



Graduate School of Development Studies

**REGIONAL INEQUALITY IN INDONESIA:  
Is the general allocation fund (DAU) likely to have an  
impact?**

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## List of Acronyms

BPS = Badan Pusat Statistik – Statistics Indonesia  
DAU = Dana Alokasi Umum – General Allocation Fund  
DAK = Dana Alokasi Khusus – Specific Allocation Fund  
UUD = Undang-Undang Dasar – Constitution  
GRDP = Gross Regional Domestic Product  
BA = Basic Allocation  
FG = Fiscal Gap  
FN = Fiscal Need  
FC = Fiscal Capacity  
PI = Population Index  
ASI = Area Size Index  
HDI = Human Development Index  
CCI = Construksi Cost index  
GRDPCAPI = GRDP per Kapita Index  
FC = Fiscal Capacity  
ROR = Regional Own Revenue  
RSTax = Revenue Sharing Fund of Tax  
RSNr = Revenue Sharing Fund of Natural Resources

## **Abstract**

More than six years Indonesia has implemented the new fiscal decentralization policies. It substantiated one reform following the 1997 Asian economic crisis which had brought Soeharto era down. Changing the structure of the Indonesian government, the new decentralization scheme has transformed the central – local government relationship in a great extent. For Indonesia which has many islands and multi culture, Decentralization will give benefit to economic development. Decentralization makes the decision maker closer to the problem, hence, the solution will be more effective, efficient and accurate because the decision maker, in this term is local governments, are assumed to be more understand their region and the main problem in their authority rather than the central government.

Using descriptive - empirical analysis, this paper tries to examine whether DAU is related to the income inequality, and more specifically whether DAU has an affect toward the inequality.

Shown by the results which have been presented previously, there is an indication that DAU has an impact on inequality. There are three kinds of impacts. First, increasing DAU is followed by decreasing inequality. This condition happened in national level, Sumatera, and Jawa-Bali regions. Secondly, increasing DAU is followed by increasing Inequality. This occurs in Kalimantan and Sulawesi regions. Finally, increasing DAU is followed by fluctuate patterns of inequality. This also happens to others.

## **Relevance to Development Studies**

Oates (1993), Martinesz and Macnab (2003) believe that there are positive relationship between fiscal decentralization and economic growth. They argue, under an assumption that the local governments know their region's characteristics well; their expenditure on infrastructure and social sector will effectively support the economic growth of a region which will ultimately increase the national economic growth as a whole. On the other hand the increase of income inequality will hinder the growth effect on poverty reduction. Based on this, the trend of income inequality can be used as one of indicator to see whether one policy gives a great deal of impacts for the poor.

## **Keywords**

Indonesia, Fiscal Decentralization, DAU (General Allocation Fund), Theil Index Inequality measurement.

## Chapter 1

### Introduction

Since 2001 using Law No. 22/1999 on Local Government and the Law No. 25/1999 on Fiscal Balance between central and local government which were recently revised then by Law No. 32/2004 and Law No. 33/2004, Indonesia government has applied Fiscal Decentralization Policy. It substantiates the reform following the 1997 Asian economic crisis which brought Soeharto era replaced. Changing the structure of the Indonesian Government, the new decentralization scheme has transformed the central – local government relationship in a great extent.

Before decentralization reform, people living out side the Java-Bali region felt that the central government was focused on Java-Bali region rather than on others. Public facilities and infrastructure developments in Java-Bali are better and more complete comparing with the other regions.

**Table 1**  
**Distribution of Area, Population, and Income Per capita by Regions**

Regions	Area (%)	GRDP per capita 2000 (Rupiah)	Population (%)			
			1930	1980	1990	2000
Sumatera	24.7	7 105 924	13.5	19.0	20.3	20.7
Java - Bali	6.9	6 567 375	68.7	61.9	60.0	59.1
Kalimantan	28.1	11 493 208	3.6	4.5	5.1	5.5
Sulawesi	9.9	3 845 392	6.9	7.1	7.0	7.3
Others	30.4	3 932 968	7.3	7.5	7.6	7.4
Indonesia	100	6 751 603	100	100	100	100

Source: (Bps 2001)

Table 1 shows that since long time ago, Java-Bali region has become the centre attracting many people to come and migrate in. These data show that the Java-Bali region area is only 6.9% of Indonesian area but more than 50% of population live in the Java-Bali region. The differences among regions are not only on the percentage population and area but also on the distribution of GRDP per capita among regions in 2000. The distribution of GRDP per capita can give general view about the distribution of income per capita. This distribution is also known as an income inequality. That is based on the distribution of GRDP per capita, it may give general indication on the inequality problem in Indonesia. Kalimantan region, the second biggest area and the smallest percentage population, was the highest GRDP per capita in 2000. Other regions, the biggest percentage area, were having only around a half of Java-Bali GRDP per capita in 2000. The decentralization policy is expected to reduce the differences among region and give better public services to the citizen.



