

The Impact of Fiscal Decentralization toward Regional Inequalities in Eastern Region of Indonesia

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Abstract

This research aims to reveal whether fiscal decentralization is able to reduce regional inequality at Eastern Region of Indonesia. This research also endeavors to detect other variables (such as population growth, education participation level, open-unemployment rate, and investment rate) as the control variables that may affect regional inequality.

The estimation result using panel data from 16 provinces during 2001-2010 in Eastern Region of Indonesia confirms that (1) fiscal decentralization is not able to reduce regional inequality, (2) population growth, education participation level, and investment rate have an effect to reduce regional inequality, and (3) in long term, economic performance tend to be better in the Eastern Region of Indonesia due to the change on the economic structure from traditional pattern to modern pattern. This condition is reflected on the Kuznets' Inverted-U hypothesis confirmation.

Keywords: fiscal decentralization, regional inequality, change on the economy structure pattern.

1. Introduction

Debate that comes up among economics experts and practitioners until recent time that become the core of discussion and exploration is about fiscal decentralization policy. The main issue that is discussed is related to the relationship between fiscal decentralization and regional inequality.

Some of the empirical studies have been conducted related to the relationship between fiscal decentralization and regional inequality. The results of those studies have come to various conclusions. According to Kim *et.al.* (2003) and Bonet (2006), fiscal decentralization has positive effect on regional inequality. It means that higher fiscal decentralization's dimension results in higher rate of regional inequality. This finding is responded by Canaletta *et.al.* (2004), Widhyanto (2008), and Rodriguez-Pose and Ezcurra (2009). They argue that fiscal decentralization has negative effect toward regional inequality. Their view resembles the theoretical hypothesis based on the Kuznets' Inverted-U curve. Further, in another perspective, Shah (1997) records with some exceptions in developing countries that explicitly the transfer that is allocated to poor region for achieving equality is not well-utilized so that it causes fiscal disruption, weakens economic growth, and even makes the local government's financial worst; those, in turn, will widen regional inequality. This view is supported by Shankar and Shah (2003) when decentralization policy is failed to create development equality on each country or region.

This research is aimed to analyze the role of fiscal decentralization on regional inequality in Easter Region of Indonesia. Considering that fiscal decentralization policy has been started since 2001, this research is also an evaluation of its effect on each province in the Eastern Region of Indonesia. The next part will deliver theoretical framework and analysis model development that are utilized in this research. The last part is related to the discussion and suggestion of the research result.

2. Theoretical Framework

2.1. Fiscal Decentralization Objective

In simple term, fiscal decentralization theory and practice are about how fiscal decentralization provides contribution on the achievement of economics target such as economics efficiency, income redistribution, and macroeconomics stability.

Fiscal decentralization is often defined as fiscal authority delegation from central government to local government. Fiscal decentralization can bring huge economics efficiency in resource allocation among public sector. Since the public service preference differs on each region, the standardized service provided by the government is perceived to be less-efficient. Therefore, local government is more suitable to deliver the service since local government is assumed to be able to understand the preference uniqueness of each region. When local government holds the authority, it will sets off competition among local governments in delivering public service and chasing economic growth.

According to Prud'home (1995), since individual's preference and mobility are different for each region, decentralization system can be more efficient. On the contrary, if the individual's preference is similar, then the standardization of public service will be more efficient. Prud'home (1995) also states that even the society who lives at particular region has similarity on its preference, and local government can be more efficient in public

service compared to central government.

Oates (1993) mentions that fiscal decentralization is able to improve economic efficiency since local government is closer to local society than central government so that local government will be more responsive toward local's needs and preferences. Local government also has a better understanding on local preference and finance. Economic efficiency induces population to move and live at the regions and community that can meet their preferences. Oates (1999) also states that fiscal decentralization issue becomes a trend, both in developed and developing countries. Several countries encourage devolution to improve the performance of their public sector's service. Decentralization enhances wealth that is more than the outcome achieved from centralized governmental system. The output efficiency level is quite varied among regions due to various preferences and finance. However, it should be the responsibility of the lowest structure of government. Thus, to run the governmental function, it needs fiscal instrument's specification. Fiscal instrument of a federal system consists of taxation, inter-governments aid, and sharing income. The problem is which tax imposition that is proper and good to be utilized on the different government level.

