

Analysis of Economic Development Inequality in Sumatera Utara Province

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ABSTRACT

This study aims to analyze of economic development inequality in Sumatera Utara Province in the period 1993 to 2018 and identify the factors that significantly influence the inequality.

The data used by researchers are secondary data consisting of time series data from 1993 to 2018 obtained from the Central Statistics Agency (BPS) of Sumatera Utara Province.

The results of this study concluded that economic development inequality in Sumatera Utara Province as measured by the Williamson index in the period 1993 to 2018 tended to fluctuate. Based on the results of data processing outputs, it can be concluded that investment has a negative and not significant effect on economic development inequality in Sumatera Utara Province. The work force has a positive and significant effect on economic development inequality in Sumatera Utara Province. The allocation of regional development assistance funds has a negative and significant effect on economic development inequality in Sumatera Utara Province. Investment, work force, allocation of regional development assistance funds together have a significant effect on economic development inequality in Sumatera Utara Province. Economic development inequality in Sumatera Utara Province can be explained by variations of the three independent variables namely investment, work force, allocation of regional development assistance funds by 80.7 percent while the remaining 19.3 percent is explained by other factors outside the model.

Keywords: Investment, Work Force, Allocation of Regional Development Assistance Funds, Economic Development Inequality

INTRODUCTION

The journey of economic development has caused various changes, especially in the structure of the economy. Changes in economic structure are one of the characteristics that occur in economic growth in almost every developed country. Based on historical records of this sectoral growth rate, including a gradual shift from agricultural activities to non-agricultural activities and recently, from the industrial sector to the service sector (Arsyad, 2010: 75). Regional development as an integral part of national development is a process of planned change in an effort to achieve goals and objectives to improve the welfare of the

community which involves all existing activities, through community support in various sectors.

Rapid economic growth will lead to unequal distribution of income, this is because it does not pay attention to whether the growth is greater or smaller than the rate of population growth, or changes in economic structure. The process of the speed of economic growth in a region is demonstrated by using the level of GRDP (gross regional domestic product), so that the level of GDP per capita development achieved by the community is often a measure of the success of a region in achieving its goals to create economic

development (Sukirno, 2009). From a macroeconomic growth and increase in the GRDP from year to year is an indicator of the success of regional development that can be categorized in various economic sectors, namely: agriculture, mining and quarrying, the processing industry, electricity, gas and clean water, buildings, trade, hospitality and restaurants, transportation and communication, finance, leasing and business services, other service sectors. The greater the contribution made by each economic sector to a region's GRDP, the better it can carry out economic growth.

Inequality, equity and infrastructure have actually been known for a long time in Indonesia, for example, behind the labor-intensive programs of various infrastructure developments, such as roads, rivers, irrigation, electricity, telephones, health services, education and others. Inequality that is most commonly discussed is economic inequality. Economic inequality is often used as an indicator of the difference in average per capita income, between income level groups, between employment groups, and / or between regions. The average per capita income of a region can be simplified into gross regional domestic product divided by the population. Another method that can be used is to base it on personal income approached by the consumption approach (Widiarto, 2001).

In measuring regional economic development inequality the Williamson index is used. Regional economic inequality in Indonesia as measured by the Williamson index from 1971 to 1990 ranged from 0.396 to 0.484. This shows an increase in regional economic inequality but is still relatively moderate. The regional economic inequality index from 1991 to 1997 ranged from 0.643 to 0.671, which meant a significant increase (Sjafrizal, 2008).

Empirical studies from Brodjonegoro (1999) and Mahi (2000) using the GDP per capita according to the 1993 constant prices indicate that the 1995 Williams index was 0.716. In 1996, the Williamson index fell to 0.712. And in

1997, the Williamson index rose to 0.713 as a result of the economic crisis in Indonesia (Tambunan, 2001).

