

Economic Growth, Investment, Economics Agglomeration, And Regional Development Inequality In West Java Province

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Abstract – High economic growth is not always followed by equitable development in a region. This study aims to see the effect of economic growth, investment, and economic agglomeration on regional development inequality in West Java Province. Timeseries data regression analysis West Java Province in the period of 2004–2018 to estimate the effect of economic growth, investment and economic agglomeration on regional development inequality. The results obtained are that economic growth has a significant positive effect on development inequality, amd economic agglomeration has a positive effect on regional development but not significant, while investment has a significant negative effect on development inequality in Java

Keywords – Economic Growth, Investment, Economic agglomeration, Regioanl Development Inequality

I. INTRODUCTION

Economic growth and inequality are the main problems faced by every developing country [1]. Efforts to increase economic growth through investment and economic agglomeration in a region are not always followed by equitable development. Inequality of development always arises, if the level of development in various regions is compared, the development achieved by developed regions is always faster than that in other regions. These rights in the long run will lead to a fairly wide level of inequality [2]. Countries with high levels of inequality can hinder their economic growth, while countries with more equal economic growth are higher and faster [3].

In the early stages of economic growth, income distribution tends to deteriorate, in other words, high inequality. However, in

later stages, things will improve. This hypothesis is known as Kuznets "Inverted-U" hypothesis. Income distribution will increase in line with economic growth [4]. But this does not occur in Indonesia

Since regional autonomy took place in Indonesia in 1998, many regencies/municipalities that have succeeded in separating themselves from their parent regencies/municipalities, even becoming a new province, have begun to rebuild their territory to build and generate regional potential and increase their economic growth as a hope for the future. equitable development. But the fact is that regional inequality is widening in urban areas by 0.392 and in rural areas by 0.382 [5].

The problem of inequality is still happening in Indonesia, including in West Java Province. In essence, development inequality is caused by the concentration of regional economic activities, unequal investment allocations, and low levels of mobility of production factors between regions. Differences in natural resources between regions, differences in geographical conditions between regions, and lack of smooth trade between provinces [6].

In the case of West Java Province in the 2004-2018 period, there was an increase in economic growth as measured by the GRDP ratio in a certain year in the form of a percentage. Growth and equity are two poles of development strategies that are often ignored trade-offs. This means that development prioritizing aspects of economic growth tends to sacrifice aspects of equity. Based on data from the Central Agency on Statistics, the average rate of economic growth reached 5.726, while the average level of regional development inequality in West Java Province was 0.58. This shows that an increase in economic growth is followed by an increase in development inequality in West Java Province. [7] found a positive relationship between economic growth and development inequality.

[8] in [9] explains the effect of trade openness on inequality depending on what factors drive economic growth in the country. When economic growth is driven by the agricultural/agricultural sector, economic growth can reduce inequality. However, when the economy is driven more by the industrial/ manufacturing sector, there will be economic agglomeration resulting in increased regional inequality. But [8] and [10] do not link the effect of economic growth, investment, and economic agglomeration on development inequality.

In line with several studies on development inequality. [11] found that investment and agglomeration can lead to development inequality driven by economic openness and easy access to foreign markets. Investment has a positive impact on increasing the profitability of a production process, technology transfer and the introduction of new production process technology, managerial skills, workforce training, and access to international networks [12] and provides a high multiplier effect in the absorption of skilled labor and special experts [13]; [14]. This condition causes high economic productivity in the area concerned and at the same time accelerates economic growth. This increase in economic growth can directly lead to high inequality between regions in Indonesia [15]; [16]. Investments generally invest in labor-intensive sectors such as the manufacturing and service sectors. Both sectors can provide high wages for workers [17];[18] so that which creates inequality between regions. [19] state that a high concentration of economic activity in certain areas is one of the factors that cause regional development inequality. Economic development in regions with a high concentration of economic activity tends to grow rapidly compared to regions with a low concentration of economic activity. Likewise, the concentration of the population in and around big cities is usually followed by regional development inequality.

