Development of Regional Infrastructure and Regional GDP Inequality in Indonesia

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ABSTRACT

This research was conducted to analyze the influence of the Influence of Economic Infrastructure (Transportation And Warehousing, Electricity And Gas, Information And Communication) And Social Infrastructure (Education And Health) On Increasing Gross Regional Domestic Revenue (PDRB Daerah In the short term, the expenditure of ILG has the effect of reducing regional GDP, thereby increasing the imbalance between the western and eastern regions by 30 percent.But in the long run it will decrease inequality.The same condition can happen in the long term (western region) that has advanced impact spread effects to the region (47 percent), ILG (78 percent), IIK (37 percent, IP (17 percent) All of these variables are positive and significant, except for the coefficient of IK (- 47 percent) long-term consequences of increasing budget allocations for electricity infrastructure k and gas carry consequences on health infrastructure.

Keywords: Economic Infrastructure, Social Infrastructure, Gross Regional Domestic Revenue

I.   Introduction

Infrastructure plays a strategic role in encouraging the smoothness and acceleration (acceleration) of the development process. Availability of infrastructure will accelerate development in an area or country. The faster and the increased economic development to be implemented, the more infrastructure facilities needed. Without the availability of adequate infrastructure, it is certain that an economic activity or development will generally run haltingly. The procurement of an infrastructure will greatly affect the development of other economic sectors. Availability of adequate infrastructure both in quantity and quality, is an absolute requirement for economic growth to be achieved. Infrastructure development is needed to achieve equity, reduce poverty and improve quality of life. Provision of infrastructure with low quantity and quality will hamper the economy and cause a high cost economy. This condition is a problem in the national economy (Indonesia) and in every region (Province) in Indonesia. Infrastructure development is the responsibility of the government, so that the government budget allocation for infrastructure development is crucial to the development process taking place, as well as the improvement of national economic growth and economic growth of the region in the country. Various research results generally conclude that the realization infrastructure development in Indonesia is too low. As a result the Indonesian economy is not able to achieve its potential growth rate. Post Crisis, its percentage to GDP is relatively low, about 1 percent to GDP (2000), with a tendency to increase to about 3.9 percent of GDP (2009). The 2009-2013 data shows that the average ratio of development spending on infrastructure to GDP is about 4.3 percent. The government is aware of the low realization of infrastructure development in Indonesia in the post-crisis era. The first ten years since 2000-2009, public expenditure or government spending on infrastructure in Indonesia only ranged from 0.8 to 1.7 percent to GDP. The economic growth of a country is influenced by capital accumulation in the form of investments in land, equipment and machinery, facilities and infrastructure, natural resources, human resouces both in quality and quantity, technological progress, information access, innovation and self-development capability and work culture (Todaro, 2000: 37). Capital accumulation occurs when a portion of the income is saved and reinvested in order to enlarge the output and income in the future. Direct earning investments must be supplemented by a supporting investment called economic and social infrastructure investments, for example road construction, electricity provision and construction of communications facilities, all of which are absolutely necessary to sustain and integrate all productive

economic activities. The existence of infrastructure can increase productivity and output for the population where infrastructure can facilitate and increase the intensity of economic activity.

Infrastructure development is one of the most important aspects to encourage and accelerate the process of national development. Infrastructure plays an important role to drive economic growth. This is considering the rate and growth rate of a country can not be separated from the availability of infrastructure such as transpotation and warehousing, telecommunications, and energy, education and health. In general, the role of infrastructure is significant in accelerating economic growth and development. The World Bank (1994) defines the terminology of infrastructure divided into three parts. First, the economic infrastructure is in the form of public utilities (electric power, telecommunication, water, sanitation, gas); public works (roads, dams, bridges, canals, irrigation and drainage); and transportation sector (railway, bus terminal, port, airport). Second, social infrastructure such as education, health, housing, and recreation.Third, the administrative infrastructure of law enforcement, administrative   control   and   coordination.
Therefore, the implementation of infrastructure development needs to be studied to see its impact on the increase of Regional Gross Domestic Product (PDRB) area (Province) in Indonesia. After the economic crisis occurred in Indonesia, the percentage of infrastructure development tended to decline, as shown by the shrinking length of the railroads, as well as the low number of toll road construction only five km per year. From the development expenditure it appears that the percentage of financing for infrastructure development tends to decrease, from about 5 percent of the value of GDP in the pre-crisis period, to 2 percent of GDP. Infrastructure investment has been going on for quite a long time with huge funds or capital, its contribution to increasing economic growth is also very significant, although it can lead to an imbalance in output due to policies that are too development-oriented and more growth-minded than oriented to equity principles. Therefore it is very important to study or analyze the role and contribution of infrastructure development to regional GDP (Province) in Indonesia.