These policies which are conducted by Law No. 22/1999 and Law No. 25/1999 then revised by Law No. 32/2004 and Law No. 33/2004 are known as the regional autonomy policy. The main purpose of the regional autonomy policy is delegating managerial power from central to local government and then increasing an operational efficiency on the national allocation and the regional government, improving the overall fiscal structure, increasing transparency, expanding constituent participation in decision making at the regional level, assuring the delivery of basic public services to the citizen, and supporting macro-economic stability.

In that policy, a great deal of central government authorities was delegated to local governments, excluding foreign policies, national defence, laws, monetary policies, religion<sup>1</sup>, and also authorities of other area such as the National Development Planning, the National Standardization, and conservations<sup>2</sup>. Indonesian central government uses three kinds of financial instruments such as Dana Bagi Hasil (the Revenue Sharing Found), Dana Alokasi Umum/DAU (the general allocation fund), and Dana Alokasi Khusus (the specific allocation fund). The biggest part of fiscal decentralization instruments is DAU, for which local government have complete discretion to spend according their perceived needs. Besides, DAU purpose as the solver of horizontal imbalance problem. The type of fiscal transfers which use equalization system is effective to address regional disparity issues (Ma 1997). Remaining Indonesian geographic condition such as many differences of islands, resources, and cultures that naturally created differences on economic conditions among regions<sup>3</sup>, provinces and districts<sup>4</sup>, those policies might give the positive impact for Indonesia. The local governments which have more authority can solve their problems using their own perspectives because the local government is assumed much knowing about their regions rather than the central government.

Using all those authorities and fiscal decentralization instruments, the local government is expected to increase regions' economic activities. In economic terms, increasing government spending will give direct effect on increasing GDP and indirectly effect on other sectors' economic activities. In developing countries, the government becomes one of main actors in the economic activities. Oates (1993) argue that a fiscal decentralization system where the local governments have more authorities in public-services provision leads to more rapid economic growth. Fiscal decentralization which accompany with delegating authority from central government to local government will improve efficiency in the public sector, increase competition in delivering public services among local governments, and stimulate economic growth (Bahl and Linn 1992).

Increasing economic activities not always give effects on changing in inequality. Here, inequality relates to income distribution among group. According to Dalton principle<sup>5</sup>, inequality will decrease if poorer group get more incomes than the other group. In other words economic activities will give effects on reducing inequality if those activities are pro poor.

Based on the explanation about regional disparities and the fiscal decentralization, the author has come up with the question how the patterns of income inequality in Indonesia during the implementation of 2001 fiscal

decentralization policy and how the relationship between DAU as equalizer of horizontal imbalance and the inequality.

Using descriptive - empirical analysis, this paper tries to examine whether DAU are related with the income inequality, and more specifically whether DAU has affected the inequality.

This paper is structured as following; chapter one consists of the introduction of the study. Inequality is explained in chapter two. Chapter three focuses on the fiscal decentralization policy and DAU. Chapter four gives descriptive – empirical analysis of the DAU and Inequality, and the last chapter consists of summary and conclusion and policy implications.

## Chapter 2

### Regional Inequality

#### 2.1 What is inequality?

Inequality relates to distributional of income and not to level of income. Inequality is a relative concept whereas inequality measures are about relative wealth such as how certain members of a society are doing with respect to others. Inequality measures the disparity between a percentage of population and the percentage of resources (such as income) which are received by that population. Accordingly inequality will increase if the disparity increases. The illustration is: if a single person holds all of a given resource, inequality is considered to be at the maximum level and it will be at the minimum level if all people hold the same percentage of a resource.

Measuring changes in inequality helps to determine the effectiveness of policies and to generate the data necessary to use inequality as an explanatory variable in policy analysis. Inequality will become an important matter if the level is too high, since it will become one factor that can cause the social unrest, especially in the countries with stronger economic growth and lower poverty rate (Booth 2000).

The definition of inequality is defined as an unequal distribution of incomes and the economic inequality among the participants in a particular economy, such as a specific country or of the world in general (Milanovic 2005b). Milanovic promoted the concept of global inequality. According to him, the global inequality is the unequal income distribution among all citizens of the world, within countries, among countries, and among wage earners. There are three concepts of global inequality, which are:

- Concept 1; Unweighted International Inequality
  - Using a country as a unit of observation based on income per capita data regardless the number of population.
  - Unweighted refers to the assumption that each country is treated the same.
  - It does not take into account the inequality among citizens within a country.
- Concept 2; Population Weighted International Inequality
  - Using a country as a unit of observation based on income per capita and the number of population.
  - The income distribution among citizens within a country is assumed perfectly equal.
- Concept 3; Inequality Across Individuals in The World
  - Using an individual as a unit of observation based on one's income.
  - It is impractical because we cannot array all individuals in the world, but we use household surveys using Worldwide Random Sample as a better approach.

In this paper, regional inequality is assumed as an inequality among certain areas such as national, regions, provinces, and districts in same level hierarchy. In this case, regional inequality does not use household income as a base unit to approximate regional income, instead, GRDP is used to calculate the inequality where this inequality can decompose into between-group and within-group components such as between regions and the within region, between provinces and the within province, as well as between districts and the within district.

