INFLUENCE OF FORMAL SMALL INDUSTRY PRODUCTION AND REVENUE REALIZATION TAX ON ECONOMIC GROWTH IN ACEH UTARA DISTRICT

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ARTICLE INFORMATION

The study aims to determine the effect of Formal Small Industrial Production and Realization of Tax Revenues on Economic Growth in North Aceh Regency. The data used in this study are time series in the period 2010-2017. The analytical model used in this study is the Multiple Linear Regressions Model. The result showed that there was a positive relationship between formal small industrial production and the realization of tax revenues. The positive effect was significant and positively affected economic growth in the districts of North Aceh.

1. PRELIMINARY

North Aceh Regency is the largest district in Aceh Province which has industrial potential, such as the oil and gas industry that was once victorious in this region, and several other large industries such as PT. Pupuk Iskandar Muda (PIM) and PT. Arun NGL, this has the potential for the development of small industries that can contribute to these large industries. Production as well as the high production of small industries can increase the GRDP of North Aceh so that it can increase economic growth in North Aceh. For more details, as shown in the table below regarding small industrial production, the realization of tax revenue and economic growth in Aceh Utara District are as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ECONOMIC GROWTH (PERCENT)</th>
<th>FORMAL SMALL INDUSTRY PRODUCTION (RUPIAH)</th>
<th>REALIZATION OF TAX REVENUE (Rp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2.53</td>
<td>47,522,001</td>
<td>13,876,067,033</td>
</tr>
<tr>
<td>2011</td>
<td>7.5</td>
<td>150,391,413</td>
<td>7,253,679,916</td>
</tr>
<tr>
<td>2012</td>
<td>5.38</td>
<td>52,003,878</td>
<td>11,099,449,020</td>
</tr>
</tbody>
</table>

Source: (BPS Aceh Utara Regency, 2020)

Data Table 1.1 above shows that in 2010 the production of formal small industries was Rp. 47,522,001 rupiah. In the same year, the realization of tax revenue was Rp. 13,876,067,033 rupiah. The economic growth of North Aceh is 2.53 percent. In 2011, there was a problem with the realization of tax revenues which decreased from the previous year, namely Rp. 7,253,679,916 rupiah due to a decrease in tax revenues for advertisements, restaurants, and entertainment. However, this decline actually led to an increase in economics growth from the previous year, namely 7.50 percent. The reason for the increase in economic growth was one of the reasons that is the same year the production of formal small-scale industries increased dramatically.

The second phenomenon occurred in 2012, which is the opposites of the phenomenon
that occurred in the previous year, namely the realizations of tax revenues increased from the previous year, namely Rp. 11,099,944,020 rupiah, the increase in the realization of taxes revenues actually caused a decline in economics growth from the previous year, namely by 5.38 percent. The causes of the declines in economics growth was due to the many problems in Norths Aceh, namely the decline in industrial productions in the same year.

The third phenomenon occurred in the realizations of tax revenues in 2016 which increased from the previous year which was Rp 21,671,743,611 rupiah, however the increases in tax revenues actually caused economics growth to declines from the previous year which was 3.27 percent. the realizations of tax revenues should increase, it will increases economics growth.

This researchs berthes purposes of knowing and analyzing the effects of formals small industrys productions and tax revenues realizations on economics growths in Aceh Utara districts.

2. THEORETICAL REVIEW
Economic growth

Economics growth is the developments of activities in the economy that cause goods and services produced in society to increases and the welfares of society to increases in the longs term (Hotman, 2013). Sukirnos insideSutrisna (2016)definness economics growth as the developments of activities in the economy that causes increased goods and services produceds in society. This increases is causeds by productions factors that are always experiencing an increase in quanitities and qualities. Economics growth can be achieved if all sectorss in one regions can carries out all productions processs well, they musts encourages each others, because each production process requires cooperations from various sectors, so that between industriess will have a positive relationships.

Formal Small Industrial Production

Production is an activity that increases the values of an item. Each country has its own flagship production sector in orders to increases economies activity. In the worlds of trades, these outputs produceds in the productions process is very important beacuse the resultss production activities will determine the wheels of trade(Wibisono, 2015). In othser wordss, foreigns agriculturals activities, namely seexports, are largelys determineds by productions activitiess. If productions activities weakens, it is certains that the productions resultss are onlys able to meet domestics needs and are unables to sell overseass.