II.   Theoretical Framework

In development and economic growth, infrastructure has strategic roles and contributions, and economists and other experts outside economists do a lot of theoretical research on infrastructure. The relationship between infrastructure such as roads, electricity and telephone with economic growth has been widely analyzed, although the results of the research are not always the same but there is a consensus that infrastructure development is necessary but not an adequate element of economic growth and that the provision of appropriate types of infrastructure in place being efficiently is more important than the large amount of investment invested in the infrastructure sector or the amount of infrastructure built (Hull, 1999). Infrastructure development should also involve the private sector and the community in order to achieve sustainable development. There must be an appropriate combination of large and small scale infrastructure to achieve the target of economic equity and poverty alleviation. Therefore, a more integrated approach to infrastructure development, from planning to service to the community, ensures synergy between sectors, regions and regions.

2.2. Theories of Economic Growth
Economic growth is one of the areas of investigation long discussed by economists, the Merkantilis School of thought, the economic thinkers between the late sixteenth and the late seventeenth centuries, much to discuss the role of foreign trade in economic development. At the beginning of this century Schumpeter became well known for his book on economic development, the book The Theory of Economic Development, and the business cycle or conjuncture. After that the theory of Harrold-Domar and Neo-classical theory has further enriched the analysis of economic growth (Sukirno, 2008: 432). According to Schumpeter the higher the rate of progress of an economy the more limited the possibility to innovate, then the economic growth will be slowed down the road, will eventually reach the level of unbalanced state or stationary state. However, in contrast to the classical view, Schumpeter's view of the underdeveloped state is achieved at a high growth rate.
Neo-classical growth theory was first developed by Robert Solow, who won the Nobel prize in 1987 for his theory. His theory was put forward in the Quarterly Journal of Economics published in February 1956, in a paper entitled: A Contribution of the Theory of Economic Growth (Sukirno, 2007: 451). The Neo-classical theory argues that economic growth stems from the growth and development of the factors that affect aggregate supply. Thus the approach is very different from Harrod-Domar's theory that economic growth is determined by the demand side, which is dependent on the development of aggregate demand.

2.3. Ready Condition With Population Growth

How does population growth affect the steady state ?. To answer this question, it should address how population growth, together with investment and depreciation, affect the accumulation of working capital. As explained earlier, investment increases the capital stock, and depreciation lowers it. But now there is a third force in action to change the amount of working capital. Growth in the number of workers causing capital per worker fell. Used lowercase as the number variable per worker. Thus, $k = K / L$ is capital per worker, and $y = Y / L$ is output per worker.

To fully understand the process of economic growth, it is worth while out of the Solow model and developing models that explain the technological advances that come from outside. These models are often called endogenous growth theory. Because it rejects the Solow model assumption of technological changes that come from outside (exogen). Endogenous growth theory was pioneered by Paul Romer and Robert Lucas (Dornbush& fisher, 2008: 78). The idea that increased investment in knowledge will increase growth is key to linking higher savings rates with higher levels of balance growth (Rudiger&Dornbush, 2008: 79).

2.4. Accelerate Development Policy

Since the end of the second world war, various countries have tried to accelerate economic growth and development so that the level of society's prosperity can be improved. Some countries have achieved rapid development and prosperity. Nevertheless there are also countries that have not been able to develop its economy. Political and economic stability is an important requirement that needs to be met to realize rapid economic growth. In addition, government development policies and development policy approaches that are in line with available resources, are critical in their efforts to accelerate economic growth and development.

2.5. Developing Infrastructure

Modernization of the economy requires a modern infrastructure as well. Various economic activities require infrastructure to develop, roads and bridges, airports, ports, industrial estates, irrigation and water supply, electricity and telephone networks need to be developed. The development of infrastructure must be in harmony with economic development. At a low stage of development, the necessary infrastructure is still limited. At this stage the construction consensus is to build roads, bridges, irrigation, electricity and other infrastructure in a simple level. The more advanced an economy, the more infrastructure is needed. Thus developing the infrastructure must be continuously carried out and must be harmonized with the economic progress that has been achieved and which is to be realized in the future.

