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SHORT COMMUNICATION

# Analysis of the effect of city growth on the development of hinterland region in Cianjur Regency

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**ABSTRACT**

This study aims to determine the effect of the growth center through the magnitude of economic growth in the growth center region and its influence on the economic growth of the hinterland region in 2013 to 2017 by using correlation analysis and to find out the income gaps that occur in the growth center and the hinterland region in 2013 until with 2017 using Williamson's index analysis. This study uses an explanatory method with secondary data cited from the Office of the Central Statistics Agency of Cianjur District and literature studies. Correlation results show that the center of the development sub-region is able to influence the development and growth of the back area (hinterland) and vice versa. Williamson index analysis results show that the city area of Cianjur Regency as a center of growth has a role in the development of the region in Sub-district of Cianjur Regency, this is indicated by the low value of the Williamson index that occurs as a whole between the growth center and the hinterland area of 0.54958 with the lowest average value 0.42988 and the highest average value of 0.74544.

*Keywords*: growth center area, hinterland region, disparity, Cianjur Regency

## 1. INTRODUCTION

National development is aimed at improving the standard of living and welfare of the people in the region through harmonious and integrated development, both between regions with efficient and effective development planning towards achieving regional independence and prosperity that is evenly distributed throughout the country. Efforts to distribute development to all national areas, the most important point are regional development (Commoner, 1993).

Operationally regional development is carried out based on the granting of the principles of regional autonomy and delegation of authority to local governments in managing development in the region. This concept is also known as the principle of decentralization, namely the surrender of governmental authority by the central government to autonomous regions within the framework of the Unitary State of the Republic of Indonesia. The granting of regional autonomy has the aim of providing flexibility to regional governments to regulate their own households, increase the usability and results for the administration of government in order to provide services to the community and the implementation of development in the region and encourage the creation of regional independence (Rizal and Nurruhwati, 2018).

Perroux (Rizal et. al., 2017) states that development does not appear in all places and at the same time, arising in several places (points) or several growth polishes with different intensities, and then spread through various channels with different effects. Regions that are at the center of development will grow faster, while other regions will be left behind in all fields. In this regard, the regions that are the centers of growth or development are those areas that are faster growth compared to other areas around them.

The development that has been achieved in Indonesia results in developed regions and areas with slow growth. Although the region concerned seeks to implement its regional development policy so that there is no disparity between regions and between sectors, especially the economic sector. In general, the phenomenon of the main causes of inequality represents the difference in industrial structure or economic structure. Regional inequality or inequality can be reduced or even overcome through the allocation of production factors that have grown and increased, without the need for interference from the government. It is anticipated that the development of diverse economic structures will lead to differences in the growth of production output and employment opportunities. So that there are areas that are growing rapidly, this is because the industrial structure or economic structural supports in the sense that most sectors have a rapid growth rate. For regions with slow growth rates, some sectors have slower growth rates (Barro, 1999; Rizal and Nurruhwati, 2018).

The above problem is experienced by Cianjur regency, where regional growth has not been evenly distributed and still requires more dominant attention from the regional government which in fact knows the condition of the region well. In an effort to balance economic growth, economic equality is also needed by accelerating effective and strong economic development by empowering the economic potential of the region that is owned by paying attention to spatial planning and the environment.

The problem of inequality also occurs between cities and villages, between cities in this case city sub-districts and other regions, marked by the concentration of the number of elementary, junior high and high school (general or vocational) both public and private: 119 in the city sub-district and 32 pieces spread across 22 sub-districts, 17 in the sub-district of the city, and 17 in scattered in 32 sub-districts.

The economic data mentioned above can be explained that economic development does not have to be in urban areas. The policy of economic development is expected to develop the concept of a populist economy. With this step, the effort to even distribution of development is not only concentrated in urban areas but can be distributed evenly in the area of Influence or hinterland (CBS of Cianjur Regency, 201, Firman, 1994, 1997, 2002, 2009)

The purpose of writing this paper is to formulate the problem as follows. First, is there a relationship between economic growth in the central growth region (City) to economic growth in the hinterland (Sub-District) region of Cianjur?. Second, does the income gap between the central growth areas (cities) and the hinterland (sub districts) of Cianjur fall further?

