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Аналіз впливу економічного потенціалу на нерівність економічних зон в провінції Південна Суматра

Метою даного дослідження є аналіз впливу економічного потенціалу, представленого провідними та потенційними секторами економіки, на регіональну нерівність у 13 районах та 4 містах провінції Південна Суматра. Автори використовують аналітичні методи дослідження: вимірювання індексу Вільямсона для оцінки регіональної нерівності та аналіз коефіцієнта статичного розташування (SLQ) та динамічного коефіцієнта розташування (DLQ). Для аналізу методом панельної регресії відібрані статистичні дані за період 2011-2019 рр. Як свідчать результати дослідження, змінна SLQ має позитивний зв'язок і не робить істотного впливу на рівень регіональної нерівності. Виявлено, що галузевий економічний розвиток також збільшує регіональну нерівність. Економічний розвиток регіону на ранніх стадіях, як правило, характеризується виробництвом домінуючого сектору в економіці, на етапі економічного зростання виникають відхилення, що ведуть до збільшення нерівності між економічними зонами. Змінна DLQ показує постійне значення для відповідної моделі та має негативний ефект, це означає, що коли змінна DLQ збільшиться на 1 відсоток, нерівність між економічними зонами зменшиться на 0,0079 зі значенням ймовірності $0,0114 < 0,05$. Цей показник є критичною межею у 5 відсотків, а тому є статистично значущим. Таким чином, збільшення та розвиток потенційних секторів економіки, які в майбутньому будуть конкурентоспроможними, зможе зменшити нерівність на 0,0079. Розвиток потенційних секторів є наслідком інвестування (капітальних вкладень у виробництво), що сприяє появі нових робочих місць та стимулює підвищення продуктивності праці. Крім того, існуючі відмінності в характеристиках регіонів зумовлені також наявністю запасів природних ресурсів, що суттєво впливає на розвиток цих регіонів.

Ключові слова: індекс Вільямсона, регіональна нерівність, коефіцієнт статичного розташування, коефіцієнт динамічного розташування, типологія Классена.

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Analysis of the Influence of Economic Potential on Inequality of Economic Zones between Regencies / Cities in South Sumatra Province

This study aims to analyze how the influence of economic potential in the form of leading and potential sectors on regional inequality in 13 districts and 4 cities in South Sumatra Province. The analytical method used is the Williamson Index measurement to measure regional inequality and the analysis of Static Location Quotient (SLQ) and Dynamic Location Quotient (DLQ). The analysis technique uses panel data regression with the selection of the best model, namely Fixed Effect with the observation period from 2011 to 2019. The results show that the SLQ variable has a positive relationship and does not have a significant effect on the level of regional inequality. The influence coefficient of 0.0379 with a probability value of $0.1113 > 0.05$ (which is the critical limit of 5 percent) is not statistically significant. This condition shows that sectoral economic development will also increase inequality. Economic development in the early stages of a region is generally characterized by the production of the dominant primary sector in the economy, so that at the beginning of development, an increase in economic growth is also followed by an increase in inequality. DLQ shows the constant value of the applicable Fixed Effect model is -0.007971. And it has a negative effect, which means that when the DLQ increases by 1 percent, inequality will decrease by 0.0079 with a probability value of $0.0114 < 0.05$, which is the critical limit of 5 percent, so it is statistically significant, meaning that the increase and development of potential economic sectors that are competitive in the future it will be able to reduce inequality by 0.0079. This shows that there are increasing sectoral developments due to the investment factor of new capital goods in this potential sector which encourages increased labor productivity. There are differences in characteristics between regions, especially the availability of natural resources, causing these areas to be more advanced than other regions.

Keywords: *Williamson index, regional inequality, static location quotient, dynamic location quotient, Klassen typology.*

Introduction

To increase the contribution to total GRDP, the development of leading sectors can be used as a driver of economic development. A leading sector can be defined as a sector that is able to encourage growth or development for other sectors. The economic potential that exists in each region needs to be explored and utilized effectively and efficiently to support the development and economic growth of the region.