Research on the effect of economic growth, investment, and economic agglomeration on development inequality in West Java Province has not been widely carried out. [20] found an increase in interregional development inequality in West Java Province

from 2002–2008. This is due to the increase in economic activity which is only concentrated in a few regions. The highest inequality is found in the government and development coordination region II such as Subang, Purwakarta, Bekasi, Karawang, and Bekasi Municipal, due to the high income that occurs in the Bekasi regency compared to other regions in West Java Province.

Generally, current research has focused on economic growth and inequality, without investment variables and economic agglomeration on development inequality. Therefore, it is different from previous studies. This study will show the effect of economic growth, investment, and economic agglomeration on regional development inequality in West Java Province. This research is certainly expected to provide an explanation related to the influence of economic growth, investment, and agglomeration on regional development inequality in West Java Province.

II. LITERATURE REVIEW

2.1 Economic Growth

Economic growth is defined as an increase in income per capita, which is needed to improve welfare. High and sustainable economic growth is the main condition or a must for the continuity of economic development and welfare improvement [26]. The main cause of economic growth is the availability of several resources and increased efficiency in the use of factors of production. Economic growth in the macroeconomic sense is the addition of real GDP value, which means an increase in national income. There are two forms of economic growth, namely extensive use of more resources and intensive use of several resources that are more efficient (productive). [21] states that economic growth is an increase in the production or per capita income of a country. The production is calculated by Gross National Product (GNP) minus GDP or Gross National Income (GNI) minus GDP. Economic growth also means increasing the economic capacity of a region within a certain time. The concept of GDP is used at the national level, while at the provincial and regency/municipalities levels the concept of GRDP is used. GRDP is the total value of output from the economic sector or business field. The calculation of GRDP is grouped into nine sectors, namely: (1) Agriculture; (2) Mining and Quarrying; (3) Manufacturing; (4) Electricity, gas, and clean water; (5) Building; (6) Trade, Hotel, and Restaurant; (7) Transportation and Communication; (8) Finance, leasing, and company services; and (9) Services.

2.2 Investment

According to Harrod-Domar's theory which states that investors can increase the capacity of capital goods [22]. Increasing the capacity of capital goods will improve the regional economy and at the same time increase regional economic inequality. Based on these theories and research, it can be said that investment will encourage better economic growth because the investment will encourage economic productivity and job creation. The difference in investment in each region in Indonesia will increase economic inequality, but in the long term investment will be able to reduce the level of inequality if there is an even distribution of investment in each region in Indonesia.

[22] in [23] said that the amount of investment depends on several things including the number of profits obtained in economic activity, interest rates, future profit levels, forecasts of future economic conditions, and the use of technology. The Equitable investment will be achieved if each local government can develop the potential of its resources.

Investment has a positive impact on increasing the profitability of a production process, technology transfer and the introduction of new production process technology, managerial skills, labor force training, and access to international networks [24] and provides a high multiplier effect in the absorption of skilled labor. and special experts [13];[14]. This condition causes

high economic productivity in the area concerned and at the same time accelerates economic growth. This increase in economic growth can directly lead to high inequality between regions in Indonesia [15]; [16]. Foreign investors generally invest in labor-intensive sectors such as the manufacturing and service sectors. Both sectors can provide high wages for workers [19]; [20] so that which creates inequality between regions. However, according to [25], Indonesia has not become a priority as a place to invest capital in foreign investors. This condition is caused by the many barriers to entry for foreign investors, inefficient bureaucracy, and unsupportive infrastructure. This condition causes a less significant influence of foreign investment on economic inequality in Indonesia. Referring to the [28] Indonesia was ranked 151 in 2017 in terms of ease of starting a business. The ease of starting a business is strongly influenced by policies made by the government such as procedures for starting a business, initial costs to be incurred, and other indicators. In addition to complicated procedures, the costs that must be incurred by the company are also quite large, such as in the case of a construction permit, the company has to pay 5.1% of the total cost of warehouse value and in the case of property registration, the company must pay a fee of 10.8% of property values. The difficulty in starting a business will have an impact on the low interest of investors to open a company in Indonesia. This condition will have an impact on the decrease in the number of jobs and economic productivity.