Jonathan Rodden (2002) says that one of the most difficult challenges faced by several governmental systems is fiscal indiscipline among local governments. Vertical fiscal inequality has negative effect on local government fiscal performance. Fiscal decentralization is risky when local government marks up its expenditure far beyond actual finance. The improvement of government aid causes tax reduction; money transfer improvement instigates higher expenditure than local government development. Central government will limit local autonomy loan when vertical fiscal inequality is high. Vertical fiscal inequality affects local government performance if local autonomy loan is high. When local autonomy loan is low, loan deficit is still below tight control of central government. This kind of political atmosphere disturbs fiscal performance of local government.

From the explanation above, there are two opposing views related to fiscal decentralization and economic efficiency. Decentralization system is more efficient than centralization system since decentralization creates competition among local governments. Decentralization can become less efficient if local government expenditure cannot be covered by its local income; furthermore, if the competition role is quite dominant, it triggers regional inequality. Fiscal decentralization instrument on each country or region is similar: tax, financial aid, and loan.

2.2. Fiscal Decentralization and Regional Inequality

Bonet (2006) examined the effect of fiscal decentralization toward regional income inequality in Colombia. By using inter-departments data panel set, it found strong evidence that fiscal decentralization process increased regional income inequality. This trend was caused by a set of factors such as recent expenditure that was mostly allocated to new resources of the local government (for instance: salary and wage) not to capital or infrastructure investment, lack of national transfer redistribution components, no sufficient incentive from national until local levels to promote efficient benefit from them, lack of institutional capacity in local government.

The empirical result also confirms that the crucial elements of fiscal decentralization policy affecting regional income inequality are: fair transfer system, ability to select the sector, to where the resources are allocated and proper incentive allocation. Those elements play important role in succeeding decentralization to reduce regional income inequality. According to Bonet (2006), there are two variables that should be controlled: economic openness level and economic agglomeration trend that have negative effect on regional inequality.

Rediguez-Pose and Ezcurra (2010) analyzed the relationship between decentralization and regional inequality among developed and developing countries. In general, it is assumed that authority and resource transfer from central government to local government can cause unpleasant effect on the national economics cohesion. The result showed that fiscal decentralization and politic were completely cut-off from the inequality evolution among regions. It implies that there is a constraint on institutional capacity, fiscal capacity, and political capacity which administratively disadvantaged regions compete with rich, strong, and bigger region in achieving higher autonomy. To balance the inequality, it needs better capacity of the local government in disadvantaged regions to mobilize and exploit their economics potentials and make policies preferred by local population mainly for the ignored or less-prioritized region in national policy. The presence of national government with fiscal redistribution capacity becomes one of the significant factors that bounds negative potentials of rural regions decentralization. The relationship between decentralization and regional inequality evolution are much varied depending on the development rate of a country. The result indicates that in developed country, political decentralization does not affect inter regions inequality evolution; whereas, fiscal decentralization contributes to reduce regional inequality. Inequality increase cannot be compensated by the positive effect of politics. It was also explained that local governments' policy decision in a developed country were diverse which tended to ignore the evolution of inter regions inequality. One of the exceptions only came from health sector which could reduce poverty. Inequality among regions which either increased or decreased depended on decentralization degree. The relationship between decentralization and inequality evolution at regional/local level was obviously

affected by a county's wealth, dimensions difference, and firm fiscal distribution system. Therefore, when a nation's income is high, internal inequality is limited, nation's wealth is strong, and fiscal territorial system is progressive, then decentralization will not be continued since it endangers territorial cohesion (and, if any, will improve regional inequality); meanwhile, low and middle income nations should take more careful steps since the positive effect potential of political decentralization toward cohesion will be equally compensated by core and rural regions' capacity inequality to make the resources more decentralized, particularly by omitting progressive fiscal territorial system.

Widhiyanto (2008) examined fiscal decentralization and regional income inequality in Indonesia in 1994-2006. By considering economic convergence, it found empirical evidence that during 1994-2000 there was economic inequality; meanwhile, during 2001-2004, there was no economic convergence. This finding resembles new theories in fiscal decentralization. Sigma convergence will not take place since income per capita's variance coefficient is fluctuated during observation period. Meanwhile, local government fiscal decentralization policy implementation faced higher variance coefficient of government's income per capita. It is due to the regions which have natural resources can take a benefit on it; whereas, those regions which are lack of natural resources cannot. Other finding also proves that fiscal decentralization has negative effect on the income inequality among regions per capita. It also supports new theories in fiscal decentralization as fiscal decentralization is mentioned to be able to reduce regional income inequality.