Realization of Tax Revenue

The definitions of tax accordings to Brotosdihardjo in Apriansyah & Bachri (2016)is a contribution st to the state sthat cash be forced on thes taxpayer to spay it accordings to regulassations, without getting any re-achievement. This fee is intended to be used to financese general expenses reslated to thes state’s task ofs running theses sgovernment. Understanding tax according to Sommerfeld in(Mar, 2017)is a msandatory transfer of ressources from the private sectors to the governmesnt sector based on regulations without a direct and balanced return. This tax sis intendeds so that thes governmesnt can carsry out its us duties in running thes government.

conceptual framework

![Picture 1. conceptual framework](image)

The conceptual framework in Figure 1 above explaisns the influences between the independents and dependents variables, namely the effecst of forsmal smalls industry production (x1) and the realizations of tax revenues (x2) on economic growth (y) which will be tested partially by using the t test, and together sall the independent variables on the dependendent using the f tests.

Hypothesis
The alternatives hypotheses given in this study are as follows:

H1: It is suspected that Formals Small Industry Production has a positive and significant effect to Economics Growth in Aceh Utara Districts.

H2: It is suspected that the Realizations of Tax Revenues has a positive and significant effect to Economics Growth in Aceh Utara Districts.

3. RESEARCH METHOD
Research object and location
The research objects used in this study are the Formals Small Industry Production and Taxes Revenue Realizations in North Aceh Regency as independents variables and Economics Growth in North Aceh Regency as the dependent variable. The research location is in North Aceh Regency.

Types and Sources of Data
The types of data to be analyzed in this study is quantitative data, namely secondary data during the 2010-2017 period obtained from various related agencies, namely the Central Statistics Agency (BPS) in North Aceh Regency.

Data collection technique
The data used in this research is secondary data, which is taken directly from the BPS of North Aceh Regency in the forms of the Aceh Utara Reports in Figures 2010-2017 which contains data on the productions of formal small industrial, the realization of tax revenues and the economics growth of North Aceh.

Operational Definition of Variables
The research variables that will be examined in this study can be defined as follows:
1. Economic Growth (Y)
   Economics growth, namely the process of increasing production capacity or the amounts of real remunerations for the use of productions factors in a certain year is greater than in the previous year, economics growth in this study is the amounts of economic growths in North Aceh Regency each years in percentage units.
2. Formal Small Industrial Production (X1)
   Formal small industrial productions is an effort to make or improve the functions of goods or to create a product from various raws materials used into ones high-value products. the amounts of formal small industries productions in Norths Aceh Regency is rupiah units.
3. Actual Tax Revenue (X2)
   The realizations of tax revenues is an obligatory contribution paid by the public to the state directly or indirectly and used for state need. the amounts of realized tax revenue in North Aceh Regency is rupiah units.

Data analysis method
Regression Analysis
The general form of multiple linear regressions can be written as follows:
\[ Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \epsilon \]

Meanwhile, to determine the significances level of each of the regression coefficients of the independents variables on the dependent variable, the researchers used the classical assumptions test, t-statistical test, F-statistic test, and analysis of the coefficient of determination (R2).

Classic assumption test
Normality test
According to Gujarati (2009) states that the normality test is a test where if the probability is greater than alpha 1 percent, the normality test is accepted. Another justification for this test is to compare the calculated JB values with \( \chi^2 \) table, if JB's count <2 table then the residual is normally distributed. Meanwhile, according to Sunyoto (2011) The normality tests is a test that will tests the independents variable datas (X) and the dependent variables data (Y) in the resultings regressions equation that is normally distributed or not normally distributed.

Autocorrelation Test
According to Ghozali (2010) Autocorrelations test aims to test whether the linear regression models has a correlations between the confoundings error in periods t with the confoundings error in periods t-1 (before). If there is a correlation, it is called an autocorrelations problem. Autocorrelations can occurs because successive observationss over time are related to one another. This problems arises because the residual (disturbance error) is not free from time...
series (time series) because disturbances in an individuals / group tends to affect the same individuals / group in the next periods. In this study, to test the presence or absence of autocorrelations symptomss using the Durbins Watsons test (DW test).

**Multicollinearity Test**

Multicollinearity is a conditions where there is a strong correlation between the independents variables (X) which is involveds in the formations of the linears regressions model. (Gujarati, 2006). The multicollinearity test wass carried outs to see wethers the regressions model founds a correlations between the independents variables (X). If there iss a high correlations, then the regressions model will occur multicollinearitys.