However, Regencies / Cities in Indonesia which have relatively large profits from natural resources are only 6 provinces (20%) and from 350 Regencies / Cities to less than 20 districts / cities (5%) that enjoy large revenue sharing (Simanjuntak, 2001). These symptoms are consistent with the conclusions of research conducted by the United Nations Support Facility for Indonesian Recovery (UNSFIR), which states that the striking difference between regional wealth and the welfare of its people in areas rich in natural resources has raised the collective awareness of the community towards something which should be enjoyed, which is called aspiration for inequality. This aspiration reflects a sense of injustice that arises when the level of welfare of the people in rich areas is the same or even lowers than Indonesian society in general (Tadjoeddin, 2001). In East Kalimantan, 915 villages or 72.7 percent of the 1,295 villages were classified as poor. While in Riau Province 20 percent of the 4.2 million populations live in underprivileged conditions and nearly 70 percent of the workforce has low education.

Another measurement tool for regional economic development inequality uses the Gini ratio. According to the Regulation of the Minister of Manpower and Transmigration of the Republic of Indonesia Number Per.25 / MEN / IX / 2009 concerning the level of development of transmigration settlements, the gini ratio is a measure of income distribution calculated based on income classes in 10 income classes. The longer the distance of the Lorenz curve from the diagonal line, the higher the level of inequality. Conversely, the closer the Lorenz curve from the diagonal line, the higher the level of distribution of income distribution.

Sumatera Utara Province consists of 33 regencies / cities that have background differences between regions. This difference is in the form of differences in the

characteristics of nature, social, economic, and natural resources whose distribution is different in each District / City. This difference becomes an obstacle in the distribution of economic development, due to the concentration of an economic activity that has an impact on increasing economic growth in several regencies / cities that have abundant natural resources. Natural resources possessed should be able to make added value in increasing economic development. The advantages possessed are expected to have a spread effect. It's just that this natural wealth is not evenly owned by all regions in Sumatera Utara Province. This has become one of the causes of inequality or disparity between regions.

Inequality in Sumatera Utara Province is caused by differences in natural, social, economic, and natural resource characteristics that are spread differently in each District / City. Economically, this is seen in the value of Regency / City GRDP, investment, labor force, and the allocation of regional development assistance funds. Based on data from the Central Statistics Agency of Sumatera Utara Province, the economy of Sumatera Utara Province in 2018 was 5.18 percent, higher than 2017 which was 5.12 percent. This acceleration was mainly due to increased domestic demand related to the optimal realization of regional government spending at the end of the fourth quarter of 2018. Sectorally, the limited economic growth came from the manufacturing and construction industries. This slowing down of economic growth by investment and household consumption. In line with the rate of economic growth in North Sumatra which increased in 2018, employment and welfare conditions in Sumatera Utara Province also improved. Several indicators confirm, among others, the open unemployment rate (TPT) decreased by 5.56 percent in 2018, which previously in 2017 was 5.60 percent, the poverty rate also declined from 9.28 percent in 2017 to 8.94 percent in 2018. This indicates that the quality of economic growth in Sumatera Utara Province is

improving. Meanwhile, the allocation of regional development assistance funds consisting of general allocation funds in 2018 amounted to Rp2629.22 billion and special allocation funds in 2018 amounted to Rp4082.13 billion.

The allocation of development assistance funds for Sumatera Utara Province in 2018 based on the North Sumatra report in 2019 amounting to Rp6,711.35 billion, which consisted of general allocation funds of Rp2,629.22 billion and special allocation funds of Rp4,082.13 billion . For this reason, regional development is needed as part of national development. In order to increase national development, it must be supported by regional development carried out in a harmonious and integrated manner in order to achieve harmony and balance in national development.

Development is essentially a planned and programmed effort that is carried out continuously to create a better society. Development can be done through a regional approach (regional development) or sectoral approach (regional development). Regional development places more emphasis on regional approaches in an administrative and sectoral approach, which is directed to further develop and harmonize growth rates between regions, between cities, between villages, the implementation of which is adjusted to regional priorities and regional development as optimal as possible with due regard to development impacts.