Lessman (2006) observed the role of fiscal decentralization on regional inequality. The finding indicated that countries with high decentralization level had relatively low regional inequality. It implied that inter-regions distribution in decentralization was not risky but could reduce regional inequality. This result can only be generalized in well-developed countries. Alternatively, decentralization in under-developed countries has negative effect on regional equity. It is based on the assumption that developing countries have high corruption rate, so that decentralization opens an opportunity for local government authority to exploit its population and local public sector. Therefore, decentralization is much risky in under-developed countries. In transition countries such as East Europe, decentralization can improve inequality among regions due to its historical and organizational backgrounds that are totally different: in communist centralized fiscal, core agglomeration can develop rapidly. The test result demonstrates that decentralization has positive effect on regional inequality, but not significant. The conclusion is that decentralization improvement is not risky for convergence process; and, competition among countries or regions can reduce regional inequality.

Akai and Sakata (2005) examined fiscal decentralization, commitment, and regional inequality. In conventional approach, fiscal decentralization appeared to reduce redistribution power among regions since fiscal decentralization worked in a set of commitments.

2.3. Research Conceptual Framework

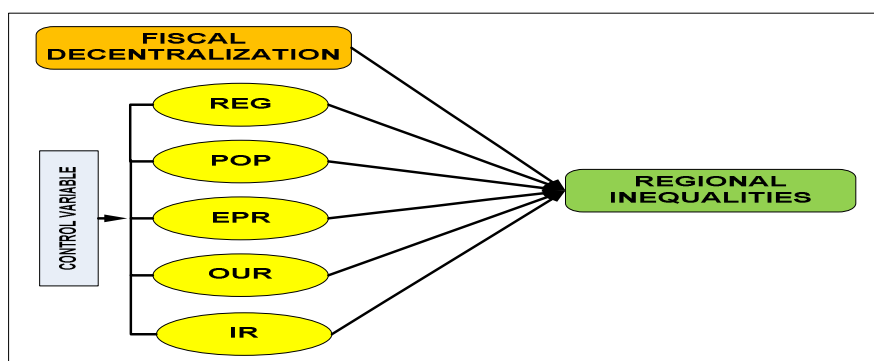


Figure 1. Research Conceptual Framework

3. Method

3.1. Research Approach

This research utilizes positivist approach. According to Neuman (2006:82-83), positivist approach is a method that is organized to combine deductive logic and empirical observation precisely on the individual or group behavior to find the pattern and confirm the causal relationship that is usable to predict the general pattern of human activities. Positivist approach not only analyzes the inter-dependent correlation and co-existence of causality, but also is able to explain the condition that occurs in society (explanatory capability) as well as predict things which are going to happen (predictive capability) related to fiscal decentralization, economic growth, and regional inequality.

3.2. Type and Source of the Data

The data type in this research is secondary data. Most of the secondary data is obtained from Indonesia Statistic, Directorate General of Budget of Finance Ministry of Indonesia Republic, Ministry of Development Acceleration, and other relevant institutions as well as internet websites. Those collected data include APBD's (Local Government Revenue and Expenditure) data consisting of Regional Income (*Dana Alokasi Umum*/General Allocation Fund, *Dana Alokasi Khusus*/Special Allocation Fund, *Dana Bagi Hasil*/ Revenue Sharing Fund, and *Pendapatan Asli Daerah*/ Fiscal Autonomy) and Local Expenditure, PDRB (*Produk Domestik Regional Bruto*/ Regional Gross Domestic Product), economic growth of provinces, RGDP development rate, income per capita growth of provinces, population members who are 15 – 18 years old that have graduated from the middle schools level (Senior and Junior High Schools levels), population growth and number, level of open-unemployment, and domestic investment in GDP value, and other supporting data for this research. The data is collected from 2001-2010. The data is expected to be able to explain the consequences of fiscal decentralization implementation in Eastern Region of Indonesia.

3.3. Definition and Measurement of Variables

Definition and measurement of variables are intended to explain the observed variables. In other words, variable definition is the guidance on how to measure a variable.

Table 1. Definition and Measurement of Variables

Num.	Variable	Variable Measurement
1	Regional Inequality (RI)	Regional Gross Domestic Product inequality on the constant price among regencies/cities in a province by using Williamson's Index method
2	Regional Economic Growth (REG)	Regional Gross Domestic Product's growth percentage on the constant price year by year
3	Population (POP)	Population growth of in a province (%)
4	Education Level (EPR)	Education Participation Rate (%)
5	Unemployment (OUR)	Open-Unemployment Rate (%)
6	Investment Rate (IR)	Ratio between Investment and province's Regional Gross Domestic Product
7	Fiscal Decentralization (FD)	Ratio between Balance Fund (General Allocation Fund, Revenue Sharing Fund, and Special Allocation Fund) and Total Local Expenditure.