## 2.2 Inequality Measurement

There are four principles that must be full filled by inequality measurements (Ray 1998);

- anonymity principle  
In this principle, permutation of income among members of the population does not make any sense in inequality judgment. The important thing is we can rank from the poorest to the richest
- population principles  
According to this principle, the population size does not important. The essential thing in inequality measurement is the proportions of the population that earn different levels of income.
- relative income principle  
In the inequality measurement, the important factor is not an absolute value of income, but it is the relative value of incomes that matters. If we double the income of each member of the population, the inequality will be unchanged..
- Dalton principle  
Based on this principle, a regressive transfer, taking from the “not richer” and giving to the “not poorer”, gives effect on the increase of inequality. In other words, if a new distribution of income can be achieved from another one via regressive transfer, then the new distribution is more unequal.

This paper does not only take a look at inequality in general but also sees inequality between and within units. The decomposition of inequality can be done while the population of income earners can be divided into a certain number of subgroups then the inequality for the total population can be decomposed as a sum of the inequality measures within its subgroup weighted by coefficient on their aggregate characteristics and of the inequality between subgroups. Using these decomposition can give the information about the source of inequality whether inequality between units is as a main source for inequality or inequality within unit.

Not all the inequality measurement eligible to decompose into between and within (Bourguignon 1979). The result of bourguignon investigation<sup>6</sup> on inequality measurement can be seen in the table below

**Table 2**  
**Aggregativity, Decomposability and Some Other Properties of Current Inequality Measures**

Inequality measure	Aggregativity	Additive decomposability	Income-zero-homogeneity	Pigou-Dalton condition
Relative maximum range	No	No	Yes	(No) <sup>b</sup>
Relative mean deviation	No	No	Yes	(No) <sup>b</sup>
Variance	Yes	Yes	No	Yes
Coefficient of Variation	Yes	No	Yes	Yes
Square of the coefficient of variation	Yes	Yes	Yes	Yes
Variance of logarithms	No	No	Yes	No
Gini coefficient	No	No	Yes	Yes
Elteto-Frgyes indices	No	No	Yes	(No) <sup>b</sup>
Quantiles means income ratios	Yes	No	Yes	(No) <sup>b</sup>
Rawls' criterion	Yes	No	Yes	(No) <sup>b</sup>
Theil's entropy coefficient (T)	Yes	Yes	Yes	Yes
Mean logarithmic deviation (L)	Yes	Yes	Yes	Yes
Atkinson's measure	Yes	No	Yes	Yes
Dalton's measures	Yes	(No) <sup>a</sup>	(No) <sup>a</sup>	Yes

<sup>a</sup> Except with power functions for individuals utilities

<sup>b</sup> In the strong sense of condition

Source: (Bourguignon 1979)

The main results from table 2 are:

- Base on the all inequality measures above, only variance, square of the coefficient of variation, theil's entropy coefficient, and mean logarithmic deviation are fulfilled on aggregative and additive decomposability assumption.
- Only Theil's entropy coefficient and mean logarithmic deviation fulfil all assumption such as aggregative, additive decomposability, incomes zero homogeneity, and pigou-dalton condition.

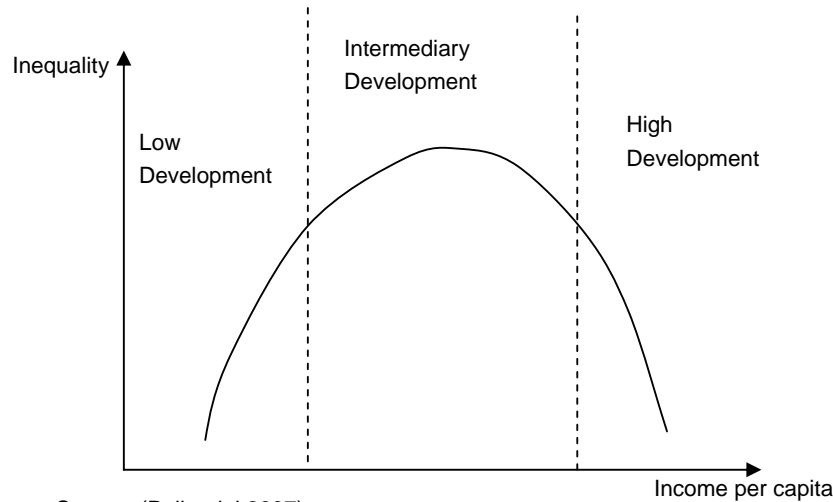
The other research also give result that support what bourguignon's got. Cowell (1980) state that the entropy measures which is proposed by Theil in 1967 interestingly to note that Theil measurement satisfying assumptions such as additive, mean-independence, decomposability, symmetry in term of property of intergroup impartiality, and aggregation consistency. Other support results come from Anand (1983). Based on his investigation, the gini coefficient can not be used in decomposition form, the theil indeks is more appropriate to use in decomposition of inequality.

## 2.3 Several Issue Related to Inequality

### 2.3.1 Growth – Inequality

The famous relation about growth and inequality is Kuznet's hypothesis (1955) or some literatures called by inverted-U hypothesis. Kuznet argues that in the beginning steps of development, the increasing growth will be followed by the increasing inequality. It usually happens in developing countries. In the further steps of development, the increasing growth will be followed by the decreasing in inequality. It is usually happening in developed countries.