Hypothesis

Based on the background and the formulation of the problem, the hypotheses in this study include:

1. Investment has a negative effect on inequality in economic development.
2. The labor force has a negative effect on inequality in economic development.
3. The allocation of regional development assistance funds negatively affects inequality in economic development.

- Investment, labor force, and allocation of regional development assistance funds have a joint (simultaneous) effect on inequality in economic development.

MATERIAL AND METHODS

This research is focused on analyzing economic development inequality in Sumatera Utara Province. This research was conducted in Sumatera Utara Province, using econometrics methods with secondary data that are quantitative in nature with a time series from 1993 to 2018.

In this study, the dependent variable is the inequality variable of economic development (Y). The economic development inequality variable, which is an index of economic development inequality in Sumatera Utara Province, was measured using the Williamson formula. Then as an independent variable used in this research are investment (X1), labor force (X2), allocation of regional development aid funds.

The data used in this study is to use secondary data in the form of time series data in annual form starting from 1993 to 2018. Data sources are obtained from the Central Statistics Agency, the Investment Coordinating Board and related Agencies or Institutions.

The data analysis method used in this research is the least square method (OLS). This method is believed to have ideal and superior features, which are technically very strong, easy to calculate and withdraw their interpretations (Gujarati, 2003).

RESULTS AND DISCUSSION

Classical Assumption Testing

Multicollinearity Test

Multicollinearity is a symptom of independent variables that correlate strongly

with each other. To find out the existence of independent variables with strong correlations can be seen by means of the test variance inflations factor (VIF).

Decision-making:

- VIF > 10, then it is suspected to have multicollinearity problems.
- VIF < 10 then there is no multicollinearity.

The results of data processing with the Eviews7 program show that the coefficient values of all variables from the VIF test are greater than 10. Thus, it can be concluded that overall the variables are free from multicollinearity symptoms.K

Variance Inflation Factors			
Date: 12/09/19 Time: 07:06			
Sample: 1993 2018			
Included observations: 26			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	3.473846	75981.76	NA
LNX1	0.006388	47186.92	6.352173
LNX2	0.010954	56871.88	2.595916
LNX3	0.000231	893.5387	7.156559

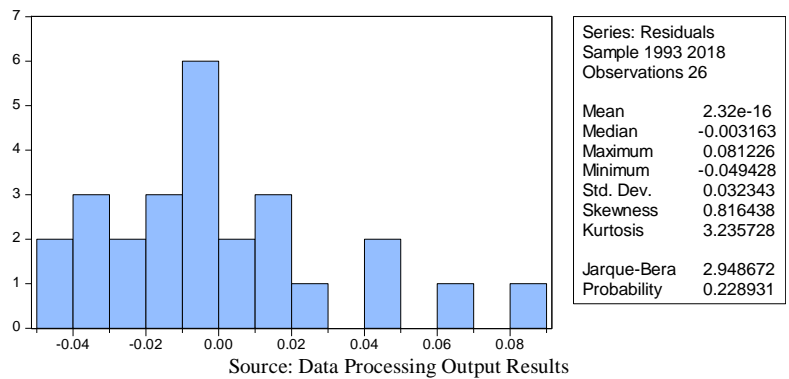
Source: Data Processing Output Results

Normality test

The normality test aims to test whether in the regression model, confounding or residual variables are normally distributed. Based on the results of data processing with the Eviews7 program, it can be informed about the existence of normality obtained. To see the residual normality the researchers analyzed and compared the probability value with an error rate of 0.01.

Decision-making:

- The probability value > 0.01 then the residuals are normally distributed.
- The probability value < 0.01 then the residuals are not normally distributed.



Residual normality test results above show a probability value of $0.228931 > 0.01$, which means that the residuals are normally distributed.

