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# Intertemporal Analysis of Indonesia Regional Inequality

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ABSTRACT: Intertemporal Analysis of Indonesia Regional Inequality

This study aims to see the direct and indirect effects of regional income, infrastructure and investment on regional disparities in 25 provinces in Indonesia through economic growth before and after regional autonomy. The type of data analyzed in this study is secondary data in the form of panel data (pooled data) that combines cross-section data and time series data. Analysis of data using regression analysis method (regression analysis).The results showed that regional income has a direct positive effect on regional inequality in 25 provinces in Indonesia before regional autonomy and has a negative effect after regional autonomy does not directly affect economic growth before regional autonomy and has a negative effect after regional autonomy. Infrastructure has a direct positive effect on the regional inequality of 25 provinces in Indonesia before regional autonomy and has a negative effect after regional autonomy and indirectly has no effect through economic growth before regional autonomy has a negative effect after regional autonomy. Investment has a direct positive effect on the regional inequality of 25 provinces in Indonesia before and after regional autonomy and indirectly affects economic growth before regional autonomy and has a positive effect after regional autonomy.

Keywords: Regional income, infrastructure, investment, economic growth, regional inequality.

## INTRODUCTION

Developed countries are a dream for developing countries in the world. Every developing country certainly has its own characteristics and problems it faces. Infrastructure development in developing countries is usually only centered in big cities. On the other hand, in other areas what seems to be happening is only getting left behind. One of the main challenges in Indonesia's current development is overcoming the problem of inequality that does not only

occur in the individual or household dimension but also in the region. The problem of inequality has become a big problem in recent years because in several countries that have experienced relatively high economic growth but inequality between regions is widening.

The phenomenon behind regional growth, such as inequality between regions, is a fundamental problem of development. Regional inequality according to Forbes (1986) concerns economic inequality and social inequality. Economic inequality refers more to the uneven distribution of regional per capita income, while social inequality refers more to the consequences of economic inequality. The difference in development and progress between regions, which means that the ability to grow is not equal, is analogous to the gap so that what arises is inequality between regions.

As a country with thousands of islands, differences in regional characteristics are a logical consequence that Indonesia cannot avoid. Because regional characteristics have a strong influence on the creation of development patterns, it is inevitable that development patterns in Indonesia are not uniform. This lack of uniformity affects the ability to grow, which in turn results in some regions being able to grow rapidly while others grow slowly. This different ability to grow in the end causes inequality in development between regions.

One of the main challenges in Indonesia's current development is overcoming the problem of inequality that does not only occur in the individual or household dimension but also in the region. The development process carried out so far has actually caused quite complex development problems. Where there is a fairly large disparity between regions, where this is due to differences in characteristics between regions. Regional inequality is characterized by the presence of more developed areas and on the other hand there are areas that are underdeveloped. Although inequality itself is a constant in the development process, especially in the early stages of development , it is important to avoid widening inequality.

Although inequality itself is a constant in the development process, especially in the early stages of development, it is important to avoid widening inequality. The widening inequality will give birth to various dissatisfaction, which if it continues to accumulate, it can cause unrest that leads to various kinds of conflicts. Conflicts can occur between communities, between regions, or communities and the government or between the central government and local governments.

Regional autonomy is basically an effort to achieve the achievement of one of the goals of the state, namely improving the welfare of the community through equitable implementation

of development. so that regional autonomy is the right, authority and obligation of a region to regulate and manage its own household economy in accordance with statutory regulation number 22 of 1999. From this enforcement, the purpose of granting regional autonomy is to enable the region concerned to regulate and manage its own household to increase the effectiveness and results for the administration of government (Kuncoro, 2006) .

Behind the hope that Regional Autonomy can increase economic growth, Regional Autonomy also has the potential to increase regional income disparities if not managed properly (Prud'homme, 1995; Lessmann, 2006; Shah, 2006). This concern arises because in a decentralized system, local governments manage their respective budgets by taking into account the welfare of their citizens without being obliged to pay attention to residents outside their territory. Inequality of development or regions in Indonesia can be seen based on indicators or development inequality indices, one of which is the Williamson index.

