be able to regulate government spending to boost economic growth, absorb workers, overcome unemployment problem, and increase Acehnese living welfare and to cut poverty.

2. The government of Aceh must influence the investment climate in Aceh province to attract investors to invest in Aceh and to boost Aceh's economic growth while creating more jobs.
REFERENCES