4. Data Analysis

Data analysis in this research is aimed to test the hypothesis as the answers of the research problems. Since the data is time series and cross-section, data analysis method uses panel data analysis. Panel data or pooled data is the combination between time series and cross-section data. By accommodating cross-section and time series variables, pooled data is able to derive omitted-variables since this model ignores relevant variables. Besides, it can overcome inter-correlation among independent variables that may cause bias interpretation of the regression analysis (Nachrowi and Usman, 2006).

In econometrics estimation model, there are three techniques. First, it is Pool Least Square (PLS) which uses Ordinary Least Square (OLS) method to estimate. This technique combines or pools all of the time series and cross-section data. Second, it is Fixed Effect Model (FEM). This approach is a technique that considers dummy variables since there is a possibility of omitted variable problem to occur which causes intercept time series and cross-section change. Third, it is Random Effect Model (REM) which emphasizes on the efficiency refinement of the least square process by considering the error of cross-section and time series. Random Effect Model is the development of Generalized Least Square (GLS) estimation. In general, the econometrics model is as follow:

$$RI = \alpha_0 + \alpha_1 FD_1 + \beta_1 (REG_{it})^2 + \beta_2 POP_{it} + \beta_3 EPR_{it} + \beta_4 OUR_{it} + \beta_5 IR_{it} + \varepsilon_{it}$$

5. Result and Discussion

5.1. Result

5.1.1. Analysis Model Test

Since this research uses panel data analysis model, it needs to test the analysis model. The model analysis result that uses three estimation techniques on the panel data in all of the provinces of Eastern Region of Indonesia is presented below:

Table 2
Model Analysis Test Result of Regional Inequality In Eastern Region of Indonesia

Variable	PLS	FEM	REM
C	0.016465 (0,0833225)	0.305752 (6,506668)*	0.258325 (2,764997)**
FD	-0.218881 (-2,014145**)	-0.024790 (-1,031194)	-0.152882 (-1,113730)
REG	0.298737 (3,773490)*	0.105400 (3,297621)*	0.085054 (0,894670)
(REG) ²	-0.028310 (-3,594958)*	-0.013859 (-3,091973)*	-0.008796 (-0,694921)
POP	-0.257311 (-1,437456)	-0.086870 (-1,142304)	-0.291536 (-1,396029)
EPR	-0.000310 (-0,531005)	0.001903 (5,882753)*	0.001697 (1,135335)
OUR	0.006862 (3,023653)*	-0.000471 (-1,127092)	0.000374 (0,089051)
IR	-0.465728 (-5,696581)*	-0.139412 (-5,905636)*	0.264210 (1,302136)
Adj R ²	0.409899	0.937922***	0.040979
DW	0.521332	1.207855****	1.193339
Hausman test (FEM vs REM)	-	0.5896	0.5896****
F-test (PLS vs FEM)	8,087293	8,087293****	-

Description:

* Significant with $\alpha = 1\%$

** Significant with $\alpha = 5\%$

*** the best model based on determinant coefficient indicator

**** the best model based on Durbin-Watson indicator

***** the best model based on Hausman's Specification Test

***** the best model based on F-test Specification Model (F-table 99% = 2.41)

Based on the Table 2 above, it reveals some information. First, observed from the variable's coefficient perspective, PLS and FEM techniques are better than REM technique when in REM all of the variable's coefficients are not significant unless for intercept variable. Second, though based on the Hausman's specification test, it recommends that REM is more consistent and more efficient based on null hypothesis, the score of determinant coefficient (R^2) and Durbin-Watson coefficient are not better than FEM technique. It implies that REM can be ignored in further analysis on the regional inequality. Third, the result from F-test through PLS and FEM is quite robust. It is proven by the F-test score that is quite far beyond the limit of the F-table. The F-value is 8.09, while the F table with numerator (N_1) 10 and denominator 153, at 99% level of confidence shows 2.41. Also, the other indicator that can be used is adjusted R^2 and Durbin-Watson values which are statistically indicate better and more efficient FEM technique to be considered in analyzing the consequences of fiscal decentralization on regional inequality in Eastern Region of Indonesia.