## LITERATURE REVIEW

According to Kuncoro (2006), inequality refers to a standard of living relative to all communities, due to disparities between regions, namely differences in the endowment factor. This difference causes the level of development in various regions and regions to be different, causing a gap or gap in welfare in these areas (Sukirno, 2010).

The transfer of capital will increase regional inequality, an increase in demand to developed regions will stimulate investment which in turn increases income which leads to a second round of investment and so on. A better scope of investment in development centers can create scarcity of capital in underdeveloped areas (Jhingan, 2010) . A number of theories and models have been developed to explain inequality in the economy. The theory that explains the phenomenon of inequality is Kuznet's theory (1955) with the inverted U hypothesis. This theory explains that income inequality between regions increases at the beginning of the economic development phase and then decreases with the economic development process . Growth in the early stages of development tended to be focused on the modern sector of the economy, which at that time was small in absorption of labor. Inequality is widening as the gap between modern and traditional sectors increases. This increase occurred because the development in the modern sector was faster than the traditional sector. However, in the long run, when economic conditions reach maturity levels and assuming the free market mechanism and the mobility of all production factors between countries without the slightest obstacle or distortion, the difference in the rate of output growth between countries will tend to shrink

along with the level of income per capita. and the average growth rate that is getting higher in each country, ultimately closing the gap.

Myrdal (1957), the occurrence of regional inequality was due to the large effect of the backwash effect compared to the spread effect in underdeveloped countries. The transfer of capital will increase regional inequality, an increase in demand to developed regions will stimulate investment which in turn increases income which leads to a second round of investment and so on. A better scope of investment in development centers can create scarcity of capital in underdeveloped areas (Jhingan, 2010).

Todaro and Smith (2006), there are three main factors or components in economic growth, namely: (1) Capital accumulation, which includes all forms or types of new investment invested in land, physical equipment, and capital or human resources, (2) ) Population growth which in the following years will increase the number of workforce, and (3) technological advancement.

Mankiw (2007) states that the Solow growth model is a pillar that greatly contributes to the neoclassical growth theory. This model allows dynamic analysis of economic growth, can explain why national income is growing and why some economies are growing faster than others and explain changes in the economy over time. Economically, the Solow growth model is designed to show how growth in the capital stock, growth in the labor force, and technological advances can interact in the economy, and how they affect a country's overall output of goods and services.

Rondinelli, Nellis, and Chema (1983) from a policy and administrative point of view suggest that decentralization is the creation or strengthening, both financial and legal, of subnational government units whose administration is substantially outside the direct control of the central government. whereas Henry Maddick (1963) explains that decentralization is the transfer of power legally to handle certain fields / functions to autonomous regions.

The definition of infrastructure in the large Indonesian dictionary can be interpreted as public facilities and infrastructure. Facilities are generally known as public facilities such as hospitals, roads, bridges, sanitation, telephones, and so on. In economics, infrastructure is a form of public capital which is formed from investments made by the government. The infrastructure in this study includes roads, bridges, and sewer systems (Mankiw, 2003).

The neo-classical theory of investment is basically based on the theory of productivity (Marginal Productivity) of the factors of capital production, which with marginal productivity is

the addition of the production process. According to this theory, the amount of capital to be invested in the production process is determined by its marginal production. According to the neo-classical theory (Sukirno, 2013) there are three elements that are taken into account in determining investment, namely the level of the cost of capital goods, the interest rate and the high income to be received. A change in one factor will result in a change in the calculation of profitability.

## METHODS

### Types and sources of data

The type of data used in this study is secondary data, namely Regional Income, Infrastructure, Investment, Economic Growth and Regional Inequality in two upstream six provinces in Indonesia from 1984 to 2017 (before and after regional autonomy) and the data source comes from the Central Statistics Agency. In addition, this data is obtained from several previous research results including in journals, theses, and other scientific papers that support this research.