Referring to the Kuznetz hypothesis which states that inequality at the beginning of economic growth will be at a high level, but over time after reaching the highest point inequality will decrease in subsequent economic growth [29]; [30]; [31]. Based on this hypothesis, it can be said that at the beginning of economic growth, inequality will indeed occur at a relatively high level, but a balanced distribution of investment and continuity of economic growth will encourage a decrease in inequality. This also applies to investments in each province in Indonesia. If there has been an even distribution of investment, it can reduce the level of inequality.

2.3 Economic Agglomeration

The term agglomeration was first introduced by Weber and refined by [32] regarding agglomeration economies or also known as localized industries. According to Marshall, an industry will choose a location that allows for long-term economic activity so that profits will increase when setting up a business around that location. Companies will tend to always cluster in certain locations. According to [32], there are three sources of why increasing returns to scale are always achieved, namely the abundance of information (information spillovers), local non-traded inputs, and the availability of local skilled labor pools.

Abundance of information

If many companies in the same industry agglomerate in the same location, then workers in a particular company are relatively easy to relate to workers from other local companies. Thus, the exchange of information between workers in various companies will take place every day.

Non-traded local input

In a situation where companies in the same industry are clustered in one place, certain inputs become more efficient if used jointly by workers in these companies than if these inputs are purchased individually by related companies.

Availability of local skill labor force

The availability of a skilled labor force in the region will lead to lower labor costs for companies located in the region. If the company is located in an area that already has a local group of workers with the specific skills required by a particular industry,

the company's costs of upgrading the workforce will be relatively low. This is because the company only requires retraining activities. For industries where the cost of upgrading the skills of workers is very high and the opportunity cost of time to seek these skills is very significant, the presence of a group of local skilled workers will provide great benefits. The cost of acquiring workers, which includes the costs of finding and retraining costs, will be reduced.

[19] state that a high concentration of economic activity in certain areas is one of the factors that cause regional development inequality. Economic development in areas with a high concentration of economic activity tends to grow rapidly compared to areas with a low concentration of economic activity. Likewise, population concentration in and around big cities is usually followed by income inequality between regions. A similar view was also expressed by [33] who said that the high concentration of economic activity would encourage development inequality between regions. This concentration is reflected in agglomeration activities. Regional economic growth with higher economic concentration will be faster. This condition will further encourage regional development by increasing the provision of employment and community income. The opposite also applies, if the economic concentration of a region is low, it will encourage unemployment and low levels of community income. [34] in his theory of the backwash effect and the spread effect suggests that the reverse impact tends to increase and the scatter effect decreases, creating regional inequality in underdeveloped countries. [35] states that one of the factors causing inequality between regions is the economic concentration between regions. Thus, referring to the understanding of the theory and view, it can be synthesized that the influence of agglomeration has a positive direction on the inequality of income distribution between regions. This means that if there is a change in the increase in agglomeration, it will be able to cause an increase in development inequality between regions.

III. METHODOLOGY

One of the provinces in Indonesia that plays a significant role in national economic growth is the province of West Java. West Java Province is an area that makes a major contribution to the formation of the third National GDP of 14.30%. West Java Province was chosen as the research location considering that this region has good economic potential and abundant resource conditions, and is strategically located as a buffer for the nation's capital, but poverty and unequal welfare still occur in this region. Through the Governor of West Java Regulation No. 18 of 2018 concerning the regional action plan for the regional development goals of West Java Province in 2018-2023 that the West Java regional government is committed to implementing the achievement of the development goals. West Java Province is in western Java Island. Its territory is bordered by the Java Sea in the north, Central Java in the east, the Indian Ocean in the south, as well as Banten and DKI Jakarta in the west.