**Figure 1**  
**Kuznet Curve**



Source: (Pellegrini 2007)

The Next findings from several researchers such as Ravallion and Chen (1997), Ravallion (2001), Dollar and Kraay (2002), Adam Jr (2004) tend to reject kuznets hypothesis. One of them, Adams Jr (2004), argues that in order to find out how the growth affects on inequality should use time series data that show the changing inequality within countries as they grow over time, (it is unlike Kuznet has figure out). The Kuznets hypothesis came up from cross-sectional data which was collected from different various countries at the same point in time. Adams in his researched found that the variation of relation between inequality and growth depend on the type of growth measurement and there are tendency to be no particular relationship between economic growth and inequality. Furthermore he did not find enough evidence to prove that the increasing growth will be followed by increasing inequality like what kuznet has declared in his hypothesis.

Ravallion (2005) argue that there are several reasons which caused a lack of correlation between growth and inequality. First, general inequality tend to be relatively constant, the changing inequality in horizontal term is more caused by policy to the increasing growth and trade policy which is caused by

demographic factor that give effect to trade position. Secondly, from literature study, Ravallion found that there are two kinds of inequalities: absolute and relative. Absolute inequality happens in the beginning of economic development (developing countries) as the increase of the average income tends to give higher disparities between the poor and the rich. In the relative term, it will give impact on the more non sensitive to the changing in absolute term of income. Thirdly, there are different methods in term of survey's technique, questioners, sample selection, etc which cause different result. For instance, the result from Lopez (2005) on several developing countries, he uses the comparison between house hold survey and the changing in gini index with panel technique and robust test using time lag 3. It gives the result that among the developing countries, inequality tends to fluctuate and there are negative relationship between the mean income (approximated by expenditure) of households survey and the gini index, while using growth rate that was approximated by national account, it give the result that there is no significant correlation between inequality and growth. However, although there is no correlation between inequality and growth, it does not mean that without taking care on inequality, one country can make a success of reducing poverty.

### ***2.3.2 Poverty – Inequality***

Almost all literatures and researchers found the indication of the relationship between poverty and inequality. Martin Ravallion in one of his paper mentions that high inequality tends to give negative impact on the effort of reducing poverty. By contrast, the low inequality tends to give poor people catch up the benefits of growth, thus the poverty tend to be more decreased rather than in high inequality circumstances (Ravallion 2005). Indonesia's experiences during 1970 – 1996 tend to give the same pattern with the Ravallions' assertion above. With a high growth, a Gini Index around 0.3 during that period, and on the average of the headcount index decreased around 5.98%<sup>7</sup> per year. In those periods, Indonesia was not only well known as one of the successful countries in southeast Asia but also as one of the newly industrializing economies in Southeast Asia (Hadi 2004).

### ***2.3.3 Growth – Inequality – Poverty***

The unique triangle, Growth – Inequality – Poverty, has become one of the interesting topics for the economic researchers. Bourguignon(2001) used the combination of non linear gdp per capita and characteristics of income distribution as what Kakwani and Ravallion had also done, found that the relation between growth and poverty can be achieved if the income distribution (inequality) is relatively constant. Those conditions give some effects that all level of society can get the growth of income. Because of that, it is important to know that the source of heterogeneity which effect on the changing of income distribution will lead to the impact of development which is concentrated on growth and poverty. The similar result can be found at dollar and kraay (2002). They found that increasing income inequality will hinder the growth effect on poverty reduction.

## 2.4 A brief Overview of World Inequality

In order to see an overview of world inequality, Milanovic (2005b) proposed three concepts. The result for the first concept-Unweighted International Inequality-, can be seen in the table 3 below.

**Table 3**  
**Transition Matrices 1960-78 and 1978-2000 (in percentages)**

	Rich	Contenders	Third World	Fourth World	Total
1960-78					
Rich	73	20	7	0	100
Contenders	14	32	36	18	100
Third World	0	5	59	36	100
Fourth World	0	0	0	100	100
1978-2000					
Rich	82	12	6	0	100
Contenders	13	6	69	13	100
Third World	3	6	28	64	100
Fourth World	0	0	5	95	100