5.1.2. Estimation Result

Here is the estimation result of the fiscal decentralization's consequences toward regional inequality in Eastern Region of Indonesia. Table 3 below displays estimation result using Fixed Effect Model (FEM) in panel for 160 observations in Easter Region of Indonesia.

Table 3
Estimation Result of Fiscal Decentralization and Regional Inequality

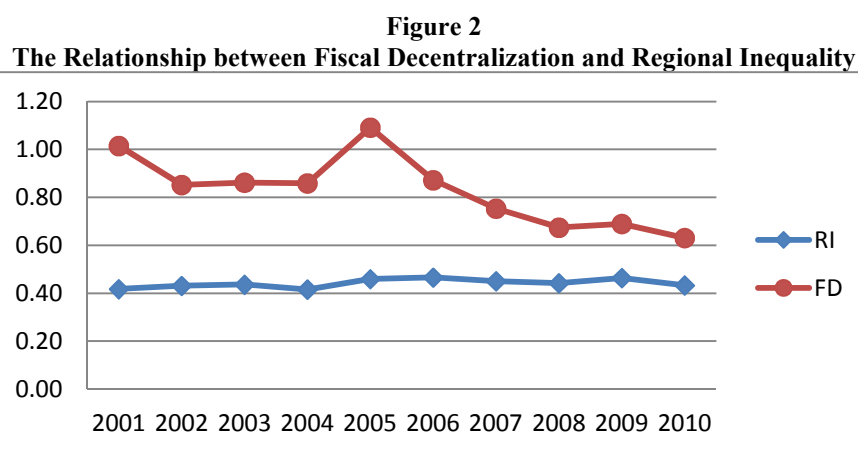
Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.305752	0.046991	6.506668	0.0000
FD	-0.024790	0.024040	-1.031194	0.3043
REG (REG) ²	0.105400 -0.013859	0.031962 0.004482	3.297621 -3.091973	0.0012 0.0024
POP	-0.086870	0.076048	-1.142304	0.2553
EPR	0.001903	0.000324	5.882753	0.0000
OUR	-0.000471	0.000418	-1.127092	0.2617
IR	-0.139412	0.023607	-5.905636	0.0000
Weighted Statistic				
Adjusted R-squared	0,937922			
F-statistic	110,1950			
Prob(F-statistic)	0,000000			
DW	1,207855			

In general, based on the information presented in Table 3 above, it can be confirmed that there are some points of fiscal decentralization's consequences toward regional inequality in Eastern Region of Indonesia. First, by using FEM technique on 160 observations, it obtains determinant coefficient (adjusted R²) of 0.9379. It means that fiscal decentralization (DF), economic growth (REG), population growth (POP), education participation rate (EPR), open-unemployment rate (OUR), and investment rate (IR) variables are able to explain regional inequality (RD) coefficient as much as 93.79 percent; whereas, the rest 6.21 percent is explained by other variables other than variables in the equation model of this research. The ability of the independent variable is also confirmed by F-statistic which scores 110.20 at the probability of F-statistic in 99 percent level of confidence ($\alpha=1\%$). Second, based on t-statistic test to detect the relationship among variables demonstrates that regional economic growth (REG) and investment rate (IR) variables have quite significant effect which is able to reduce regional inequality. Education participation rate (EPR) number is positive significant to improve regional inequality. On the other hand, fiscal decentralization (FD) population growth (POP), and open-unemployment rate (OUR) are not quite strong to reduce regional inequality (RI). Third, as perceived from Fixed Effect Model, Cross-Section, which describes regional inequality condition of each province in Easter Region of Indonesia, is negative; unless, it is for West Nusa Tenggara and East Kalimantan provinces that get positive result.

5.2. Discussion

5.2.1. Fiscal Decentralization and Regional Inequality

Based on the result, it confirms that fiscal decentralization's coefficient is negative 0.024790. It implies that when the transferred fund allocation of Local Government Revenue and Income (APBD) decreases, it improves regional inequality for 0.024790 or 0.02 percent. Conversely, if the transferred fund allocation increases, it reduces regional inequality. Even fiscal decentralization is able reduce regional inequality, the relationship between the two variables is not significant.



Source: Indonesia Statistic, 2001-2010

Fig. 2 above displays the relationship between fiscal decentralization and regional inequality which is measured by using Williamson's Index. The relationship between the two variables is not consistent. In 2001-2003, when decentralization fund tended to decrease, it resulted in increasing regional inequality. In 2004-2005, fiscal decentralization fund increased; yet, regional inequality continued to improve. Next, in 2006-2010, fiscal decentralization fund tended to decrease; whereas, regional inequality was relatively stable though it tended to increase. It implies that local government must be sensitive and give more attention on this indication. Therefore, though the improvement percentage is relatively small, it brings quite huge contribution on the local autonomy development sustainability.