2.6. Peran Infrastructure In Achieving Development Objectives

The development of a nation aims to improve prosperity and realize social justice for all its people. For that development requires a proper approach, in order to achieve growth with equity. Higher levels of economic growth, generated by including the widest participation of all people in the development process, is a faster and fairer way of development. Infrastructure plays an important role for it. In addition to encouraging increased investment, infrastructure plays a role in expanding the reach of community participation and equity of development outcomes. The nature and types of infrastructure needed by a nation are influenced by the characteristic nature and pattern of the population dispersion peculiar to the nation. The role of infrastructure for the Indonesian nation becomes very sterategis, considering Indonesia which is the largest archipelagic country in the world consists of 13,000 islands with uneven population distribution patterns. Most Indonesians (about 78 percent) live in Java and Sumatra (ZahedySaleh, 2014: 11-12),

2.7. Definition of Infrastructure

Until now there is no definite definition of infrastructure, but there are several agreements on it. According to Mac Millan's Dictionary of Modern Economics (1996) infrastructure is a structural element of the economy that facilitates the flow of goods and services between buyers and sellers. While The Routledge Dictionary of Economics (1995) provides a broader understanding that the infrastructure is also the main service of a country that helps economic activities and community activities can take place that is by providing transportation and other supporting facilities. According to Grig (1998) and Robert J.Kodoatie (2005: 8) infrastructure refers to the physical system that provides irrigation, drainage, building construction and other public facilities needed to meet basic human needs in the social and economic sphere.

2.8. Type and Classification of Infrastructur

Economic infrastructure usually has a natural monopoly characteristic because the procurement and operation of economic infrastructure will be more economical if it is only done by one company rather than two or more companies. A natural monopoly usually occurs when the economies of scale necessary to provide a good or service are left to one company (Mankiw, 2001: 376). If there are two or more companies that provide water services to the public, then the market share or market share of each company becomes so small that no company can produce profitably.

2.9. Isu and Infrastructure Problems

The problems of infrastructure in Indonesia must be addressed given the strategic role of infrastructure in realizing the long-term goals of national development. If not accelerated infrastructure development, then it becomes an obstacle to the competitiveness of the nation and hinder efforts of equity of development. Indonesia's improved macroeconomic conditions in the past 10 years have attracted investors, but unfortunately infrastructure constraints have caused economic growth to be below their potential level. In addition, income inequality in recent years has also worsened (Saleh, 2014: 43-44). On the other hand, Indonesia is judged by some people internationally to become a big economy in 2025, and it is said that a number of people abroad deserve entry into the group of BRIC countries (Brazil, Russia, India and China). But what is the cause of this infrastructure problem.

2.10. Pengaruh Human Capital Against Economic Growth

Human capital is an important determinant of economic growth. This is mostly explained in the endogenous growth model or new growth model. Endogenous growth models reject the assumption of marginal returns to capital investment diminishing marginal returns to capital investment that are used as neoclassical models. Endogenous growth models suggest that investment returns will be even higher when aggregate production in a country gets bigger. Assuming that private and public (government) investments in the field of human capital or resources can create an external economy (positive externalities) and spur productivity gains that can offset the natural tendency to decrease the yield scale. From the above explanation, it appears that human capital (human capital) is an important factor in increasing the economic output of a country. Therefore, investment for human resources improvement becomes important in development, especially in building two main elements of human capital, namely health and education. Improving skills and knowledge is an opportunity for a country to grow. Education in particular the increasing number of years of school study is a requirement for the next stage of economic development (Frankel, 1997).

2.11. Research

Economic growth can be seen in two forms, namely; extensively with the use of many resources (such as physical, human or natural capital) and intensively with the use of more efficient (more productive) resources. When economic growth is achieved by employing much labor, it does not result in per capita income growth. But when economic growth is achieved through the use of more productive resources, including labor, it generates higher per capita income and raises the average living standard of the community. Growth also requires physical capital and human resources as well as structural changes that include transformation of production, change. composition of consumer demand, international trade and natural resources as well as changes in socio-economic factors such as urbanization as well as population growth and distribution.