## 2. LITERATURE REVIEW

### Pole Theory of Growth and Growth Points

Perroux (Barro, 1999), areas that are located in a wide area do not develop in the same intensity and speed, in the sense that there are regions that are able to develop faster than others. Regions that have more determinants and driving factors will need to be able to develop faster than other regions, and vice versa. The determinants of regional development be the factors behind supply and demand such as the availability of workers with relatively high productivity levels and relatively cheaper wage rates, higher per capita income of the population, and so on. While the driving factors are the factors that influence the intensity of the speed of regional development in addition to determinants such as the location of the area that is relatively favorable, motivation or encouragement for a strong advance from the community.

According to Myrdal (Barro, 1999; Rizal and Nurruhwati, 2018) that uneven development can lead to backwash effects, namely increasing the energy and capital needed to a place that really starts to build, so that other regions and surrounding areas become backward and backward. All kinds of development must be aimed at generating spread effects, namely the expansion of activities at the center of economic development in other regions.

Hirschman (Barro, 1999) argues that economic progress does not occur in various places at the same time and if in a place or region there is development, there will be a strong attraction that will create equality around the area where economic development begins.

### Basic Concept of Regional Development

The concept of developing regional areas defines a region, namely the designation for the surface environment of the earth in general and of course its boundary. To further simplify the understanding of territory, divided national and regional regions. National territory is the name for the region within the limits of state power. Regional area is the term for the region within the authority of the Regional Government. For example, the boundaries of provinces, districts, municipalities, sub-districts and villages. The national territory is divided into regions, in implementing domestic policies through regional government regulation processes (Iyer et. al., 2005; Rizal et. al., 2017).

The realization of the development policy established a Development Area Unit (DAU) which was grouped based on regional restrictions, taking into account the influence of one or several centers of economic activity to be replaced by other central influences.

The development area unit is a variety of types of activities which are included in the government and community sectors and their implementation is regulated in the context of efforts to improve the level of people's welfare through inter-sectoral development projects, in one or more regions in one development area. DAU is divided into development area sub-unit (DAS) which connects several regions to form relations activities for each economic sector (Iyer et. al, 2005; Rerat, 2012; Rizal et. al., 2017).

**Inter-Regional Growth and Williamson Index**

Growth is from the word grow which means it arises and increases in size. Definition of economic growth in a region is a work of increasing per capita output in the long run. Emphasize on three aspects, namely process, per capita output, and long-term (Iyer et. al., 2005). Economic growth exists if there is not only an increase in output per unit of input but also changes in institutions and technical knowledge in producing more output.

Kuznets (Barro, 1999; Rerat and Lees, 2011) defines economic growth as a long term increase in the ability to offer more types of goods to the public. This ability grows according to technological advances and ideological institutional adjustments needed.

The development of advance between one region and another should be the same, but in reality the difference is not only apparent but also tends to continue to grow. This can be seen from the difference in income. Regional income differences are relative, not absolute. Calculating the difference in income level, comparing in relative terms, regional per capita income is taken as a percentage of average per capita income, namely a comparison of regional income averages and is informative, rather than absolute differences. Size of the Williamson Index can find out regional differences in the development process.

The causes of disparities or differences in income are numerous factors that are determined by labor productivity, differences in natural resources, labor quality, efficient use of natural resources and organizations. Measuring income disparity can be used for regional imbalance from JG. Williamson. The size of the inequality depends on the number of regional divisions in a country and a few exceptions to the region are influenced by the main sectors that stand out (Williamson, 1965).

**3. RESEARCH METHODS**

**Types and Data Sources**

The type of data used is secondary data, carried out by copying or quoting data that has been provided by certain parties, and the data are processed according to the analysis used in the study. Secondary data from 2013 to 2017, obtained by taking from library studies of agencies such as CBS (Central Bureau of Statistics) and Regional development and planning agency (RDPA) of Cianjur Regency.

The data needed to find out the magnitude of the influence of economic growth in the growth center region on the hinterland region are the GRDP data of Cianjur Regency, the GRDP growth rate data from the central region and the hinterland area of The City of Cianjur Regency. The data needed to find out the existence of income inequality are the data on the population of the growth center and hinterland in Cianjur city / regency, and the GRDP per capita of Cianjur city / regency.