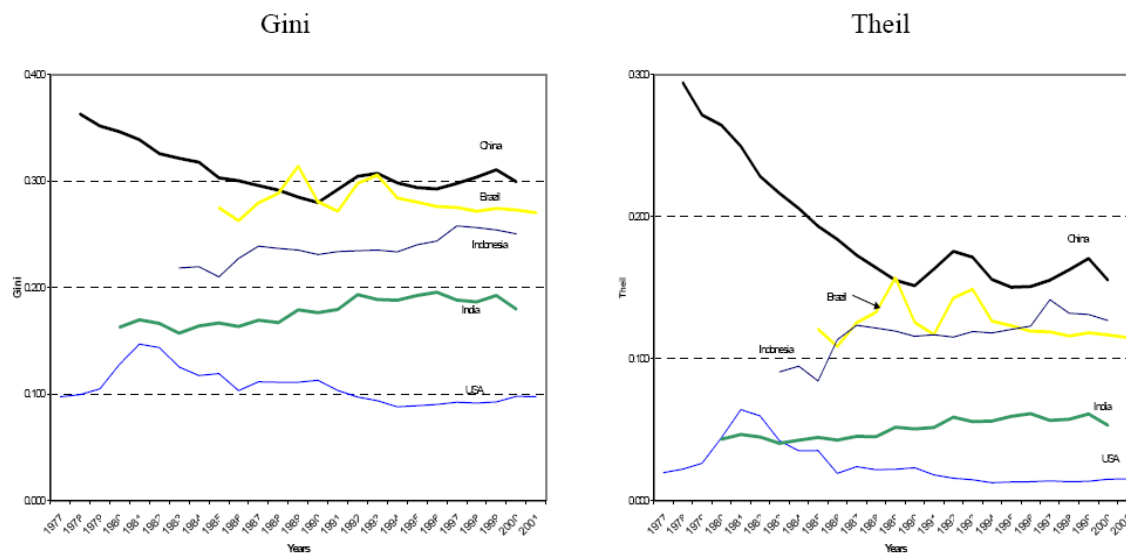
Source: (Milanovic 2005b)

From this table, in general, if one country falls into the fourth or the third world group then it is difficult for this country to move out from its group. In the period of 1960-78, 73% rich countries still stay in the rich countries group, 20% fall into contenders' country, and the rest (7%), became the third world countries. In this period, 54% of the contenders' countries fall into the third world and the fourth world countries group and only 14% are success to increase their level to became rich countries. There is only 5% of the third world countries which are success to become the contender countries group, while the rest of them (95%) are still in third world group or even falling into the fourth world group. All countries in the fourth world countries group are still resided in this group during this period. Furthermore, the above table showed that around 82% of the contender country group fall into the third and the fourth world during 1978-2000 period. Only 9% of the third country group can shift out from this group to be the rich and the contender group.

Using population weighted, Milanovic found that the global inequality tend to decrease. The downward trend is unchanged, even though by using different share population each year<sup>8</sup>. Milanovic argues that the decreasing in international inequality was contributed from the faster growth of India and China over rich countries. The weighted international inequality without China remains constant but it shows slightly increasing trend from the early 1980's onward and the weighted international inequality without China and India increases inequality started in the mid 1980's<sup>9</sup>. These facts support that any changing in populous countries<sup>10</sup> such as growth, income levels, and inequality within country gave highly influenced to global inequality (Milanovic 2005a).



**Figure 2**  
**Unweighted inter regional inequality in the five countries**



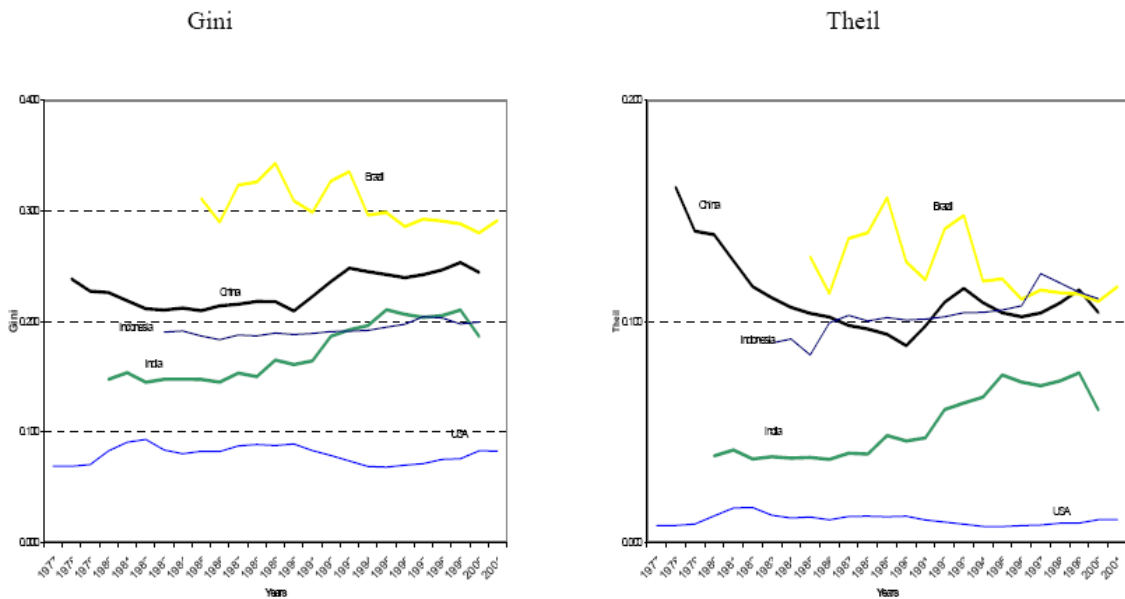
Note: Concept 1 inequality is calculated in nominal terms (except for Indonesia where we have real data only). GDP for Indonesia excludes oil and gas data.