**Heteroscedasticity Test**

This heteroscedasticity problems arises whens the residuals of the regressions model we observes have variantss that arse not constants from one observations to another (Hasan, 2002). This means that eachs observations has a differentss reliability due to changes in the underlyings conditionss not includeds in the models specifications. In facts, one of the importants assumptionss in the OLS or multiples regressions models is thats the variancse is homoschedastics.

**Hypothesis test**

To test the correctnes of the regressions model, statisticals esting is requireds including:

**T-statistic test**

According to Ghozali (2006), statisticals test or t test aimss to see the significants effect of the independents variable individuallys on the dependents variables by assumings the other independents variables are constants.

1. If t arithmetic> t table, thenes the explanatorys variable individuallys affects theses describdes variable significantsly.
2. If t count < t table, then theses explanatorys variable individuallys does not affects the explaineds variable significantsly.

**F-statistic test**

To determine the overall significance level at the 95% confidence level, hypothesis testings is done by using the F test. Gujarati (2006), the F test is carried out by comparing the F counts with the F tables, if F count> F table, looks for in tables F with a significances level of 1%, meanings that (X1), (X2), and (X3), together affects (Y).

**Coefficient of Determination (R2)**

This coefficients value rangess from 0 (zero) to 1 (one). The greater the coefficients value, the more independents variabless are ables to explains the variations in the dependents variable. The value of the coefficients of determinations is a measures that shows sthe contributions of the independents variable to the dependents variable, or in others words sthe coefficients of determinations measurers the variations of the derivatives of Y whichs is explains by the effects of X. dependents variable$R^2$ (Gujarati, 2009).

**Correlation Coefficient (R)**

According to Supranto (2009) Correlations analysiss is a way to determines whethers or not the relationships between the independents variable (X) and the dependents variable (Y) is strong, if it is stateds by a linears function and measureds by a values called the correlations coefficient. The correlations coefficient can be expresseds by the followings formula:

$$r = \frac{n(\sum XY) - (\sum X)(\sum Y)}{\sqrt{n(\sum X^2) - (\sum X)^2})(n(\sum Y^2) - (\sum Y)^2)}$$

Information :

n = Amount of data
X = Independent Variable
Y = Dependent Variable
r = Correlation Coefficient

4. **RESEARCH RESULTS AND DISCUSSION**

**Research result**

**Classical Assumption Test Results**

**Normality Test Results**

![Normality Test Results](image)

Source: Processed Data (2019)

**Figure 2**
Histogram-Normality Test Results

Based on the test results shown in the picture above, the Jarque-Bera value is 2.29, while the Chi Square value by looking at the number of independent variables we use, in this case 2 independent variables and the significant value we use in this case is 0.01 (1%), the Chi Square value is 9.21, which means that the Jarque-Bera value is smaller than the Chi Square value (2.29 < 9.21) and the probability is 0.31 > 0.01. It can be concluded that the production of formal small industries and the realization of tax revenues on economic growth in North Aceh Regency, the residual data in this study are normally distributed.

Autocorrelation Test Results

<table>
<thead>
<tr>
<th>Hipotes Nol</th>
<th>Keputusan</th>
<th>Jika</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tidak ada autocorrelasi positif</td>
<td>Tidak</td>
<td>0 &lt; d &lt; dl</td>
</tr>
<tr>
<td>Tidak ada autocorrelasi positif</td>
<td>No Decision</td>
<td>dl &lt; d &lt; du</td>
</tr>
<tr>
<td>Tidak ada korelasi negatif</td>
<td>Tidak</td>
<td>4 – dl &lt; d &lt; 4-</td>
</tr>
<tr>
<td>Tidak ada korelasi negatif</td>
<td>No Decision</td>
<td>4- du &lt; d &lt; 4-d</td>
</tr>
<tr>
<td>Tidak ada autocorrelasi, positif, negatif</td>
<td>Tidak diolate.</td>
<td>du &lt; d &lt; 4 - du</td>
</tr>
</tbody>
</table>

Table 2
Autocorrelation Test Results

The results obtained are the Durbin Watson value of 1.84, comparison using a significance value of 5%, the year used 32 (n), and the number of independent variables 2 (k = 2), then the Durbin Watson table will get the dl value of 1.30 and the value du value of 1.57, then the 4-dl value of 2.70 and the 4-du value of 2.43. Because the DW value of 1.84 is greater than the upper limit (du) 1.57 and less than 4 - 1.57 (2.23), it can be concluded that there is no positive and negative autocorrelation.