### Method of Analysis

The analytical method used to test the truth of the proposed hypothesis is by using regression analysis, which is by performing two regressions (before regional autonomy, namely 1984 to 2000 and after regional autonomy, namely 2001 to 2017).
The model used can be formulated as follows:

$$Y_1 = f(X_1, X_2, X_3,) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

$$Y_2 = f(X_1, X_2, X_3; Y_1) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Based on the functional relationship above, it can be described in several non-linear substructure equations as follows:

$$e^{Y_1} = \alpha_0 \ X_1{}^{\alpha_1} \ X_3{}^{\alpha_3} \ e^{\alpha_2 X_2 + \mu_1} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

$$e^{Y_2} = \beta_0 \ X_1{}^{\beta_1} \ X_3{}^{\beta_3} \ e^{\beta_2 x_2 + \beta_4 Y_1 + \mu_2} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

The above equation is a linear equation, so to get the elasticity value is changed by using the natural logarithm (ln) so that the equation becomes:

$$Y_1 = ln\alpha_0 + \alpha_1 lnX_1 + \alpha_2 X_2 + \alpha_3 lnX_3 + \mu_1 \dots\dots\dots\dots\dots\dots\dots\dots\dots (5)$$

$$Y_2 = ln\beta_0 + \beta_1 Y_1 + \beta_2 lnX_1 + \beta_3 X_2 + \beta_4 lnX_3 + \mu_2 \dots\dots\dots\dots\dots\dots\dots\dots(6)$$

Furthermore, to obtain reduced form, equation 5 is entered into equation 6, so that the following is obtained :

$$Y_2 = ln\beta_0 + \beta_1(ln\alpha_0 + \alpha_1 lnX_1 + \alpha_2 X_2 + \alpha_3 lnX_3 + \mu_1) + \beta_2 lnX_1 + \beta_3 X_2 + \beta_4 lnX_3 + \mu_2$$

$$= ln\beta_0 + \beta_1 ln\alpha_0 + \beta_1\alpha_1 lnX_1 + \beta_1\alpha_2 X_2 + \beta_1\alpha_3 lnX_3 + \beta_1\mu_1 + \beta_2 lnX_1 + \beta_3 X_2 + \beta_4 lnX_3 + \mu_2$$

$$= (ln\beta_0 + \beta_1 ln\alpha_0) + (\beta_1\alpha_1 + \beta_2)lnX_1 + (\beta_1\alpha_2 + \beta_3)X_2 + (\beta_1\alpha_3 + \beta_4)lnX_3 + (\beta_1\mu_1 + \mu_2)$$

Simplified to:

$$Y_2 = \gamma_0 + \gamma_1 lnX_1 + \gamma_2 X_2 + \gamma_3 lnX_3 + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(7)$$

Where :

$X_1$ = Regional Income (billion rupiah)

$X_2$ = Infrastructure (percent)

$X_3$ = Investment (billion rupiah)

$Y_1$ = Economic Growth (percent)

$Y_2$ = Regional Inequality (percent)

$\gamma_0 = (ln\beta_0 + \beta_1 ln\alpha_0)$

$\gamma_1 = (\beta_1\alpha_1 + \beta_2)lnX_1$

$\gamma_2 = (\beta_1\alpha_2 + \beta_3) X_2$

$\gamma_3 = (\beta_1\alpha_3 + \beta_4)lnX_3$

$\varepsilon_1 = (\beta_1\mu_1 + \mu_2)$

# RESEARCH RESULT

## Table 1

### Estimation Results of Direct and Indirect Effect Coefficients Between Variables

| | No | Direction of Influence | Estimasi | P-Value | Information |
|---|---|---|---|---|---|
| Before | 1 | a. $X_1 \rightarrow Y_2$ | 0.043 | 0.00 | Significant |
| | | b. $X_1 \rightarrow Y_2$ Through $Y_1$ | 0.000 | 0.08 | Not Significant |
| Regional | 2 | a. $X_2 \rightarrow Y_2$ | 0.034 | 0.00 | Significant |
| | | b. $X_2 \rightarrow Y_2$ Through $Y_1$ | 0.000 | 0.06 | Not Significant |
| Autonomy | 3 | a. $X_3 \rightarrow Y_2$ | 0.01 | 0.00 | Significant |
| | | b. $X_3 \rightarrow Y_2$ Through $Y_1$ | 0.000 | 0.17 | Not Significant |
| After | 1 | a. $X_1 \rightarrow Y_2$ | -.017 | 0.03 | Significant |
| | | b. $X_1 \rightarrow Y_2$ Through $Y_1$ | -0.051 | 0.00 | Significant |
| Regional | 2 | a. $X_2 \rightarrow Y_2$ | -.072 | 0.00 | Significant |
| | | b. $X_2 \rightarrow Y_2$ Through $Y_1$ | -0.119 | 0.00 | Significant |
| Autonomy | 3 | a. $X_3 \rightarrow Y_2$ | 0.00 | 0.02 | Significant |
| | | b. $X_3 \rightarrow Y_2$ Through $Y_1$ | 0.035 | 0.18 | Not Significant |