Source : (Milanovic 2005a)

Using unweighted inequality (concept 1 in milanovic) for five countries (see figure 2), show the value of inequality which is calculated by using gini and theil index. The pattern of inequality in both measurement was relatively the same. China (The data from 1978 to 2001) was the highest inequality and then it was followed in row by Brazil (the data since 1985 until 2001), Indonesia (the data from 1983 to 2001), India ( the data from 1980 to 2001) and USA (the data since 1977 until 2001).

In Gini measurement, the figure shows that in 2000, China which has the biggest population (around 1,271 million) and the highest ratio between the richest and the poorest region has the decreasing trend Inequality. Using theil index, the pattern of Chinese inequality becomes more explicit than what gini's shows. The pattern of inequality in gini measurement and theil index measurement for Brazil which has 172 million population and USA which has 50 million population in 2000 was decreasing all over the time. Indonesia with its 213 million populations and India with its 1,033 million populations has increasing pattern.

**Figure 3**  
**Weighted inter regional inequality in the five countries**



Source : (Milanovic 2005a)

Using population weighted inequality (concept 2 in Milanovic) for five countries (see Figure 3), show the value of inequality which is calculated by using Gini and Theil index. The pattern of inequality in both of measurement was relatively the same. However, the result was slightly different to the result of unweighted inequality especially in rank of inequality. Brazil (the data since 1985 until 2001) which has 172 million populations in 2000 has the highest inequality. The next was China and then followed by Indonesia, India, and USA. The cases of India and Indonesia have shown the increasing trend in Gini measurement and Theil index measurement. While, USA tends to be relatively stable and still has the lowest inequality compared to other countries (China, Brazil, Indonesia, and India). In the mean time, China and Brazil gave unclear pattern.

## 2.5 Inequality and Institutions

In this relationship, based on the cross-country data, Chong and Gradstein (2004) stated that countries which have poor institutions tend to have high inequality. Furthermore they propose two propositions about relationship between inequality and institutions. “...Proposition 1. Next-period income decreases with inequality, and more so when institutional quality is low. Low institutional quality not only reduces next-period average income, but also leads to higher inequality in its distribution. Proposition 2, Income inequality and low institutional quality reinforce each other along the transition path, slowing average income growth. As a result, multiple equilibria could be realized, depending on initial conditions: with low quality of institutions, high

inequality, and low average income; and with high institutional quality and high income (Chong and Gradstein 2004) “.

For Indonesia, Fiscal decentralization policy substantiates one reform following the 1997 Asian economic crisis which brought Soeharto era down. Changing the structure of the Indonesian government, the new decentralization scheme has transformed the central – local government relationship in a great extent. Using this policy, Indonesian citizen hope that the government' performance will be better than previous.

Decentralization makes the decision maker closer to the problem. It is due to the solution will be more effective, efficient and accurate because the decision maker, in this term is local governments, are assumed to be more understand their region and the main problem in their authority compared to the central government.

## Chapter 3

### Fiscal Decentralization

#### 3.1 Decentralization

In general, the definition of decentralization is delegating authority from central to local government. (Bird 1993) argues that the decentralization has many meanings depending on the user of decentralization. The different ways in implementing decentralization in each countries depend on the countries characteristics (Osoro 2003).

Furthermore Osoro argues that there are at least five factors which influence the process of decentralization. Those factors are the fiscal ability and authority of local government in order to manage and provide the public services, clear information about expenditure and revenue in order to catch up the high citizen participation, the clearly mechanism for citizen to express their need to local government and politician, transparency in public accountability in order to give easier ways for citizen to control the local government performance, clear role of game in the intergovernmental transfer and the fiscal structure from central to local government. Practically, the different types in each country make decentralization is difficult to implement, for example in general, the characteristics of USA citizen who are easy to express their opinion or their needs to government is very different to the characteristic of the people in East Asia. Generally, The East Asian people tend to be very careful in expressing their opinion or their needs to their government. Although the globalization effect the much easier access to the information and interaction between countries pushes the changing of countries characteristic, the typical of citizen is not easy to be changed. This factor causes that each countries have their own structure and form of decentralization.

For Indonesia which has many islands and multi cultures, Decentralization will give benefit to the economic development. Decentralization makes the decision maker closer to the problem. The solution will be more effective, efficient and accurate because the decision maker, in this term is local governments, are assumed to be more understand their region and the main problem in their authority rather than the central government. The benefit that I mention is supported by the previous researchers which dissected the decentralization system. Tiebout(1956), Oates(1993), Weingast(1995), Litvack and Seddon (1998) argue that the lowest government hierarchal<sup>11</sup> which have geographical control can provide the most efficient public services. There are some reasons for this. First, the local governments know very well about their citizen especially on what their citizen' needs and priorities. Second, any decision of the local governments should address the citizens need, in this relation, the citizens also need to push their local government to make the efficient expenditure. Third, decentralization will create the positive competition between local governments in order to give the best public services for their citizens.

Decentralization does not only have positive impact as I mention above but also the negative ones. Some researchers found that decentralization system tend to create corruption, collusion, and instability in macroeconomic. In Mello and Barenstein (2001) give some conclusions about negative impact of decentralization based on their study about decentralization in some countries. First, they found that Decentralization has a tendency to increase the level of corruption in the region, which is indicated by the various practices of bribery. Second, the local governments tend to overspend in their expenditure. Third, the local government tend to lack of ability in term of increasing their tax revenue.