Furthermore Amrullah (2006) found that each type of infrastructure has a significant effect on economic growth except water infrastructure. Triwahyuni (2009) found that road, electricity and health infrastructure have a positive and significant impact on the productivity of Indonesian economy. Perwita Sari (2009) found that economic infrastructure (length of road, number of telephone user families, number of electricity user families, and social infrastructure (number of schools) have a positive impact on economic growth so as to help the Disadvantaged District become an open and inter- so that access to various factors of production becomes easier to reach Nuraliyah (2011) found that based on data panel estimation of electricity infrastructure, clean water and health infrastructure in Java have real and positive effect to economic growth while outside Java only electricity and water infrastructure net that has a real and positive impact on economic growth, the road infrastructure both in Java and outside Java is not significant in increasing economic growth.In addition, economic growth in Java can reduce poverty, while economic growth outside Java can not be reduce poverty. Hapsari (2011) found that the variable length of road and the amount of electricity have a significant effect on the GRDP, while the electric and water variables have no significant influence on economic growth. EvantiSyahputri (2013) emphasized that road infrastructure, electricity and clean water provide a positive and significant impact on regional economic growth in the province of West Java.

Zamzami (2014) obtained results that the variable length of roads, irrigation and education significantly influenced PDRB in Central Java. Furthermore, irrigation infrastructure gives the most influence to GRDP in Central Java.

2.12. Framework Thought

Physical capital (physical capital) and human capital (human capital) plays an important role in economic growth. The availability of physical capital is closely linked to the availability of funds for investment. The linkage of infrastructure to economic growth is indicated by the increase in output. Lack of availability of infrastructure in an area causes the potential of existing resources in the area difficult to develop. If local infrastructure is available and well-developed, it will encourage the growth of existing production sectors in the region which will eventually increase regional economic growth (Provincial GDP) and Increase regional per capita income (province) in Indonesia. The Cobb-Douglas Production Function (Cobb-Douglas Function) explains that output productivity consists of capital, labor, and technology. Any increase in capital, labor and technology will affect the change in the level of output produced. Capital used (physical capital) is economic infrastructure which includes: road, electricity, and telephone. While the capital resources (human capital) include: (education and health).

III.   Descriptive Statistics Analysis

To find out whether there are differences in infrastructure (ITP, ILG, IIK, IP, and IK) between islands and regions is used descriptive statistic analysis tool. By using descriptive statistics, it can be seen the comparison of mean, maximum, minimum, standard deviation and standard error of each infrastructure within an island or region. Thus it can be compared whether the Western Region of Indonesia is more dominant in control of all infrastructure or Eastern Region. Similarly, the PDRB value owned by each province will be analyzed through descriptive statistical analysis. It is also to know whether KBI has more GRDP or KBI.

3.1.Specification Model.

The model used in this dissertation is based on the Barro (1990) model with infrastructure as input for production aggregates (Canning &Pedroni, 1999: 8). Assumptions used. Barro is total factor of production with form Log Ait = a0 + b1log X1t which is fixed effect from each province with index i and index t as a certain time. It is also assumed that an optimal level of infrastructure can maximize the growth rate. If the infrastructure is below the growth that maximizes the infrastructure, then the addition of infrastructure will increase output, otherwise if it is above the optimal level then the addition of   infrastructure   will   reduce   the   level   of   output.

The inner model is based on the model used by Canning with some adjustments. This is done because of the conformity with the data operational variables studied. As inputs used operational variables are: regional PDRB (34 provinces), investment in social infrastructure (education and health), economic infrastructure (transportation and warehousing, electricity and gas, information and communication), and additional dummy variables ie differentiation of area between Western Indonesia (KBI) and Eastern Region of Indonesia (KTI) Canning Model is an expansion of the Cobb-Douglass production function. which has the form, as follows: However, in this dissertation, the infrastructure capital is then divided into 2 (two) major sections, namely the variables of economic infrastructure concerning (transportation and transportation, electricity and gas, information and communication) and social infrastructure concerning (education and health). Then the dummy variable is the regional difference between the Western Region of Indonesia and the Eastern Region of Indonesia, so the equation model also uses a natural-logarithmic transformation, then the equation is:

$$Y_{it} = \alpha_o + \alpha_1 ITP_{1it} + \alpha_2 ITG_{2it} + \alpha_3 IIK_{3it} + \alpha_4 IP_{4it} + \alpha_5 IK_{5it} + \varepsilon it ....$$

Where :

1. Y is the output which is the GRDP of every province (34 provinces) at constant prices in 2010.
2. K is capital divided into physical capital and capital resources categorized into investment of economic infrastructure and social infrastructure
3. Area (region) is dummy variable.1 for Western Indonesia (KBI) and 0 for Eastern Indonesia (KTI).
4. Transport and Trade Infrastructure (ITP)
5. Infrastructure of electricity and gas (ITG)
6. Information and Communication Infrastructure (IIK)
7. Educational Infrastructure (IP)
8. Health infrastructure (IK)
9. αo is the constant (intercept) of the Y axis, when (ITP), (ILG), (IIK), (IP), and (IK) are assumed to be 0 (zero).