Heteroskedasticity Test

Heteroskedasticity test in principle wants to test whether a group has different variances among group members. In this study, the method used to detect heteroskedasticity was carried out using the Godfrey Pagan Breusch test.

Decision-making:

1. Probability value > 0.01 , then there is no heteroskedasticity problem.
2. The probability value < 0.01 then has a heteroskedasticity problem.

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	5.511713	Prob. F(3,22)	0.0056
Obs*R-squared	11.15641	Prob. Chi-Square(3)	0.0109
Scaled explained SS	8.929189	Prob. Chi-Square(3)	0.0302

Source: Data Processing Output Results

The probability value is indicated by the value of prob. chi-square (3) in obs * r-squared that is equal to 0.0109. Therefore the probability value is $0.0109 > 0.01$, which means the regression model is free from heteroskedasticity symptoms.

Autocorrelation Test

Results of Investment Regression, Labor Force, Allocation of Regional Development Assistance Funds to Inequality in Economic Development.

Variable	Coefficient	Prob.	Information
Constant	-4,940	0,014	Observation (n) 26
LN _X ₁ (Investation)	-0,070	0,386	
LN _X ₂ (Labor Force)	0,469	0,000	
LN _X ₃ (Allocation of Regional Development Assistance Funds)	-0,068	0,000	
R ² = 0,807			
Prob. F = 0,000			

Source: Data Processing Output Results

Autocorrelation test is used to test whether in the linear regression model there is a correlation between the error of the intruder in the t period and the error of the intruder in the t-1 period (before). In this study, the method used to detect heteroscedasticity was performed using the Breusch-Godfrey serial correlation LM test.

Decision-making:

1. Probability value > 0.01 , then there is no autocorrelation problem
2. The probability value < 0.01 has an autocorrelation problem.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.408614	Prob. F(2,20)	0.1155
Obs*R-squared	5.046814	Prob. Chi-Square(2)	0.0802

Source: Data Processing Output Results

Chi square probability value (2) which is the probability value of breusch-godfrey serial correlation lm test, which is $0.0802 > 0.01$ so there is no autocorrelation problem.

Multiple linear regression

Based on secondary data, to see the effect of investment, the labor force, the allocation of regional development aid funds to economic development inequality can be analyzed the statistical coefficients of each variable.

Based on the results of the estimation model of the economic development inequality function presented in the table, the following equation is obtained:

$$Y = - 4,940 - 0,070LNX1 + 0,469LNX2 - 0,068LNX3$$

Analysis of the results of the estimation model can be interpreted as follows:

1. Partial Effect of Variables

a. Constants (a)

Based on the table it can be seen that the constant coefficient is -4,940. This coefficient gives the meaning that in a fixed or no change in the investment variable (X1), labor force (X2), regional development assistance fund allocation (X3), the value of economic development inequality (Y) remains at 4.940 percent.

b. Investment Coefficient (X1)

Based on the table above it can be seen that the coefficient of investment of empirical results is -0.070. The empirical coefficient of investment variables shows a negative effect which means that if investment increases by one percent per year by assuming other factors are fixed (cateris paribus), it will reduce economic development inequality by 0.070 percent.

c. Labor Force Coefficient (X2)

Based on the above table it can be seen that the coefficient of the empirical work force is 0.469. The empirical coefficient of the labor force variable shows a positive effect which means that if the labor force increases by one percent per year by assuming other factors remain (cateris paribus) then it will add to economic development inequality by 0.469 percent.

d. Regional Development Assistance Fund Allocation Coefficient (X3)

Based on the table above, it can be seen that the coefficient on the allocation of regional development assistance funds is empirical of -0.068. The empirical coefficient of the variable allocation of regional development aid funds shows a negative effect which means that if regional development aid funds increase by one percent per year by assuming other factors are fixed (ceteris paribus), this will reduce economic development inequality by 0.068 percent.