Source: SPSS AMOS, Processed.

An explanation regarding the form and magnitude of the direct effect and indirect effect of regional income, infrastructure and investment on regional inequality through economic growth in 25 provinces in Indonesia. The analysis is carried out in accordance with the order of the hypotheses that have been previously stated.

**The Influence of Regional Income on Regional Inequality**

**The estimation results of the direct effect** of regional income on regional inequality before and after the implementation of regional autonomy produces the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.043 and a P-value of 0.000, which means that regional income has a significant effect and has a direct positive relationship to regional inequality. The results of this study are not in accordance with the hypothesis which states that regional income has a negative effect on regional inequality before regional autonomy. Meanwhile, what happened was that regional income continued to increase from year to year, in which in 1984 the total regional income was 2.43 trillion and in 2000 the total regional income was 15.71 trillion, on the other hand inequality between regions as measured by the Williamson index also increased . Since 1984 the inequality between regions

was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent.

Differences in the characteristics of a region have a strong influence on the creation of non-uniform patterns of economic development. This lack of uniformity causes some regions to grow fast while others grow slowly. This will eventually lead to development inequality. In addition, before regional autonomy took effect, all decisions related to development in the regions were still centered on the central government, so that the central government did not know for sure the conditions in the regions.

Prud'homme in Aswan (2017) sees that there is no guarantee that money transfers to poor areas can improve income distribution between regions (regional disparities). For him, decentralization is not the right strategy to improve income inequality between regions. This is because in a decentralized system, each region can collect taxes and spend its budget without intervention from the central government. For rich regions, their regional revenues are certainly much higher than for poor regions. So that regional shopping will certainly be different. If this is allowed, regional inequality will only get worse.

**After regional autonomy, the** regression coefficient value is -.017 and a P-value of 0.03, which means that regional income has a significant effect and has a direct negative relationship to regional inequality. The results of this study are in accordance with the hypothesis which states that regional income has a negative effect on regional inequality after regional autonomy. Data show that the inequality between regions has decreased, in 2001 the inequality between regions tercatatat of 0:47 per cent and in 2017 amounted to 12:02 percent, and the amount of local revenue in each region continues to experience pe ningkat late from year to year. In 2001 it was recorded at 23.98 trillion and in 2017 it was recorded at 228.31 trillion. This indicates that the implementation of regional autonomy in Indonesia has led to a decrease in regional inequality.

With the existence of regional autonomy, the regions are given the authority to regulate and manage the potentials that exist in the regions, in this case the regional government is required to run the wheels of government effectively and efficiently to encourage community participation in development, as well as improve welfare by increasing equity and justice. In addition, it is

explained that regional revenue is one indicator of fiscal decentralization. This means that the greater the regional income, the greater the degree of decentralization which makes the regions competing to develop their regions. Maximizing the potential of the region in order to finance development in the region.

The findings above are the same as those found by Qian and Weingast (1997) who argue that the existence of fiscal decentralization will create competition between regions which in turn can reduce regional disparities without a centrally mandated redistribution policy. Lessmaan (2006) who examined the effect of fiscal decentralization on regional inequality in 17 OECD countries in 1980-2001 found that fiscal decentralization as measured by revenue decentralization 113 (the ratio of local revenue to total government revenue without social assistance) had a negative effect on regional inequality. This means that the decentralization of revenue reduces regional inequality in the 17 OECD countries, which are developed countries with low levels of corruption. Bonet (2006) who examined the effect of fiscal decentralization on regional inequality in Colombia in 1990-2000 showed that the higher the level of decentralization as measured from the income side, the greater regional inequality.