Rapid economic growth will lead to an inequality in income distribution because it does not pay attention to the growth of growth that is greater or less than the growth rate of changes in economic structure. One of the realities of development is the creation of a development enthusiasm, namely the reporting of differences in growth rates between regions and causing regions that lead to prosperity and progress between regions (Kuncoro, 2014).

The content of natural resources will affect production activities in the area concerned. Areas with high enough natural resource content will be able to produce certain goods at relatively low cost compared to other regions that have lower natural resource content. This condition

encourages faster regional economic growth. Meanwhile, other regions that contain smaller natural resources will only be able to produce goods with higher production costs so that their competitiveness is weak. This condition causes regions to tend to have slower economic growth (Sjafrizal, 2012).

Regional imbalance is an aspect that is common in every country, both poor countries, developing countries, even developed countries, although they have problems of development inequality between regions and of different sizes. This regional imbalance occurs because each region has differences in resources, labor and technology. As a result of this difference, the ability of a region to encourage the development process is also different, so it is called a developed region and a backward region (Harun, 2012).

Differences in inequality between regions can also be distinguished which regions are more severe, which have less or no inequality due not only to equal ownership of resources, but there must be a strategy or policy carried out by the government on what sectors are prioritized for development which will be followed later by other sectors to

develop as well. To see the inequality, a Williamson Index and regression can be used (Zarzoso, 2015).

From the description above, a survey is needed to see the effect of the economic potential and regional economic sectors between districts / cities, and to find out at any time large imbalances in the economic area between districts in the province of South Sumatra. Kemmudoan determines the leading sectors in each district / city so that economic growth can be achieved optimally and increase population income, thereby lowering inequality. With this background, this potentially sectoral economic situation is very important in the formulation of development strategies and policies as well as the preparation of development planning documents of a region.

Theoretical Basis

Economic growth is a process of increasing per capita income that lasts in the long term (Mankiw, 2012). From this definition, it is found that there are elements that must be present in growth, namely the process of increasing regional per capita income which takes place continuously in the long term.

Jhingan (2012) said that the size of the Gini ratio as a measure of fairer distribution in developing countries is a condition or condition that supports economic growth. Thus the more unequal income in a country will have a negative impact on economic growth. Income inequality between regions depends on the amount of revenue received by each area (certain areas within the region). The difference in the amount of income received causes a different income distribution, while the size of the difference will determine the level of income distribution (income inequality) in the area. Therefore, this income inequality depends on the size of the difference in the amount of income received by the income recipient. Unequal or not regional income can be measured by receiving income between certain regions, where the income received by the region can be seen in the value of Gross Regional Domestic Product (GRDP).

Meanwhile, income inequality is greater in countries that have just started development, while for developed countries or higher levels of income tends to be more evenly distributed or the level of inequality is low. This situation is explained by Todaro (2011): developed countries as a whole show a more even distribution of income compared to third world countries, namely developing countries. The distribution of income is divided into two main dimensions, namely the distribution of large size is the share of income received by each region and the functional distribution is the distribution of ownership of the factors of production. From the two definitions above, it can be concluded that the distribution of income reflects inequality or even distribution of the development results of a region or country, whether it is received by each region or from ownership of production factors among those regions (Todaro, 2011).

When there is an increase in the economic activity of the community, there is also an increase in the population. Therefore, this additional economic activity is used to improve the economic welfare of the community. If the growth (Gross Domestic Gross / GDP) is lower than population growth, then the per capita income will remain the same or tend to decline. This means that growth (Gross Domestic Gross / GDP) does not improve the level of economic welfare (Arsyad, 2010).

Inequality in each region is the inequality of income received from one region to another. In this study, inequality between regions is measured using the Gross Regional Domestic Product (GRDP) per capita, consumption, investment, government spending and net exports (Jhingan, 2012).