**Correlation Analysis**

To measure the strength of the relationship between the independent variable (growth center) on the dependent variable (the hinterland region), the correlation coefficient is used with the formula (Moore, 1980; Aggarwal and Ranganathan, 2016):

$$R = \frac{n \sum X_i Y_i - \sum X_i \sum Y_i}{\left(\sqrt{n \sum X_i{}^2 - (\sum X_i)^2}\right)\left(\sqrt{n \sum Y_i{}^2 - (\sum Y_i)^2}\right)} \quad .........................(Eq1)$$

where:

R = correlation coefficient
n = Number of samples
i = Number of variables
Y = Dependent variable (growth of hinterland region)
X = independent variable (growth of regional development center)

The magnitude of the contribution of the independent variable on the dependent variable can be determined based on the multiple determination coefficient (Warren, 1971; Aggarwal and Ranganathan, 2016).

$$R^2 = \frac{(\sum X_i Y_i)^2}{\sum X_i{}^2 \sum Y_i{}^2} \quad ..................... (Eq\ 2)$$

where:

$R^2$ = coefficient of determination
i  = number of variables

**Williamson Index Analysis**

Testing the second hypothesis regarding the gap in income levels between growth centers and back regions is used by williamson's Analysis, using the formula (Williamson, 1965):

$$V_w = \sqrt{\frac{\sum (Y_i - \bar{Y})\frac{f_i}{n}}{Y}} \quad ................... (Eq\ 3)$$

where:

$V_w$ = Williamson Index
Yi = income per capita in region I (sub-district)
Y = average per capita income at the growth center (Rp)
fi = total population i (hinterland region) (person)
n = population growth center (person)

## 4. RESEARCH RESULTS AND DISCUSSION

The economic structure of Cianjur Regency is dominated by the trade, hotel and restaurant sector, the manufacturing industry sector, and the agricultural sector. While the sectors whose contribution is small are the drinking water and electricity sector and the transportation and communication sector. The sector that dominates the economy of Cianjur Regency according to GRDP is the trade, hotel and restaurant sector 27.00%, processing industry 23.37%, and agriculture sector 18.49%. While drinking water and electricity sector were 0.94% and the transportation and communication sector was 3.85%.

The economic structure of the city area of Cianjur regency can be seen from the percentage distribution on the basis of constant prices in 2010 where the trade, hotel and restaurant business field is still 19.23% and the service business field is 16.89% (Table 1).

**Table 1.** Percentage of GRDP in Cianjur Regency at Constant Prices 2013-2017 (%)

| Sectors | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Agriculture | 22,74 | 23,02 | 19,14 | 19,46 | 18,46 |
| Mining | 0,42 | 0,46 | 0,48 | 0,50 | 0,51 |
| Industry and processing | 21,21 | 21,38 | 22,61 | 22,97 | 23,37 |
| Electricity and drinking water | 0,64 | 0,81 | 0,87 | 0,94 | 0,94 |
| Building or construction | 8,07 | 7,37 | 8,04 | 8,04 | 8,46 |
| Trade, hotels, restaurants | 27,22 | 25,86 | 27,30 | 26,78 | 27,00 |
| Transportation and communication | 3,29 | 3,53 | 3,76 | 3,68 | 3,85 |
| Finance, leasing and corporate services | 5,42 | 5,09 | 5,22 | 5,18 | 5,17 |
| Services | 10,98 | 12,48 | 12,58 | 12,46 | 12,12 |
| PDRB | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 |

Source: CBS of Cianjur Regency 2017.