**The estimation results of the indirect effect** of regional income on regional inequality through economic growth before and after the implementation of regional autonomy produce the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.000 and a P-value of 0.08, which means that regional income did not have a significant indirect effect on regional inequality through economic growth. The results of this study are not in accordance with the hypothesis which states that regional income has a negative effect on regional inequality through economic growth before regional autonomy. P endapatan area continued to increase from year to which in 1984 the total income of the area is 2:43 trillion and in 2000 the total income of the area is 15.71 trillion, on the other hand the inequality between regions measured by the index Williamson also me ngalami increase . Since 1984 the inequality between regions was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent.

Then the magnitude of increased local revenues could boost economic growth will however not be able to lower economic growth in inequality between regions. The same thing was also found by Aswan (2017) who conducted research related to the effect of PAD on regional inequality in South Sulawesi.

**After regional autonomy, the** regression coefficient value is -0.051 and a P-value of 0.000, which means that regional income has a significant effect and has an indirect negative relationship to regional inequality through economic growth. The results of this study are in accordance with the hypothesis which states that regional income has a negative effect on regional inequality through economic growth after regional autonomy. Data show that the inequality between regions has decreased, in 2001 the inequality between regions tercatatat of 0:47 per cent and in 2017 amounted to 12:02 percent, and the amount of local revenue in each region continues to experience pe ningkat late from year to year. In 2001 it was recorded at 23.98 trillion and in 2017 it was recorded at 228.31 trillion. This means that an increase in regional income will cause a reduction in inequality between regions through economic growth.

The same thing was also found by Rodriguez-Pose, A., & Ezcurra, R (2009) examined the effect of fiscal decentralization on regional inequality in 26 countries (19 developed countries and 7 developing countries in 1990-2006 and resulted in the conclusion that fiscal decentralization has a negative effect on regional inequality in developed countries.The redistribution capacity in developed countries is significantly stronger than in poor countries and this is what makes fiscal decentralization an advantage in reducing inequality.

**The Influence of Infrastructure on Regional Inequality**

**The estimation results of the direct effect of** infrastructure on regional inequality before and after the implementation of regional autonomy produces the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.034 and a P-value of 0.000, which means that infrastructure has a significant effect and has a direct positive relationship to regional inequality. The results of this study are not in accordance with the hypothesis which states that infrastructure has a negative effect on regional inequality before regional autonomy. Where the development of infrastructure will lead to greater inequality

between regions. The growth of road length from year to year, especially during the period 1984 to 2000 has increased, where in 1984 the ratio of road length to outside the area was recorded at 0.22 percent and in 2000 it was 0.28 percent, although the amount was not in line with the increase in motorized vehicles which continued to experience an increase from year to year , on the other hand inequality between regions as measured by the Williamson index has also increased . Since 1984 the inequality between regions was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent. S Before the implementation of regional autonomy where all decisions related to construction of infrastructure is decided by the central government, so that areas far from government centers will experience a delay in the construction of infrastructure that will further increase the imbalance between regions. Mopangga (2011) states that the main source of inequality in Gorontalo Province is very significant due to the ratio of infrastructure spending.

**After regional autonomy, the** regression coefficient value is -.072 and a P-value of 0.000, which means that infrastructure has a significant effect and has a direct negative relationship to regional inequality. The results of this study are in accordance with the hypothesis which states that infrastructure has a negative effect on regional inequality after regional autonomy. The growth of road length from year to year, especially during the period 2001 to 2017 has increased, where in 2001 the ratio of road length to outside the region was recorded at 0.28 percent and in 2017 it was 0.50 percent, on the other hand the inequality between regions as measured by the index Williamson also experienced a decline . Since 2001 inequality between regions was recorded at 0.47 percent and in 2017 it was recorded at 0.02 percent .