Figure 1. Research location West Java Province, Indonesia

This study uses a quantitative description approach using secondary data from related agencies, namely Central Agency on Statistics (BPS), the Investment Coordinating Board (BKPM), the National Development Planning Agency (Bappenas), and Central Bank (BI). The data used West Java Province data for a period of 14 years, namely 2004–2018. The data needed for economic growth uses Gross Regional Domestic Product (GRDP) data based on constant prices sourced from the Central Agency on Statistics (BPS). To calculate Economic Growth (EG) with the formula:

$$EG = \frac{GRDP \text{ per capita } t - GRDP \text{ per capita } t-1}{GRDP \text{ per capita } t-1} \quad (1)$$

Where GE is economic growth in West Java Province, GRDP per capita t is Gross Regional Domestic Income in year t, GRDP per capita t-1 is Gross Domestic Income in Year t-1

The required investment data is from gross regional domestic product (GRDP) data by expenditure. The investment obtained will be used for production activities in the future. investment based on a gross regional domestic product by expenditure or gross fixed capital formation includes buildings and non-buildings. Investments are used for buildings, such as residential buildings, roads, and airports. Meanwhile, investment in non-building includes machinery and equipment used to produce [36]

The data needed to calculate the economic agglomeration of data on the number of workers through the location quotient index in the industrial sector. by the formula:

$$LQ = \frac{X_{ij}}{X_{sj}} = \frac{X_{ij}/X_{is}}{X_{sj}/X_{ss}} \quad (2)$$

Where LQ as the location quotient index West Java Province is the number of workers, i is the industrial sector, and j is the province.

If the Location Quotient index has a value of more than one, it can be said that the sector is the basic sector or the sector is agglomerated in the region. However, if the location quotient index is less than one, then the sector is not basic and has not been able to meet local needs or it can be said that it is not agglomerated in the region.

The data needed to calculate regional development inequality is data on Gross Regional Domestic Product (GRDP) per capita and population per region/municipal sourced from the Central Agency on Statistics (BPS). by the formula:

$$I_w = \sqrt{\frac{\sum (y_i - \bar{Y})^2 \frac{f_i}{n}}{\bar{Y}}}, \quad 0 < I_w < 1 \quad (3)$$

Where I_w is the Provincial Williamson Index Value, y_i is GRDP per capita per region/municipal, \bar{Y} is the average GRDP per capita of the province of West Java, f_i is the number of residents per district/city n is the total population of the province of West Java

The value of the Williamson inequality index between regions is $0 < I_w < 1$, meaning that if the Williamson index value is higher, then the process of regional Development inequality is getting bigger, and if the value obtained is close to zero, the indication of development inequality is small or getting smaller. As a guide, inequality classification can be used, if $I_w > 1$ then means that development inequality is very high, if I_w is 0.7-1 then development inequality is high, if I_w is 0.4-0.69 then interregional development inequality is medium if I_w 0.39 then interregional development inequality is low [35].

The dependent variable in this study is the level of development inequality between regions in West Java Province, while the independent variables are (1) the rate of economic growth; (2) Investment; (3) Economic agglomeration. with model specifications

$$Iwit = \alpha + \beta_1EG + \beta_2lnInv + \beta_3Agglo + eit \tag{4}$$

Where Iw is the Williamson index of development inequality, EG is the rate of economic growth, agglo is economic agglomeration, is the estimated coefficient parameter, is Error term, is the time series of 1 province, namely West Java, and it is the -period of 2004-2018.