Literature Review

Based on a study conducted by Mondal (2019), it shows that the potential for industrial development in Malaysia has a base sector in the Klantan, Terengganu, Pahong and Johar Utara areas where the four regions have a unique industrial mix compared to other regions. This study uses a shift-share approach.

Another study shows that Yapen district has economic benefits in some of the business sectors, except for the mining sector and the manufacturing sector (Basuki, 2019).

The same thing was expressed by Prapti (2006), with case studies in 35 districts / cities of Central Java 2000-2004. This thesis aims to analyze the relationship between economic growth and income distribution in 35 districts / cities of Central Java by correlating it with the inverted "U" hypothesis proposed by Simon Kuznets.

Utama (2010) in this research aims to analyze the magnitude of disparities between regions and the economic growth of districts / cities, sectors that have the potential to be developed to encourage economic growth.

Furthermore, Sari (2013), in the analysis method used is the analysis of economic growth, Location Quotient (LQ), Shift-share, Klassen Typology, Williamson Index and inverted U Hypothesis.

Iswanto (2015) analyzes the magnitude of disparities between regions and economic growth, sectors that have the potential to be developed to encourage economic growth and development, to classify regions in districts / cities in East Java Province based on their growth rate and per capita income. The analytical method used is economic growth analysis, Location Quotient (LQ), Shift-share, Sectoral Typology, Klassen Typology, Williamson Index, Theil Index, Pearson Correlation and testing the validity of the Kuznets Hypothesis.

Conceptual Framework

Taking into account the theoretical basis and literature review, the author derives the following research hypothesis (Figure 1).

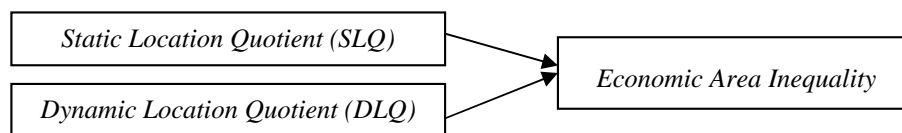


Figure 1. Research Framework

Source: built by the author.

Based on the theoretical basis, previous research and a framework of thought, the following hypothesis can be derived: It is suspected that the leading economic sectors and the potential economic sectors have an effect on the inequality of economic areas in regencies / cities in South Sumatra Province.

Model & Analysis

In this study using quantitative descriptive analysis techniques measured in a numeric scale which can be divided into interval data and ordinal ratio data using mathematical, statistical and econometric approaches. This analysis technique aims to determine the effect of the Leading Economic Sector (SLQ) and Potential Economic Sector (DLQ) variables on the inequality of economic development in 13 districts and 4 cities in South Sumatra Province.

This inequality criterion is obtained from the calculation of GRDP (Gross Regional Domestic Product) and the number of residents of each region to see sub-economic sectors such as agriculture, mining, industry, electricity, water, construction, trade, transportation, communication, food, financial services, corporate services, real estate, education, government administration, health and other services (Kuncoro, 2014). Williamson Index values range from 0-1 (positive). The greater the index value, the greater the level of income inequality between regions. Conversely, the smaller the index value, the smaller the level of inequality that occurs in the region. Meanwhile, this study uses multiple regression to find a functional relationship between two or more independent variables and the dependent variable.

Meanwhile, this study uses multiple regression to find a functional relationship between two or more independent variables and the dependent variable. Furthermore, the econometric model is as follows:

$$K_{it} = \alpha + \beta_1 SLQ_{it} + \beta_2 DLQ_{it} + \epsilon_{it} \dots \dots (1)$$

Where:

- K : Inequality
- A : Constant
- SLQ : Static Location Quotient
- DLQ: Dynamic Location Quotient
- $\beta_1 - \beta_2$: Residual Coefficient
- I : 13 Regencies and 4 Cities in South Sumatra Province
- T : Year 2011-2019
- ϵ : Error of term

Discussion

The data used in this study are secondary data obtained directly from the Provincial Statistics Agency of

various regions in South Sumatra Province in several publications and literatures as well as written information from both related institutions and the internet related to the research topic. The data needed in this study are the population per 13 regencies and 4 cities in the province of South Sumatra, Indonesia, the GRDP at constant prices according to business fields in regencies / cities in South Sumatra Province in 2011-2019.