Coefficient of Determination (R-Square)

Based on Table 4.7, the results of empirical models show R2 of 0.807 between 50 <R2 <0.90. This gives meaning that the empirical model that is built about economic development inequality is determined by the investment variable (X1) of the labor force (X2), the allocation of regional development assistance funds (X3) is not good because R2 = 0.807 <0.90.

The coefficient of determination (R-Square) of 0.807 provides information that together with the investment variable (X1) of the labor force (X2), the allocation of regional development assistance funds (X3) is able to provide a variable variation in economic development inequality (Y) of 80.7 percent, while the remaining 19.3 percent is explained by other factors not included in this research model.

Partial Test (t Test)

The degree of probability value is obtained from the processing of the Eviews7 program as shown in the following table:

Results of Investment Regression, Labor Force, Allocation of Regional Development Assistance Funds to Inequality in Economic Development

Variable	Coefficient	t count	Prob.	Information
X ₁ (Investation)	-0,070	-0,884	0,386	Not Significant
X ₂ (Labor Force)	0,469	4,484	0,000	Significant
X ₃ (Allocation of Regional Development Assistance Funds)	-0,068	-4,519	0,000	Significant

Source: Data Processing Output Results

Based on the hypothesis test criteria from the Table, it can be seen that:

$$Y = - 4,940 - 0,070LNX1 + 0,469LNX2 - 0,068LNX3$$

a. Investment Value (X1)

The probability value for the investment variable is 0,000 at a confidence level (α) of 5%, so it can be concluded that partially the investment variable has a negative and insignificant effect ($0.386 > 0.05$) on inequality in economic development in Sumatera Utara Province.

b. Labor Force Rating (X2)

The probability value for the labor force variable is 0,000 at a confidence level (α) of 5%, so it can be concluded that partially the labor force variable has a positive and significant effect ($0,000 < 0.05$) on inequality in economic development in Sumatera Utara Province.

c. Value of Allocation of Regional Development Assistance Funds (X3)

The probability value for the variable allocation of regional development aid is 0,000 at a level of confidence (α) 5%, so it can be concluded that partially the variable allocation for regional development assistance has a negative and significant effect ($0,000 < 0.01$) on inequality in economic development in Sumatra Province North.

Test Simultaneously (Test F)

Coefficient F Probability

Prob(F-statistic)	Information
0,000	Significant

Source: Data Processing Output Results

Based on the above analysis, the value of prob. F is $0,000 < \text{confidence level } (\alpha) 0.01$. Thus, H_0 is rejected and H_a is accepted. This shows that the investment variable (X1), labor force (X2), allocation of regional development assistance funds (X3) simultaneously have a significant effect on the imbalance of economic development (Y) in Sumatera Utara Province.

DISCUSSION

Effect of Investment on Inequality in Economic Development

The results show that investment has a negative and insignificant influence on economic development inequality, which

means that if investment increases it will reduce economic development inequality.

Investment is a form of investment in a particular company or country. Investment can take the form of domestic investment and foreign investment or also the formation of gross fixed capital. With the addition of investment, it can absorb labor. This is because in the process of producing goods and services that increase in turn will absorb the labor force. So that the worker gets wages, and the worker has purchasing power. Thus, the more investment used to process the production of goods and services, the more labor can be absorbed so that there is an equitable distribution of income per capita (Sukirno, 2009).

Investment in the form of domestic investment and foreign investment or also the formation of gross fixed capital negatively affects the imbalance of economic development in Sumatera Utara Province, which means that an increase in investment will result in economic activity and increased prosperity of the population so that inequality will decrease. The results of this study are in line with previous studies by Hartono (2008), Hidayat (2014), Hartini (2017) that investment has a negative and significant influence on inequality in economic development.

However, this negative effect does not have a significant effect on reducing inequality in economic development as it is caused by the lack of investment from a company or country at home or abroad, the lack of facilities and investment incentives, investment has not been directed at less developed areas and facilities and infrastructure that does not yet support investment. The more significant an investment in the production of goods and services in theory will occur labor absorption so that the worker gets wages and purchasing power. Thus, there is an even distribution of income per capita.