IV. RESULT AND DISCUSSION

The estimation result of equation (3) shows that simultaneously the independent variables used, namely the rate of economic growth, investment, and economic agglomeration has a significant effect on regional development inequality in West Java Province. This is indicated by the probability value (FStatistic) of 0.013 and the coefficient of determination of 60.7 percent. This indicates that development inequality is influenced by other factors by 39.3 percent, these other factors are not included in the equation (1) model, which can be seen in table 1. The existence of regional development inequality in West Java Province is thought to be due to investment, and economic agglomeration between regions. Other regions are inequality and unsimilarity, therefore their economic growth is different.

Table 1. Regression results from interregional development inequality in West Java Province.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.769901	0.174828	4.403770	0.0011
LN_INV	-0.040744	0.013378	-3.045701	0.0111
LN_PE	0.331250	0.127618	2.595632	0.0249
AG	0.039941	0.086816	0.460058	0.6544
R-squared	0.607613	F-statistic		5.677849
Adjusted R-squared	0.500598	Prob(F-statistic)		0.013430

Sources: Processed Primary Data (2022)

From Table 1. Presents data on the regression results of regional development inequality in West Java Province, which explains that the variable rate of economic growth in West Java Province in the 2004-2018 time period is positive having a coefficient of 0.331250. If the increase in economic growth increases by 1%, it will increase the regional development inequality in West Java by 0.331250 % with the assumption that *ceteris paribus*. The economic growth variable has a significant positive effect on development inequality (95 % confidence level). This can be interpreted that the rate of economic growth is very influential on the inequality of development in West Java Province. [37] in [4] shows the Kuznets curve that describes the level of economic growth and development inequality. The Kuznets curve explains that in the early stages of development, inequality tends to worsen and will improve when there are structural changes. The conditions seen in Indonesia, especially the province of West Java, indicate a change in the structure of the modern industrial sector. If a region is more advanced, then the problem of

inequality will decrease if it is followed by a good equal distribution of income (an inverse U-shaped pattern) [37] in [4]. And when the growth rate of the economy is only centered on the growth centers, the trickle-down effect will be difficult to achieve [38].

Correspondingly Several studies have found that there are two possible relationships between economic growth and development inequality. The first opinion states that there is a positive influence between economic growth and development inequality. If the distribution of regional domestic income is increasingly unequal, then economic growth will be higher. This effect is due to the increasing level of savings and investment of high-income people [39]. The second opinion [40] found in developing countries is that in high-income regions the hypothesis trade-off will apply between economic growth and development inequality, while in low-income regions the hypothesis does not apply to trade-off between economic growth and development inequality.

However, [41] research found that the rate of economic growth had a positive and insignificant effect on regional development inequality per province in Indonesia. This means that when economic growth increases in certain regions, it will increase inequality, but not entirely all regions will experience inequality. In line with the results of research [42] showed that in general development is always followed by growth, but growth is not necessarily accompanied by development.

From the results of regression and hypothesis testing that has been carried out in this study that there is a significant influence between investment and development inequality between regions in West Java Province. The effect of investment on development inequality in West Java during the period 2004-2018 is negative with a coefficient of -0.040744. If investment increases by 1% it will reduce inequality by 0.040744%. This means that the higher the amount of investment in West Java, there will be decrease development inequality in West Java Province *ceteris paribus*. This significant influence indicates that development inequality in West Java Province is determined by the amount of investment. In other words, the rise and fall of investment affect development inequality in West Java Province.

On the other hand, according to the theory put forward by Myrdal regarding the backwash effect caused by the movement of capital and the profit motive that drives development is concentrated in regions with high-profit expectations, while other areas will be neglected. This shows that uneven investment in each region causes capital scarcity which results in uneven development.