With the availability of good roads, it will be able to increase the productivity and accessibility of goods between regions, so that inequality can be minimized between centers of economic activity and areas that produce agricultural products or areas that produce raw materials. Road length is a very important factor in reducing inequality in a region, because the distribution of goods and services as well as people greatly affects the availability of road infrastructure. Interaction between regions will be easy if road conditions are good, so that the mobilization of production factors and production results will be better, causing the birth of new centers of economic growth and an increase in production output.

Infrastructure development can support economic activity. If infrastructure development in areas that are far from the center of economic growth is carried out properly, these regions will become new centers of economic growth. By itself the region can advance and develop following the areas that advance and develop from the region first. So that inequality between regions can be reduced (Iqbal, 2017) .

**The estimation results of the indirect effect of** infrastructure on regional inequality through economic growth before and after the implementation of regional autonomy produce the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.000 and a P-value of 0.06, which means that infrastructure does not have a significant indirect effect on regional inequality through economic growth. The results of this study are not in accordance with the hypothesis which states that infrastructure has a negative effect on regional inequality through economic growth before regional autonomy. The growth of road length from year to year, especially during the period 1984 to 2000 has increased, where in 1984 the ratio of road length to outside the area was recorded at 0.22 percent and in 2000 it was 0.28 percent, although the amount was not in line with the increase in motorized vehicles which continued to experience an increase from year to year , on the other hand inequality between regions as measured by the Williamson index has also increased . Since 1984 the inequality between regions was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent.

There are several economic growth theories where the economic growth theory always includes the infrastructure variable as one of the driving factors for economic growth. Rostow (1960) in his theory of "Growth Stages" considers social overhead capital as one of the main preconditions for takeoff. The social role of overhead capital in accelerating economic growth and in improving community welfare will be greater.

So before regional autonomy, where the area is far from the center of the growth will be experienced kehambatan in infrastructure development, thus causing less developed regions will experience a lag of more developed regions. Not to mention the lack of road access,

it will cause an increase in higher production costs. This is what makes the ratio of road length to area increase inequality between regions.

**After regional autonomy, the** regression coefficient value is -0.119 and a P-value of 0.000, which means that infrastructure has a significant effect and has an indirect negative relationship to regional inequality through economic growth. The growth of road length from year to year, especially during the period 2001 to 2017 has increased, where in 2001 the ratio of road length to outside the region was recorded at 0.28 percent and in 2017 it was 0.50 percent, on the other hand the inequality between regions as measured by the index Williamson also experienced a decline . Since 2001 inequality between regions was recorded at 0.47 percent and in 2017 it was recorded at 0.02 percent . The results of this study are in accordance with the hypothesis which states that infrastructure has a negative effect on regional inequality through economic growth after regional autonomy.

This is in accordance with the research conducted by Iqbal (2017) which found that the results of infrastructure development can support economic activity. If infrastructure development in areas that are far from the center of economic growth is carried out properly, these regions will become new centers of economic growth. By itself the region can advance and develop following the areas that advance and develop from the region first. So that inequality between regions can be reduced.

**The Effect of Investment on Regional Inequality**

**The estimation results of the direct effect of** investment on regional inequality before and after the implementation of regional autonomy produces the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.01 and a P-value of 0.000, which means that investment has a significant effect and has a direct positive relationship to regional inequality. The results of this study are not in accordance with the hypothesis which states that investment has a negative effect on regional inequality before regional autonomy. Investment growth from year to year, especially during the period 1984 to 2000 has increased , in 1984 it was recorded at 1.4 billion rupiah and in 2000 it was recorded at 256 billion rupiah, on the other hand inequality between regions as measured

by the Williamson index also increased . Since 1984 the inequality between regions was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent.

**After regional autonomy, the** regression coefficient value is 0.00 and a P-value of 0.02, which means that investment has a significant effect and has a direct positive relationship to regional inequality. The results of this study are not in accordance with the hypothesis which states that infrastructure has a negative effect on regional inequality after regional autonomy. Investment growth from year to year, especially during the period 2001 to 2017 has increased, on the other hand, inequality between regions as measured by the Williamson index has also decreased . Since 2001 inequality between regions was recorded at 0.47 percent and in 2017 it was recorded at 0.02 percent.