Multicolinearity Test

The test results are as follows:

<table>
<thead>
<tr>
<th>Nilai DW</th>
<th>1.84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nilai signifikansi (α)</td>
<td>1%</td>
</tr>
<tr>
<td>n_tahun</td>
<td>32</td>
</tr>
<tr>
<td>k = variabel independen</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 3
Multicolinearity Test Results

Based on the table above, it can be seen that the x1 correlation coefficient is 0.18 or (0.18 < 0.8), and the x2 correlation coefficient is 0.73 or (0.73 < 0.8) because the correlation coefficient is smaller than 0.8, and x1 with x2 = 0.25 which means 0.25 < 0.80 then in this model does not indicate multiko. This shows that there is no multicollinearity in the production of formal small industries and the realization of tax revenues in Aceh Utara District.

Heteroscedasticity Test Results

The Obs * R-Square value is 8.34, compared to the X2 table at df (2) with α = 1% is 9.21. So based on these results it can be concluded that 8.34 < 9.21, so in this model there is no indication of heteroscedasticity. This can also be seen from the probability value of 0.0154 > 0.01.

Multiple Linear Regression Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>106.64</td>
<td>9.024258</td>
<td>11.81684</td>
<td>0.000</td>
</tr>
<tr>
<td>LOG(X1)</td>
<td>0.823500</td>
<td>0.105280</td>
<td>7.736428</td>
<td>0.000</td>
</tr>
<tr>
<td>LOG(X2)</td>
<td>-5.034870</td>
<td>0.353241</td>
<td>-14.25337</td>
<td>0.000</td>
</tr>
<tr>
<td>AR(1)</td>
<td>0.869208</td>
<td>0.158634</td>
<td>5.479340</td>
<td>0.000</td>
</tr>
<tr>
<td>SIGMASEQ</td>
<td>0.154735</td>
<td>0.036721</td>
<td>4.213784</td>
<td>0.0003</td>
</tr>
</tbody>
</table>

The basic model of research is: \( Y_t = \beta_0 + \beta_1 \ln X_{1t} + \beta_2 \ln X_{2t} + \varepsilon_t \) and the result is: \( PE_t = 106.64 + 0.82 \ln X_{1t} - 5.03 \ln X_{2t} \), namely where:
Constant = 106.64
If the formal small industrial production and the realization of tax revenue are constant, then the economic growth will be constant at 106.64 percent.
Parameter $\beta_1 = 0.82$

The variable of formal small industry production is 0.82. If the formal small industry production increases by 1%, then the economic growth will increase by 0.82%, assuming constant tax revenue realization.

Parameter $\beta_2 = -5.03$

The variable of tax revenue realization is -5.03. If the tax revenue realization increases by 1%, then the economic growth will decrease by 5.03%, assuming constant small formal industrial production.

Hypothesis Test Results
Partial Test Result (t test)

The statistical test is a partial test of the coefficient of the independent variable. This test is done to see the significance level of the independent variables individually in influencing the variation of the dependent variable. This test is done by comparing $t_{statistics}$ on the regression results with $t_{table}$. that is:
1. If $t_{count} > t_{table}$, then $H_1$ is accepted, which means that the explanatory variable individually affects the explained variable significantly.
2. If $t_{count} < t_{table}$, then $H_1$ is rejected, which means that the explanatory variables individually do not significantly influence the variables explained.

The partial test is obtained by looking at $t_{table}$ at $\alpha = 1\%$, is $(nk) = 32 - 3 = 29 = 2.75639 = 2.76$. Partial test results can be seen in table 4.6 above by comparing the t-count value with the t-table value. To get the t-table $(nk) = (32 - 3) = 29$ at $\alpha = 1\%$, then the t-table is 2.75639 or 2.76.

1. The formal small industry production variable has a value of $t_{count} > t_{table}$ or 7.53 > 2.76, then reject $H_0$ and accept $H_1$, this means that the production of formal small industries has a significant and positive effect on economic growth in North Aceh District. This can also be seen from the probability of 0.00 < 0.01.