In line with several studies, investment has a positive impact on increasing the profitability of a production process, technology transfer and the introduction of new production process technology, managerial skills, labor force training, and access to international networks [12] and has a high multiplier effect. in the absorption of skilled labor and special experts [13]. This condition causes high economic productivity in the area concerned and at the same time accelerates economic growth. This increase in economic growth can directly lead to high inequality between regions in Indonesia [15];[16]. Foreign direct investment generally invests in labor-intensive sectors such as the manufacturing and service sectors. Both sectors can provide high wages for the labor force [17] so which creates inequality between regions. However, according to [25], Indonesia has not become a priority as a place to invest capital in foreign investors. This condition is caused by many barriers to entry for foreign investors, less efficient bureaucracy, and less supportive infrastructure. This condition causes a less significant influence of foreign investment on economic inequality in Indonesia. Referring to the [28] Indonesia was ranked 151 in 2017 in terms of ease of starting a business. The ease of starting a business is strongly influenced by policies made by the government such as procedures for starting a business, initial costs that must be incurred, and other indicators. In addition to complicated procedures, the costs that must be incurred by the company are also quite large, such as in the case of a construction permit, the company must

pay 5.1% of the cost of warehouse value and in the case of property registration, the company must incur a fee of 10.8% of property values. The difficulty in starting a business will have an impact on the low interest of investors to open a company in Indonesia. This condition will have an impact on the decrease in the number of jobs and economic productivity.

In this study, it was found that there was an insignificant effect between economic agglomeration and development inequality between regions in West Java Province. The effect of agglomeration on economic inequality in West Java Province during the period 2004-2018 is positive with a regression coefficient of 0.039941. If economic agglomeration increases by one percent, it will increase economic inequality in West Java Province by 0.039941 percent with the assumption of *ceteris paribus*.

This is due to the high concentration of production activities in some regions in west Java, namely Bekasi Regency, Bogor Regency, and Bandung Regency which tend to encourage faster growth. From the ratio of the industrial labor force in Bekasi Regency of 23.6%, the number of industries is 1930 units, the population density reaches 1841,744 people per mi^2 . The labor force in Bogor Regency is 12.8%, the number of industries is 897 units, and the population density reaches 1339,055 people per mi^2 . The industrial labor force in Bandung Regency is 23%, the number of industries is 1565 units, and the population density reaches 1306,744 people per mi^2 . Meanwhile, some regencies/municipalities in West Java have a low concentration of production activities that will encourage unemployment, low-income levels of local people, and urbanization of industrial regions. Therefore, economic agglomeration encourages the increasing inequality of development between regions in West Java Province. This is because Bekasi Regency, Bogor Regency, and Bandung Regency are regions that have high regional non-oil and gas revenue in West Java, Especially income from the industrial sector, so there are lots of opportunities for this region to be able to develop its economy. Complete facilities and infrastructure are very supportive of the economy so it becomes a pull factor for investors and the labor force to come to that regions.

Empirically, previous research was conducted by [43] who analyzed the effect of the variable production agglomeration on regional income inequality. The results showed that economic agglomeration and development inequality had a positive and significant relationship. This means that an increase in production agglomeration will increase regional income inequality. [44] conducted research on economic regional inequality in Sumatera Island for the period 2005-2010, and one of the findings of which concluded that agglomeration has a significant positive effect on inequality between provinces in Sumatera Island. This shows that if there is an increase in agglomeration, it will increase regional inequality on Sumatera Island. A similar result was also expressed by [45] who found that agglomeration had a positive influence on regional development inequality in Indonesia. This illustrates that every time agglomeration occurs in a region, it can encourage regional development inequality in Indonesia

V. CONCLUSION

The results of the analysis found that economic growth had a positive and significant effect on regional development inequality in West Java Province. With increasing economic growth, it will increase development inequality, this is the distribution of regional income is still not evenly distributed between regions in West Java Province. Similarly, economic agglomeration shows a positive but not significant effect on development inequality. Increasing economic agglomeration in a region will increase economic growth but this gives meaning from the above analysis that increasing economic agglomeration will increase regional development inequality in West Java Province. On the other hand, investment has a negative and significant impact on development inequality between regions in West Java Province. Increasing investment will reduce development inequality. However, if the investment distribution is not evenly distributed, it will increase interregional development inequality in West Java Province.

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