Effect of the Labor Force on Inequality in Economic Development

The results show that the labor force has a positive and significant influence on economic development inequality, which means that if the labor force increases, economic development inequality also increases.

The large supply or supply of labor in the community is the number of people who offer their services for the production process. Some of them are already active in their activities which produce goods and services called working groups or employed persons. Others are classified as ready to work and are trying to find work called job seekers or unemployed. The number of employed and job seekers is called the labor force (Simanjuntak, 2001). Opening new jobs will certainly absorb new workers so that the number of the workforce has increased. So that there is absorption of this workforce which will increase people's income which will ultimately increase people's purchasing power so that demand for goods and services is greater which then encourages producers to produce more and so on, thus economic activity will go well and economic inequality will decrease.

The number of the workforce has a positive influence on inequality in economic development. Means that increasing labor force will increase economic development inequality in Sumatera Utara Province. This is because the number of labor force each year is not in line with the absorption of the labor force itself, where in the labor market position, the labor force supply is less than the demand for labor force and there are wage problems that some of the labor force is paid or underpaid regional minimum (UMR) or cumulative minimum wage (UMK) so that in the end there is a decline in people's income and people's purchasing power of the demand for goods and services so that economic activity will run poorly and economic inequality will increase.

The results of this study are in line with previous studies by Putri (2016), Danawati, Bendesa, Utama (2016), Rahma (2018). But contrary to the research of Feni (2018) which states that an increased labor

force means an increase in economic activity and the level of prosperity, so that inequality has decreased.

The Effect of Allocation of Regional Development Assistance Funds on Economic Development Inequality

The results showed that the allocation of regional development aid funds had a negative and significant effect on inequality in economic development, which meant that if the allocation of regional development aid funds increased it would reduce economic development inequality.

Regional development assistance funds are one source of finance to carry out regional development. Basically, in carrying out development, funding sources are needed. To achieve the success of a development program is very dependent on the use of available resources. However, the potential and utilization of these resources varies between regions. According to Marisa and Hutabarat (2008) identified that inequality and variations in income distribution have a positive relationship with the distribution of control of the factors of production. Thus it is not surprising that the success of development between regions varies. So there is a need for central government intervention to reduce development disparities between regions, for example by providing assistance to regions to accelerate regional development. The allocation of aid funds from the central government to regional governments is the development expenditure of the central government to the Regency / City areas.

The results of this study are in line with previous studies by Saifunnizar (2013), Putri (2016). However, in contrast with Hartono's (2008) research, Feni (2018) stated that the allocation of regional development aid funds has a positive influence on economic development inequality, which means that if the allocation of regional development aid funds increases it will increase economic development inequality.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Investment has a negative and not significant effect on inequality in economic development in Sumatera Utara Province.

The workforce has a positive and significant influence on inequality in economic development in Sumatera Utara Province.

The allocation of regional development assistance funds has a negative and significant impact on economic development inequality in Sumatera Utara Province.

Investment, labor force, government expenditure together (simlutan) have a significant effect on inequality in economic development in Sumatera Utara Province.

RECOMMENDATIONS

Increase investment by providing facilities and investment incentives so that investors want to invest their capital. Investment is also directed at regions that are less advanced by building facilities and infrastructure that support investment.

Increasing the number of the workforce must be balanced with more employment opportunities. Of course, the investment activities above can increase employment opportunities. Job opportunities should also be created in all regions and do not prioritize certain regions.

The imbalance of per capita income between regions has led to the importance of development assistance from the central government. Development assistance provided by the central government to regencies / cities should be adjusted to the situation and conditions in their respective regions so that it is hoped that disadvantaged regions will be able to catch up with developed regions. In order to make optimal use of development assistance funds, it is necessary to increase the role of supervision by both the authorized institutions and the community.

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