Based on these results, the inequality between regions both before and after the regional autonomy of regional autonomy can be solved either by way of increased investment are evenly distributed throughout the area. The theory put forward by Myrdal states that the return impact caused by the transfer of capital and the profit motive that encourages the development of development is centered on areas with high profit expectations, while other areas will be neglected.

In one of the studies, the causes of regional imbalance are caused by investment because investment activities are only focused on areas that have been developed, so that areas that are left behind will be increasingly left behind and this low investment is inseparable from the high investment risk due to security disturbances and uncertainty in law enforcement. Therefore , it is followed by various policies issued by the government in the form of operational risk policies as one of the factors in calculating capital adequacy, which have a very positive effect on the development of investment in Indonesia.

The results of this study are in line with research conducted previously by Budiantoro Hartono in 2008 using a sample of Central Java Province. Based on the results of this study, one can conclude that the increase in investment value has a positive and significant effect on regional inequality. Any increase in investment value means increasing investment activities

which will increase economic activity. The increase in economic activity that occurs will result in an increase in the prosperity of the population so that inequality will decrease.

**The estimation results of the indirect effect of** investment on regional inequality through economic growth before and after the implementation of regional autonomy produce the following regression coefficient values :

**Prior to regional autonomy, the** regression coefficient value was 0.000 and a P-value of 0.17, which means that investment does not have a significant indirect effect on regional inequality through economic growth. Investment growth from year to year, especially during the period 1984 to 2000 has increased , in 1984 it was recorded at 1.4 billion rupiah and in 2000 it was recorded at 256 billion rupiah, on the other hand inequality between regions as measured by the Williamson index also increased . Since 1984 the inequality between regions was recorded at 0.33 percent and in 2000 the inequality between regions was recorded at 0.86 percent. The results of this study are not in accordance with the hypothesis which states that investment has a negative effect on regional inequality through economic growth before regional autonomy.

Investment is an important factor in economic growth (Sajafii, 2009). An area that is experiencing development, an increase in demand will boost income and demand, which in turn increases investment. Prior to regional autonomy, investors only invested in areas that were central, so that underdeveloped regions would not be seen by investors to invest their capital, so that increased investment could not reduce inequality between regions.

**After regional autonomy, the** regression coefficient value is 0.035 and a P-value of 0.17, which means that investment has a significant effect and has an indirect positive relationship to regional inequality through economic growth. Investment growth from year to year, especially during the period 2001 to 2017 has increased, on the other hand, inequality between regions as measured by the Williamson index has also decreased . Since 2001 inequality between regions was recorded at 0.47 percent and in 2017 it was recorded at 0.02 percent . The results of this study are not in accordance with the hypothesis which states that investment has a negative effect on regional inequality through economic growth after regional autonomy .

The low investment is inseparable from the high investment risk due to the persistence of security disturbances and uncertainty in law enforcement. besides that, there is still a lack of foreign investment entering the regions in Indonesia and there is still a lack of supporting infrastructure such as roads, electricity and clean water .

## CONCLUSION

Regional income has a direct positive effect on regional inequality before regional autonomy. This result is not in accordance with the theory that regional income can reduce regional inequality. This means that an increase in regional income will lead to higher inequality between regions. Regional income has a direct negative effect on regional inequality after regional autonomy. This means that an increase in regional income will cause a decrease in inequality between regions. Meanwhile, indirectly, regional income has no effect through economic growth prior to regional autonomy. Regional income has a significant negative effect through economic growth after regional autonomy.

Infrastructure has a direct positive effect on regional inequality before regional autonomy. This means that the increase in infrastructure in this research will also have an impact on increasing regional inequality. Infrastructure has a direct negative effect on regional inequality after regional autonomy. Meanwhile, infrastructure indirectly has a positive and significant effect through economic growth both before regional autonomy. Infrastructure has a negative effect through economic growth after regional autonomy.

Investment has a positive and significant direct effect on regional imbalances either before or after regional autonomy. This is because investment has increased regional inequality in low-income regions. Increasing inequality between regions can lead to conflict and an unwanted increase in inequality. This finding is not in accordance with the hypothesis in this study. Meanwhile, investment has an indirect positive effect through economic growth either before or after regional autonomy.

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