In this study using quantitative descriptive analysis techniques measured in a numeric scale which can be divided into interval data and ordinal ratio data using mathematical, statistical and econometric approaches. This analysis technique aims to determine the effect of the Leading Economic Sector (SLQ) and Potential Economic Sector (DLQ) variables on the inequality of economic development in 13 districts and 4 cities in the province of South Sumatra, Indonesia.

Data according to time is divided into Cross Section, Time Series and Panel data. Cross Section data is data that is collected at a certain time to provide an overview of an object at that time. Time Series data is data that is collected from time to time to see the development of an object during that period. Panel data is data that describes several objects or events from time to time (period) historically. In this study panel data are using with a period of 9 years, namely 2011-2019. Data processing is using via the EViews 8.0 program.

In selecting the final model used in this study is the Fixed Effect. Meanwhile (Gujarati, 2012) said that if the panel data has a greater amount of time than the number of individuals, it is recommended to use the Fixed Effect method.

Table 1 below shows the results of research using the Fixed Effect method in 13 districts and 4 cities in the province of South Sumatra, Indonesia with a constant value in the applicable Fixed Effect SLQ model of 0.0966918. The results of this estimate indicate that the constant value for inequality due to SLQ is 0.037956, meaning that when SLQ increases by 1 percent, the inequality will decrease by 0.037956 with a probability value of 0.1113>0.05, which is the critical limit of 5 percent so that statistically not significant.

DLQ shows the constant value of the applicable Fixed Effect model is -0.007971. The estimation results indicate that the constant value for inequality due to DLQ is -0.007971. And it has a negative effect, which means that when DLQ increases by 1 percent, inequality will decrease by 0.007971 with a probability value of 0.0114<0.05, which is the critical limit of 5 percent so that it is statistically significant. The following is Table 1 where the results of the final Fixed Effect model selection are as follows:

**Regression Results with the Fixed Effect Method in 13 Regencies and 4 Cities
in South Sumatra Province, Indonesia, 2011-2019**

Variable	Coefficient	Std Error	T-statistic	Prob
C	0,096918	0,060429	1,603826	0,1113
SLQ?	0,037956	0,060429	1,603826	0,1113
DLQ?	-0,007971	0,059655	0,636261	0,5258
Fixed Effect(Cross)		0,003212	-2,481615	0,0144
OKU_C	-0,070369			
OKI_C	-0,063615			
Muara Enim_c	0,016396			
_Lahat_C	-0,083254			
_lahat_C	-0,083254			
_Musi Banyuasin_C	-0,086918			
_Banyuasin_C	0,231942			
_OKU Selatan_C	0,033089			
_OKU Timur_C	0,019996			
_Ogan Ilir_C	0,088559			
_Empat Lawang_C	0,019397			
_Pali_C	0,003353			
_Murta_C	-0,049610			
_Palembang_C	-0,089149			
_Prabumulih_C	0,210751			
_Pagar ALAm_C	-0,112925			
_Linggau_C	-0,054760			
R- squared	0,974103	Mean dependent var	0,125249	
Adjusted R-Squared	0,970609	S.D. dependent var	0,099960	
S.E. of regression	0,017137	Akaike info criterion	-5, 178686	
Sum squared resid	0,037003	Schwarz criterion	-4807459	
Log Likelihood	390,8654	Hannan-Quinn criter.	-5,027840	
F-statisti	278,7897	Durbin-Watson stat	0,203487	
Prob (F-statistic)	0,000000			

Source: built by the author.