2. Furthermore, the tax revenue realization variable has a value of $t_{count} > t_{table}$ or -14.25 > 2.76, then $H_0$ and accept $H_2$, meaning that the realization of tax revenue has a significant and negative effect on economic growth in Aceh Utara Regency. This can also be seen from the probability of 0.00 < 0.01.

Concurrent Test Results (Test F)

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>121.5672</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prob (F-statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Results of data processing, 2020.

Based on the test results simultaneously or jointly from the table above, it can be concluded that the Fcount value of 121.56 is greater than Ftable, which is 5.42, meaning that the variables of formal small industry production and the realization of tax revenue are jointly influential and significant on economic growth in North Aceh District. This can also be seen from the prob. A total of 0.00 < 0.01.

Coefficient of Determination R2

<table>
<thead>
<tr>
<th>R-squared</th>
<th>0.947396</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R-squared</td>
<td>0.939603</td>
</tr>
</tbody>
</table>

Source: Results of data processing, 2020.

From the results of data processing Adjusted R-Squared (R2) of 0.9396 so the amount of influence formal small industry production variables and the realization of tax revenues on economic growth in North Aceh District is 0.9396 (93.96%), and the remaining 0.0604 (6.04%) is influenced by other variables outside this model.

Correlation Coefficient (R)

According to Supranto (2009) Correlation analysis is a way to determine whether or not the relationship between the independent variable (X) and the dependent variable (Y) is strong, if it is stated by a linear function and measured by a value called the correlation coefficient.

From the results of the correlation coefficient test in Table 4.8, it can be seen that ($R = \sqrt{R^2} = \sqrt{0.9474} = 0.9733$). So the relationship between Formal Small Industry Production and the realization of tax revenue has a very strong positive relationship because the correlation value of 0.9733 is close to positive one (+1).

Discussion
The Relationship between Formal Small Industry Production and Economic Growth

Based on partial testing, it can be concluded that the formal small industry production
variables have a significant and positive effects on economic growths in North Aceh Regency, the ups and downs of small industrial production do not result in fluctuations in economic growths. This is in accordance with previous research conducted by Putra & Sutrisna (2017), Effect of Productions and Inflation on Economic Growth. The results showed that production had a positive effect on economic growths.

The Relationship between Tax Revenue Realization and Economic Growth

Based on the partial test, it can be concluded that the tax revenue realization variable has a significant and negative effects on economic growths in North Aceh Regency. This is in accordance with the research conducted by Dewi & Budhi (2018), Analysis of the Effects of Local Taxes, Regional Charges on Labor and Economic Growths in Palangka Raya City, Central Kalimantan Province. Where local taxes affect economic growth.

PAD, especially from the regional tax sector, will encourage the economy and developments in a region and can run smoothly and can encourage the growths of the private sectors and households in allocating existing resources in an area which will lead to increased economic growth.

The Relationship between Formal Small Industry Production and Tax Revenue Realization and Economic Growth

Based on the simultaneous regression results, the variables of Formal Small Industry Production and Tax Revenue Realization have a significant and significant effects on Economic Growths. From the results of data processing, Adjusted R-Squared (R2) of 0.9396 so the amount of influence formal small industry production variables and the realizations of tax revenues on economic growths in North Aceh District is 0.9396 (93.96%), and the remaining 0.0604 (6.04%) is influenced by other variables outside this model.

b. The results of the research partially show that the productions of small formal industries have a significant and positive effect on economic growths in North Aceh Regency, has a value of tcount > ttable or 7.53 > 2.76 and can also be seen at a probability value of 0.00 < 0.01.

c. The results of the researches partially show that the realizations of tax revenue have a significant and negative effect on economic growths in Aceh Utara Regency, has a value of tcount > ttable or -14.25 > 2.76 and can also be seen at a probability value of 0.00 > 0.01.

Suggestion

Based on the results of research conducted by researchers, there are several suggestions, namely:

a. For academics, there is a need for further research using the same variables in all districts and cities throughout Indonesia. This aims to have a wider coverage and not only parts of the area. So that every incident in the region can be known by the public.

b. For the North Aceh District Governments to be able to maximize its efforts to increase economic growth, this development is very important, because it can increase production and consumption of the community, as well as provide welfare to the people in the future.

c. The government needs to make changes in the development of economic growths, in which case collaborating with all elements of society so that regional achievements reach the communities in the forms of regional welfare in North Aceh Regency.
REFERENCES