According to Dethier (2000), decentralization could generate some concerns. At the outset, it can deteriorate political temperature among regions, especially for those which have too strong differences in the revenue capacity. Next, some issues related to tax assignment and expenditure may possibly grow. And finally, the issue of monitoring government expenditure is also able to rise, as decentralization system is more complicated than the centralization. Huther and Shah (1998) further assert that the risk from decentralization could be macro economic mismanagement, corruption and the broaden economic gap between the rich and the poor. Azfar et al. (1999) finally concludes that decentralization will widen regional disparity in the social expenditure if local governments are responsible for financial matter and distribution.

Considering the issues that have been mentioned previously, the Law No. 22/1999 and Law No. 25/1999 are ultimately revisited by Law No. 32/2004 and Law No. 33/2004. Based on the latest laws, Indonesia has two types of decentralization -political and fiscal decentralization- which are implemented in almost the same time. Besides arranging clearer pattern of the relation between central and local governments, the implementation of political decentralization is indicated by the democratic election of the head of local government and the local parliament representative. The aim of political decentralization is giving the citizen and their representative more power in term of public decision making. It gives the citizens the chance to control their government so the local government can be more effective and efficient in delivering public services.

### **3.2 Brief Overview the Sequences of Decentralization in Indonesia**

According to Falleti (2005), there are three types of decentralization: Administrative decentralization, Fiscal decentralization, and Political decentralization. The first one refers to the transfer administration and delivery of social services such as education, health, social welfare to sub national governments. The second one, fiscal decentralization, refers to devolution of authorities which is designed to increase the revenues or fiscal autonomy of sub national governments. In this case, sub national governments have more tax authority that was previously managed and controlled by national authority. The last one, political decentralization is designed to devolve political authority or electoral capacities to sub national actors. Usually, there are sequences in implementing one type of decentralization to the others.. Nevertheless, in

Indonesia, political and fiscal decentralization were implemented almost at the same time, after the changing of Soeharto's rezim to the reformation's rezim.

Since the independence of Indonesia in 1945, Indonesia has implemented some types of decentralization. Base on the law that produced by Government of Indonesia, there were several periods of Indonesia's decentralization type (Kuncoro 2004). First, law no. 1/1945, this law managed the creation of new local government as a reflection of the central government which its main authority was to nationalize and register any firms in their region. The relationship between central and local government was unclear. The cost of local governments' expenditure was handled by themselves. There was no fiscal transfer from central to local government yet. The local governments had power to create any rules in order to maintenance their expenditure. The Indonesian situation at that period of time was focused on the defence of national independent.

Second, law 22/1948, this law managed the delegation of central government authority to local governments. The local governments will get more authority in order to maintain their regions. The kind of authority which were delegated and the type of relationship between central and local government were still unclear. Since Indonesian situation was still on the war to defence for independence, this law was not success to be implemented.

Third, law 1/1957, this law was focused on implementing the widening of regional autonomy as had been mentioned on the Provisional Constitution of 1950 article 131<sup>12</sup>. In this matter, the local government especially the ones out of Java-Bali were disappointed with central government policy in financial and economics system, due to there were no explicit assertions on the role of financial and economic system.

During that period above until July 1959, Indonesia had implemented de facto federalism. This indicated the weakness of central government authority over the local governments which also caused the decrease of effectiveness on central government authority. All of the existing problems were worst by some internal conflicts within the state as well as the on going war for independence..

Fourth, based on a decree which was issued by President Sukarno on July 5<sup>th</sup> 1959 to return to the 1945 Constitution, this policy was purposed to eliminate the conflict within state during implementation of the Provisional Constitution of 1950. Practically, Soekarno, the first president of Indonesia, based on government regulation no 6/1959 and law no. 18/1965 had implemented guided democracy system (in Indonesia was known as "demokrasi terpimpin era") which indicated by the decrease of the local government authority and the increase of the central government authority. Starting from this period, Government of Indonesia became more centralized than the previous period.

Fifth, based on law 5/1974, this law managed the local government authority and their relationship with the central government. Based on this law, Indonesia had implemented decentralization system but in practical, Soeharto, the second President of Indonesia, applied the centralized policy. It was supported by the law no 5/1974 which did not explicitly mention the local government authority in managing their financial and in development process,

local government highly depended on central government budget. The local government could not design their expenditure and revenue flexibly. Any changing in term of government expenditure and revenue such as allocation changes in local government expenditure must be reported to get agreement from central government.

Sixth, base on law No. 22/1999, law no 25/1999 and which further revisited by Law No. 32/2004 and law No. 33/2004. Using these revision laws (which are still used until now) Indonesia is started to be more decentralized than before and there are some corrections in the system of Soeharto's era. This law is addressed to response the local government dissatisfaction on the revenue distribution such as natural resources, tax, etc between central and local government. In this law, the relationship between central and local government is mentioned explicitly. Local governments get wider authority in order to manage their regions. The laws do not only give the authority in the political side such as the election of the head of local governments but also the flexibility in order to decide the local governments' expenditure which are more appropriate for their region. The laws explicitly mention about the role of intergovernmental transfer system between central and local government.