10. $\alpha1, \alpha2, \alpha3, \alpha4, \alpha5$ are regression or slope coefficients
11. ϵadalahresidual (disturbance error)
12. i is region or province (34 provinces) and t is time (2010 - 2016).

In this study, variables considered ceteris paribus are technological progress, labor (population), and natural resources. Furthermore, this research uses dummy variable that is Area (region) that happened in Indonesia between Indonesia Western Area (KBI) with Eastern Indonesia (KTI). It is intended to know the effect of (difference) of infrastructure development that happened between KBI and KTI have implication to PDRB inequality between KBI and KTI. Thus the model equation bove is changed to:

$IW_{it} = \alpha_0 + \alpha_1 d_1 + \alpha_1 ITP_{it} + \alpha_2 ILG_{2it} + \alpha_3 IIK_{3it} + \alpha_4 IP_{4it} + \alpha_5 IK_{5it} + \epsilon it$....................

Where :
IW = Williamson Index
d = Dummy Variable (KBI = 1, KTI = 0)
i, t = 34 (province), and time (2010-2016). Where:
IW = Williamson Index
D = Dummy Variable (KBI = 1, KTI = 0)
i, t = 34 (province), and time (2010-2016).

2 Estimation Method

To estimate the model with panel data can be done OLS method Ordinary least square method. Equation is developed into a quadratic model with the aim of looking at the U-shape curve of each variable so that:

$Y_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 ITP^2 + e_2$....................
$Y_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 ILG^2 + e_3$....................
$Y_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IIK^2 + e_4$....................
$Y_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IP^2 + e_5$....................
$Y_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IK^2 + e_6$....................

Furthermore, equation model is used to estimate the effect of infrastructure on regional inequality (IW), so that the equation of IW categorical estimate is as follows:

$IW_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 ITP^2 + e_2$....................
$IW_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 ILG^2 + e_3$....................
$IW_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IIK^2 + e_4$....................
$IW_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IP^2 + e_5$....................
$IW_{it} = \alpha_0 + \alpha_1 ITP + \alpha_2 ILG + \alpha_3 IIK + \alpha_4 IP + \alpha_5 IK + \alpha_6 DUM + \alpha_7 IK^2 + e_6$....................

4.Analysis.

4.1.Descriptive Statistics Analysis of KBI and KTI Infrastructure 2010-2016.
To find out the condition and existence of infrastructure that occurred in the Western Region of Indonesia (KBI) and Eastern Region of Indonesia (KTI) from the Year 2010-2016 used descriptive statistical analysis.

Table of Descriptive Statistics Infrastructure (billions of rupah) Year 2010-2016 Western Indonesia (KBI) and Eastern Indonesia

Infrastructure	Statistikdeskriptif			
	Western Indonesia Region(KBI)		Eastern Indonesia(KTI)	
	Average(mean)	sample variance	Average(mean)	Sample variance
ITP	14438,151	203965922,5	3727,261	8641636,601
ILG	2050,924	12063053,3	51,084	2644,688
IIK	18764,815	902092612,6	2956,117	10106813,55
IP	14924,748	481570199,8	3586,765	11106367,620
IK	4454,824	38417707,1	1702,697	2031435,569
Jumlah	54633,462	1.638.109.495	12023,924	2031435,569

Source: Statistics Indonesia several years (processed), 2016

From the table explained that the average allocation of transportation infrastructure and warehousing (ITP) for KBI Rp 14438.151 (billion rupiah) is much larger when compared with KTI Rp 3727.261 (billion rupiah). Proportion of 79.5 percent for KBI, while KTI 20.5 percent. In other words, the ratio (ratio) of transportation infrastructure and warehouse allocation allocation between KBI and