The cause of the weak relationship between fiscal decentralization and regional inequality is due to some factors. First, decentralization fund allocation is not yet able to meet the basic needs of local's basic fiscal needs since it is quite small. Second, local government expenditure allocation is not precisely on the target that causes inefficiency in managing expenditure budget of the local government as most of the amount is distributed to expenditure for government officer and capital expenditure. For instance, capital expenditure was expected to be able to finance productive economic activities; yet, it was more to finance less-productive and consumptive activities. It resembles Canaleta's *et.al.* (2004) view as public sector measurement has positive relationship with regional inequality. Third, administration system and economic institution do not provide sufficient support and are not well-managed; thus, it hinders the society in conducting economic activities.

5.2.2. The Relationship between Control Variable and Regional Inequality

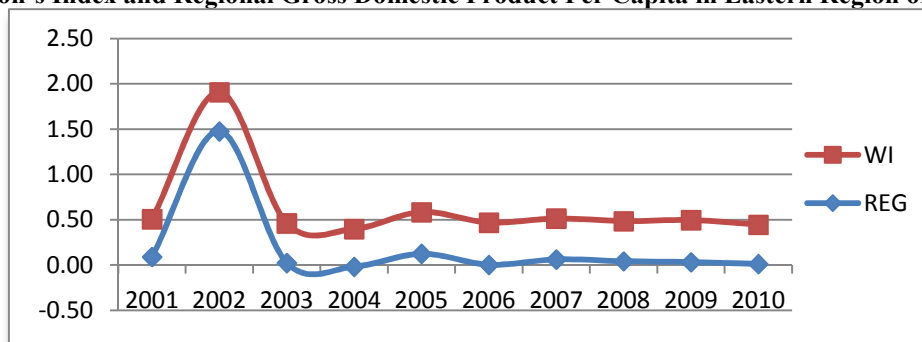
5.2.2.1 Economic Growth and Regional Inequality

Referring to Kuznets' view that on the initial stage of development (short term development), it causes inequality; however, after some processes in long term (to particular point) it will reduce the inequality. It indicates that in the inverted-U hypothesis model of Kuznets, there are two stages of economic development process to achieve nation prosperity and wealth.

5.2.2.1.1. Economic Growth and Income Per Capita Inequality Increase

Based on the research result by using the first model, it confirms that the coefficient of regional economic growth (REG) is positive 0.105400 and significant at 99% ($\alpha=1\%$) level of confidence. This coefficient implies that if the regional economic growth increases, it causes an increase on regional discrepancy for 0.105400 or 0.11 percent.

Figure 3
Williamson's Index and Regional Gross Domestic Product Per Capita in Eastern Region of Indonesia



Source: Indonesia Statistic, 2001-2010

Figure 3 above presents that when the Regional Gross Domestic Product (RGDP) per Capita increases, it is followed by an increase on the Williamson's Index of inequality (WI); conversely, when the RGDP per capita decreases, it reduces the Williamson's Index as well. It means that the economic growth that was expected to be able to reduce regional inequality in Eastern Region of Indonesia cannot be achieved during initial period.

5.2.2.1.2. Economic Growth and Income per Capita Inequality Decrease

By utilizing the second model, it can explain the Kuznets' phenomenon. It confirmed by the coefficient score which shows -0.013859 and significant at probability level less than 5%. The negative sign but significant indicate that Kuznets' hypothesis is confirmed. At first, economic growth made the inequality got worst; yet, after coming at particular point, economic growth reduced the inequality.

Based on the two analysis models above, to combine the two models based on the Table 3 with the assumption of $X_1 = X_3 = X_4 = X_5 = X_6 = 0$, it arrives to the following equation:

$$RI = 0.3058 + 0.1054X_2 - 0.0139X_2^2$$

Figure 4
Williamson's Index Curve and Regional Gross Domestic Product Per Capita

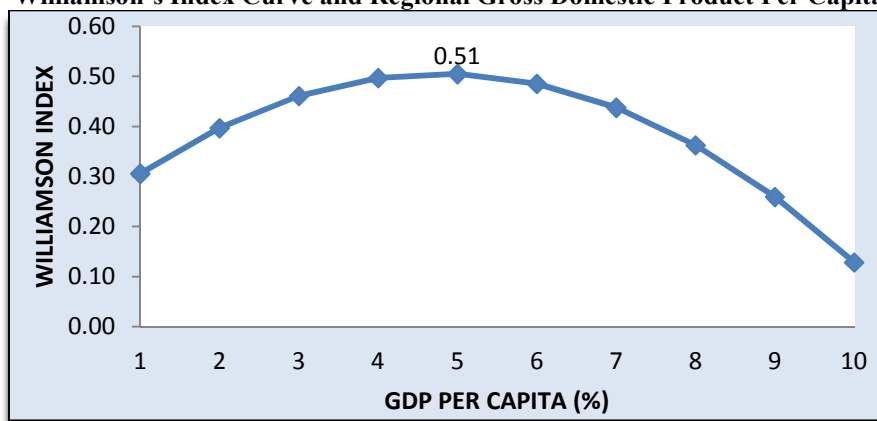


Figure 4 confirms that the relationship between economic growth and Williamson's Index in the Eastern Region of Indonesia has inverted-U shape. During the initial stage of development, regional inequality showed by Williamsons' Index continued to improve when the RGDP also increased. However, when it came to the particular extreme point, regional inequality started to decrease that was followed by the increase on the RGDP growth.

The process to arrive at sustainable development stage can decrease regional inequality. In Lewis' theory, it is known as structural transformation development theory. According to Lewis' development model, sustainable growth process which from the modern sector expansion as well the development and advancement from traditional sector to modern sector of economic. The expansion from traditional sector to modern sector starts from the investment on education sector; therefore education sector increases. However, since the modern sector requires skillful labors, the investment return on education sector decreases due to the increasing supply of the educated labors and decreasing supply on uneducated-labors. Therefore, basically, the result of this research is consistent with the inverted-U hypothesis as the development process in Eastern Region of Indonesia also follows the development stage as reflected on the inverted-U figure.

This finding is also in accordance with Ardani's finding (1996, 1992; in Kuncoro, 2003) which analyzed the

economic growth and regional inequality in Indonesia by using Williamson's Index during 1968 – 1983 and 1983 – 1993. The conclusion supports Williamson's hypothesis (1965) which refers to Kuznets' hypothesis which mentions that during the initial stage of economic development, it occurs disparities among several regions; yet, as the economic development gets more and more advanced, the inequality will get narrower and narrower. Furthermore, the study conducted by Sutarno and Kuncoro (2007) in Banyumas Regency during 1993-2000 using Williamson's Index resembles Inverted-U of Kuznets' hypothesis. The study finds that during initial stage, the inequality gets worst; however, for the next stages, the inequality decreases and in particular time, there occurs another inequality which in turn will reduce again.

5.3. Population Growth and Regional Inequality

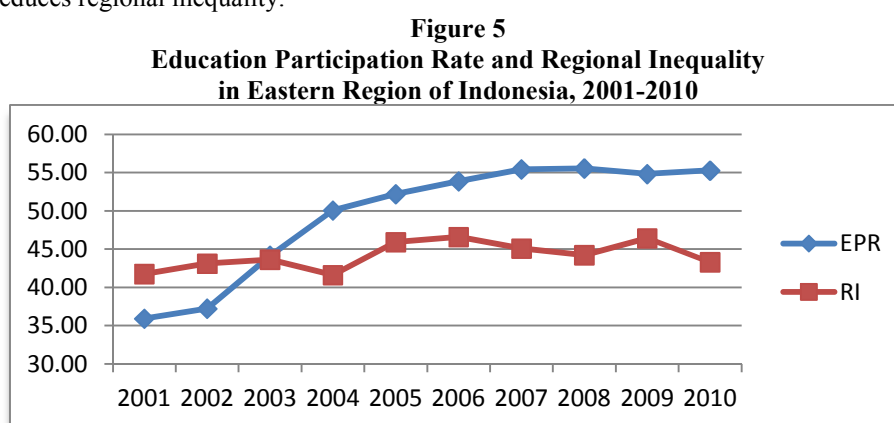
The result confirms that population growth has negative effect toward regional inequality. It is proven by the coefficient of population growth which shows negative 0.0086870. The coefficient implies that when the population decreases, it will improve regional inequality for 0.0086870 or 0.01 percent. On the other hand, if the population increases, it reduces the inequality.