**Table 2.** Percentage of PRDB in Cianjur Regency at Current Prices 2013-2017 (%)

| Sectors | 2013 | 2003 | 2004 | 2005 | 2017 |
|---|---|---|---|---|---|
| Agriculture | 6,76 | 5,59 | 5,72 | 5,57 | 5,69 |
| Mining | 0,09 | 0,07 | 0,07 | 0,06 | 0,08 |
| Industry and processing | 13,81 | 13,70 | 14,06 | 13,72 | 13,45 |
| Electricity and drinking water | 4,72 | 4,80 | 4,73 | 4,72 | 4,76 |
| Building or construction | 6,56 | 5,75 | 5,59 | 5,53 | 6,35 |
| Trade, hotels, restaurants | 19,58 | 19,61 | 19,41 | 19,30 | 19,23 |
| Transportation and communication | 17,11 | 19,06 | 19,56 | 20,15 | 20,08 |
| Finance, leasing and corporate services | 13,34 | 13,59 | 13,48 | 13,64 | 13,49 |
| Services | 18,04 | 17,82 | 17,38 | 17,31 | 16,89 |
| PDRB | 100,00 | 100,00 | 100,00 | 100,00 | 100,00 |

Source: CBS of Cianjur Regency 2017.

**Correlation Analysis**

Based on the results of data analysis, the correlation results were 83.1%. From these results obtained the direction of positive correlation, or the higher the economic growth that takes place in the city of Cianjur, the higher the economic growth that occurs in the hinterland (sub-district) and vice versa. A large correlation number of more than 0.5 indicate that the city's economic growth rate correlates strongly with the rate of economic growth in the Cianjur district. From the results of the significance test of 0.05, the results obtained are 0.081 which means that Ho is accepted or significant. From the results of the correlation of 83.1 it can be said that each increase in the growth rate of the city area can increase the rate of growth in the hinterland (district) region and vice versa every increase in the growth rate of the existing sub-districts can increase the rate of growth in the city.

**Williamson Index Analysis**

The role of the growth center to reach the region can be achieved by the presence or absence of income inequality that occurs between the growth center and the hinterland region. One indicator is whether or not the development center and the development of the back area or hinterland are effective or not. The average level of martial art in the city / regency of Cianjur can be seen from the Williamson index.

The Williamson index varies annually, in 2014 it occurred including 0.6909 and increased by 0.054 in 2015 to 0.7454 which was the highest occurring in the Cianjur region. In 2016 and 2017 it was 0.4346 and 0.4298. The overall location in Cianjur is 0.5495.

The results provide evidence of a positive relationship between cities and their hinterland, between economic growth in the growth center and the region or hinterland, the development of sub-district towns has a decisive influence on the hinterland.

The influence of economic growth in the growing regions on the development of areas in the cities and sub-districts in Cianjur is shown from the results of correlation analysis, with the independent variable growth in the center of growth and the dependent variable is the growth of the hinterland area (sub-districts outside the city area of Cianjur District). the results of the analysis above, the magnitude of the influence of growth occurring in the central growth region of the development of the hinterland area in all Cianjur districts is real. In reality what happens is that the growth that has occurred so far is economic growth in which the growth centers are usually higher when compared to the growth that occurred in the hinterland region (Rizal and Nurruhwati, 2018).

The gap is one indicator of spatial intensity. The size of the gap between regions is able to show the level of intensity of impact of a region. The imbalance that occurs in the pattern of growth in Cianjur district is very visible. This is due to the comparative power of each different sub-district. The role of the growth center for regional development can be indicated by the development of income obtained per hinterland region per year, the role showed by the presence or absence of income inequality in the central growth region with the hinterland region.

The income gap supports Hirschman's opinion that there is a backlash where development in the center of the development sub-region absorbs all of the resources behind it. The absorption of these resources is usually through economic expansion which has a detrimental effect on other regions due to the movement of labor, capital from the rear to the center of the development sub-region, while the labor income is spent at the center of the

development sub-region, which encourages increased investment which ultimately increases income. On the contrary, the back area is less developed as a result of the low investment which results in a low income (backwash effect).

## 5. CONCLUSION

City area of Cianjur Regency was able to contribute significantly to the growth of the hinterland region and the development of the hinterland area of The sub-districts in Cianjur as a whole. Economic growth in the central growth region (city) has a positive correlation with economic development in the hinterland (sub-district) region. This means that economic activity in the principal growth area (city) has definite benefits that can support economic activities in the hinterland region.

The disparity or income gap that is getting smaller every year shows that there is an equal distribution of income per capita between the income per capita of the population in the central growth area (city) and the per capita income of the population in the hinterland area (sub-district).

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