KTI is 3.9: 1. Similarly, the allocation of electricity and gas infrastructure (ILG) expenditure for KBI Rp 2050,924 (billion rupiah) is bigger compared to KTI Rp 51,084 (billion rupiah). The proportion of ILG for KBI is 97.6 percent, while KTI is 22.4 percent. In other words, the ILG (ratio) between KBI and KTI is 40.15: 1. Thus the allocation of information and communication infrastructure spending (IIK) for KBI Rp 18764.815 (billion), while KTI Rp 2956,117 (billion rupiah) . The proportion of IIK for KBI is 86.4 percent and KTI 13.6 percent. In other words, the ratio of IIK between KBI and KTI is 6.4: 1 for KBI. Not much different from the allocation of education infrastructure spending, where KBI Rp 14924,748 (billion rupiah) and KTI Rp 3586,765 (billion rupiah). The proportion of IPs for KBI was 80.6 percent, and KTI was 19.4 percent. Comparison between KBI and KTI is 4.2: 1. Similarly, the allocation of health infrastructure spending is larger for KBI than KTI. Where is KBI Rp 4454,824 (billion rupiah) and KTI 1702,697 (billion rupiah). The proportion of IK expenditure allocation for KBI was 72.4 percent and KTI 27.6 percent. Comparison between KBI and KTI is 2.7: 1. Thus it can be concluded that the allocation of infrastructure spending (transportation and warehousing, electricity and gas, information and communications, education and health) is much greater in the Western Region of Indonesia (KBI) than in Eastern Indonesia (KTI). From this condition can be described that the development is more developed (advanced) in the Western Region of Indonesia (KBI) compared with Eastern Indonesia (KTI).

4.2. Analyzed Statistics Analysis of PDRB ADHK Series 2010 from 2010-2016
To know the condition and the difference of Bruoto Regional Domestic Product (PDRB) value between KBI and KTI from 2010-2016 used descriptive statistic analysis. More details can be seen in Table

Table
Analysis of Descriptive Statistics of PDRB ADHK Series 2010 year 2010-2016
Western Indonesia (KBI) and Eastern Indonesia (KTI)

	PDRB ADHK Seri 2010 (billion rupiah)	
	Western Indonesia Region (KBI)	Eastern Indonesia (KTI)
Average (mean)	390445,379	90226,643
Variant Sample	1,74358E+11	10303255182

Source: Statistics Indonesia various years (processed) 2017.
From the table it is explained that the average value of GRDP ADHK Seri 2010 for the Western Region of Indonesia (KBI) Rp 390445,379 (billion rupiah) and Eastern Indonesia (KTI) Rp 90226,643 (billion rupiah). This means that the average value of the KBI's GRDP is much greater than that of KTI. The proportion for KBI was 81.2 percent while KTI was 18.8 percent. Thus the regional economic output (GRDP) is more dominant in KBI.

4.3 The impact of ILG ^ 2 (squared) on the 2010
ADHK Series GRDP To find out the impact of ILG ^ 2 (rank 2) on the 2010 ADHK Series GRDP can be seen in Table
Table ILG ^ 2 (second rank) Estimate Results of the 2010 ADHK Series GRDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.292968	0.307460	17.21514	0.0000**
ITP	0.334828	0.064010	5.230907	0.0000**
ILG	0.782495	0.105291	7.431766	0.0000**
IIK	0.371676	0.073711	5.042343	0.0000**
IK	-0.474954	0.088623	-5.359237	0.0000**
IP	0.174980	0.072474	2.414379	0.0166*
DUM	-0.299548	0.075903	-3.946485	0.0001*
ILG^2	-0.040589	0.007523	-5.395388	0.0000**

Source: Results of Data Processing with Eviews 10. 2017. * Significance 5 percent
** significance of 1 percent. Estimates using OLS

The table shows that the impact of ILG ^ 2 on GRDP is negative (-0,040,589) and significant. Because the coefficient β <0, then the curve U-shaped inverted. This illustrates that in the short run, the increase in ILG budget allocation has the effect of reducing regional GDP, thereby increasing the imbalance between the western and eastern regions by 30 percent. But in the long run will decrease inequality. This situation can also occur equally in long-term (western) regions that have advanced impact spread effect on the eastern region. This is evident from the coefficients of ITP (34 percent), ILG (78 percent), IIK (37 percent, IP (17 percent) All positive variables are positive and significant except for the coefficient of IK (- 47 percent) the consequences of increasing budget allocations for

electricity and gas infrastructure bring consequences on health infrastructure.

IV.   Conclusion

Based on the results of the research and discussion that has been done, the analysis of descriptive statistics with data of 2010-2016 is known that the allocation of infrastructure spending (transportation and warehousing / ITP, electricity and gas / ILG, information and communication / IIK; education / IIP and health / IK) is much larger in the Western Region of Indonesia (KBI) compared to Eastern Indonesia. With this picture it is known that development is more developed (concentrated) in the Western Region of Indonesia compared with Eastern Indonesia (KTI).

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