The number of population in the Eastern Region of Indonesia until 2010 is 35,550,800 million. Compared to the land area of 14,000 km², Eastern Region of Indonesia is categorized in to a region which has relatively small number of population; therefore, it affects the advancement or the development of regional economic that cause inter-regions inequality.

This research result has proven that population growth has negative relationship with regional inequality. However, this conclusion cannot be taken as the basic consideration since in the test of significance, the relationship is not significant at 5% of α . Population, other than its quantity, is also perceived more from its quality related to the education level or skill. This causes non significant relationship.

5.4. Education Participation and Regional Inequality

The research result confirms that education participation has positive effect that is able to improve regional inequality. It is verified by the coefficient of education participation which shows positive 0.001903 and significant at $\alpha=1\%$. The coefficient of education participation implies that when the education participation increases, it will cause on the regional inequality improvement. On the other hand, if the education participation decreases, it reduces regional inequality.



Source: Indonesia Statistic, 2001-2010

Figure 5 presents positive relationship between education participation and regional inequality. It means that as the education participation is higher, it results in higher regional inequality. Nevertheless, the relationship between the two variables can be negative, since at particular period, the education participation is able to reduce regional inequality (for instance, in 2004 until 2010) that is indicated from the distance between education participation's graph gets wider from the regional inequality's graph. It means that in particular period of time, with the possessed education level, it can reduce regional inequality in Eastern Region of Indonesia. This condition highly depends on the local or provincial government's policy.

5.5. Open-Unemployment and Regional Inequality

The result of this research confirms that unemployment rate has negative effect on the development implementation since it can cause regional inequality. It is showed by the coefficient of unemployment rate which is -0.00471 . This coefficient implies that when the open-unemployment rate decreases, it will be followed by regional inequality reduction for 0.00471 or 0.005 percent.

The value of open-unemployment's coefficient which shows -0.005 percent is relatively low. It indicates that unemployment problem is not the main factor that can make worst economic condition in Eastern Region of Indonesia because it does not break the tolerable limit defined by the local government. However, the government should monitor and control the rate of the open-unemployment because it can be the source of severe fault on the

development to be worst in the Eastern Region of Indonesia. This is also confirmed by its probability level which is not significant at $\alpha = 5\%$.

5.6. Investment Rate and Regional Inequality

Based on research result related to the relationship between investment rate and regional inequality, it shows that investment rate negatively affects regional inequality. This finding is confirmed by the coefficient of investment rate which is -0.139412 and significant at probability level of $\alpha=1\%$. The value implies that when the investment rate decreases, it improves regional inequality for 0.1393412 or 0.14 percent. On the contrary, if the investment rate increases, it reduces regional inequality as much as the coefficient value.

Though the relationship between the two variables is negative significant, its role in regional inequality reduction is relatively low just like displayed in its coefficient. Low investment rate is affected by several factors. The first is interest rate; interest rate is an important factor that can stimulate investment since most of investment is financed through bank loan. If the interest rate is high, it reduces investor's intention to borrow capital from bank. The second is the low income per capita as the reflection of the society's purchase power. The third is the condition of facilities and infrastructures that provide less support on investment activities. Fourth, the bureaucracy of approval system burdens the investor since it is too long and complicated. Fifth, the low human resource in accessing technology development related to investment matters and interests. The sixth is unstable political and security condition that much affect the investor in making investment decision.

6. Conclusion and Suggestion

6.1. Conclusion

Based on the research result, it concludes that:

1. Fiscal decentralization is not able to reduce regional inequality in Eastern Region of Indonesia due to the allocation of local government's budget mostly is not dedicated to public service matters but for governmental matters such as: salary, official travel, and office appliances/supplies.
2. Related to the utilization of control variable: first, population growth and open-unemployment rate does have an effect on improving regional inequality; second, economic growth, education participation, and investment rate are able to reduce regional inequality.
3. The occurrence of economic pattern's change in Eastern Region of Indonesia from traditional pattern to modern pattern is reflected on the Kuznets' Inverted-U hypothesis confirmation.
4. Fiscal decentralization policy has run in about ten years; however, the effort to achieve independent local government is not yet on the expected target.

6.2. Suggestion

1. It needs efficient local budget and income management that meet good governance values. It means that budget allocation intended to finance local development activities should consider priority scale which truly has implication on the refinement and improvement of society's wealth.
2. To encourage economic growth and reduce regional inequality, government needs to promote development acceleration in strategic regions which have potential to develop in advance by arranging partnership opportunity with private sectors to that it will be able to develop the disadvantaged regions.

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