The equation obtained from the regression results:

$$IW = 0.096918 + 0.037956SLQ + -0.007971DLQ$$

(1.603826) (1.603826) (0.636261)

Based on Table 1, a constant value of 0.0969 indicates that if the SLQ and DLQ variables are zero, then the level of inequality increases by 0.096. This is also in line with the R-squared value of 0.9741, which means that the SLQ and DLQ variables are able to explain the dependent variable of regional inequality by 97.41 percent and the rest by other factors. The two independent variables together have a significant effect on regional inequality with an F-test of 0.000000 < 0.05.

The SLQ variable has a positive and insignificant effect on the inequality of regencies / cities in South Sumatra Province with a prob value of 0.5258 > α 0.05. This means that an increase in the SLQ value in the existing economic sector will increase inequality or the Williamson Index number by 0.037. This condition shows that sectoral economic development will also increase inequality. This indicates that in terms of comparative advantage with the use of natural resources, the economic development of regencies / cities is still at an early stage. Economic development in the early stages of a region is generally characterized by the production of the dominant primary sector in the economy, so that at the beginning of development, an increase in economic growth is also followed by an increase in inequality.

The DLQ variable shows a negative relationship with a coefficient of -0.0079 and has a significant effect with a prob 0.0144 < α 0.05. This means that the improvement and development of potential economic sectors that are competitive in the future can reduce inequality by 0.0079. This shows that there are increasing sectoral developments due to the investment factor of new capital goods in this potential sector which encourages increased labor productivity. Furthermore, the economy experienced an increase in investment and employment and led to the creation of a higher per capita income. This increase in income is ultimately able to reduce the level of inequality.

Prapti's research (2006) shows that an increase in economic growth (or in other words an increase in the base economic sector) is followed by an increase in the level of income inequality.

Utama (2010) shows that the potential sectors in the economy will be able to encourage the reduction of inequality. Based on the sectoral growth rate and per capita income, there are sectors that have the potential to drive economic growth. This study assumes that there are differences in the characteristics possessed by each district / city in South Sumatra. Thus the intercept varies between individual units but does not differ in time (time invariant).

Inequality between regions occurs due to differences in the characteristics of each Regency / City in South Sumatra which causes an area based on Klasen Typology to be an area that is more advanced than other regions. Inequality between regions can occur due to differences in regional financial capacity so that regions that can invest in leading and potential economic sectors will be able to reduce inequality.

Conclusions

1. The economic potential of the regencies / cities of South Sumatra shows differences due to different conditions of natural resources, population and area. Based on the regression results, the SLQ variable has a positive but insignificant relationship with regional inequality. This shows that regional economic development was also followed by an increase in regional inequality by 0.03. Thus, the economic development in districts / cities in the province of South Sumatra is still in the early period characterized by the relatively large role of the primary sector. This was shown by the leading sectors of regencies / cities in South Sumatra Province, especially the agriculture and mining sectors.

2. Based on the growth of the economic sector through DLQ analysis, it shows that increasing the competitiveness of potential sectors can reduce regional inequality. From the results of the DLQ regression, it has a negative relationship and has a significant effect on regional inequality. It means that an increase in the competitiveness of sectors that have prime and potential economic potential will reduce inequality by 0.007. Thus long-term development requires efficient management of economic potential in order to accelerate regional economic growth.

3. An increase in capital stock and labor productivity in potential sectors will increase people's income so that in the end it will reduce regional inequality.

Suggestions

1) Efforts are needed to redistribute resource allocations to increase community income. Efforts to create added value for leading sectors through industrialization policies will create wider employment opportunities that can boost the competitiveness of economic sectors so that the existing potential is more optimized.

2) Regency / City Governments in South Sumatra Province need to develop competitive advantages of their territorial excellence by emphasizing policies on the use of modern technology that are focused on adding natural resource-based economies to value-added economies, namely the manufacturing and service industries.

3) For other researchers who will conduct research in the same field, namely regarding the analysis of the effect of economic potential on inequality of economic areas between regencies / cities in South Sumatra Province, it is better to increase the number of variables such as population and Regional Minimum Wages so that more data is used, so that the results obtained are more accurate and better from this study.

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