### **3.3 Fiscal Decentralization in Indonesia**

In Indonesia, fiscal decentralization is not only about delegation of authority on managing and creating taxes but also following the changing of intergovernmental transfer method that are more acceptable for region which have rich natural resources and without any left to poor natural resources. In Jun Ma (1997) there are basically two types of grants, conditional and unconditional.

First is Conditional grants. These are sometimes called specific purpose grants or categorical grants. The central government specifies the purposes for which the recipient government can use the funds. Such a grant is often used to address concerns that are highly important to the center but are considered less so by the subnational governments. Examples are projects with inter-regional spill-over effects, there are several types of conditional grants,;

- Matching Open-Ended Grants. For a unit of money given by the donor to support a particular activity, a certain sum must be expended by the recipient. For example, a grant might indicate that whenever a local government spends a dollar on education, the central government will contribute a dollar (or fifty cents) as well. With an open-ended matching grant, the cost to the donor ultimately depends upon the recipient's behavior. If the local government's expenditure is vigorously stimulated by the program, then the central government's contributions will be quite large and vice versa.
- Matching Closed-Ended Grants. To put a ceiling on the cost borne by the central government, the center may specify some maximum amount that it will contribute. This is called a closed-ended matching grant. This mechanism is used by most countries due to concerns of budget control. In some countries, the total sum of matching grants is limited by the government selection mechanism.

- Non-matching Grants. In this case, the central government offers a fixed sum of money with the stipulation that it be spent on a specified public good. The recipient government is not required to match the contribution of the central government.

Secondly is an unconditional grant. An unconditional grant places no restrictions on the use of funds. In effect, it is a lump sum grant to the recipient government. The main justification for the central government to give unconditional grants to states/provinces and localities is that such grants can be used to equalize fiscal capacities of different local governments to ensure the provision of a minimum (or reasonable) level of public services. In most countries, the equalization grants are transfers made from the central government to the subnational governments. In other countries, unconditional equalization grants take the form of a general revenue-sharing.

The grants' structure or intergovernmental transfer in Indonesia are based on fiscal decentralization policy 2001 as follow:

First is Revenue Sharing, This revenue sharing, according to the laws, is to address vertical fiscal imbalances between the centre and local governments. According to Widjaya (2002), out of all shared revenues – about 20 percent of total intergovernmental transfers in 2001 and 2002 – 23 percent went to provincial governments and 77 percent to districts/municipalities. Out of the total shared revenues, 44 percent came from oil and gas sector, 46 percent from land and building tax and transfer fee and 9 percent from mining, forestry and fishery sectors.

Second is General Allocation Fund (DAU), sharing of tax and natural resource revenues address the problem of vertical imbalances, but it creates a problem of horizontal imbalances as only those producing regions or regions with higher tax bases would receive a lot more shares than those poor regions in term of natural resources and tax bases. Because of this horizontal imbalance problem, the decentralisation laws mandate transfers of the General Allocation Fund or DAU to help regions with less revenue potentials to finance their new functions.

Third is Specific Purpose Grant (DAK), The Special Allocation Fund or DAK, according to Law 25/1999, can be used to finance special needs, including emergencies, and for financing central priorities in the regions. The law especially mentions the local shares of reforestation fund as DAK fund. And this reforestation fund served as the only DAK fund available in 2001 and 2002. And starting 2003, the central government has extended DAK grants to finance the maintenance of health and education facilities, roads and irrigation facilities, government property and finance the fishery sector. The government said in the notes to the 2004 State Budget that DAK funding would be prioritized to finance special needs of local governments with low fiscal capacity, regions in Aceh and Papua, and regions in the country's borders and remote areas.

Base on the characteristics, General Allocation Fund (DAU) has become the most important intergovernmental transfer in Indonesia. The DAU gives full authority to local government to spend the fund according to their own priorities. Therefore DAU in local government budget has become an



important part. In the most local government DAU takes place as the biggest part in local government revenue.

### **3.4 The DAU Allocation Mechanism**

Base on Law No. 22/1999 and Law No. 25/1999 then revised by Law No. 32/2004 and Law No. 33/2004, the DAU allocation mechanism is as following:

First, the total amount of DAU allocation is at least 26 % of net domestic revenue. Before 2005, based on law no. 25/1999, the total amount of DAU allocation is at least 25 %. And then the proportion of DAU between province and district distribution is based on the sharing of authorities between province and district. Before 2005, and based on law no 25/1999 the proportion of DAU between province and district is 90 % for district and 10% for province.

Second, The DAU for a region (province or district) is allocated based on fiscal gap and basic allocation. In other words, DAU is equal to fiscal gap plus basic allocation. The total amount of basic allocation is calculated based on the total salaries of the civil service in the region (province or district). Before 2005, the basic allocation is unknown. In that period, minimum allocation which was consisted of lumpsum and proportion of civil servant salary was used. Fiscal gap was defined as the difference between fiscal need and fiscal capacity (fiscal gap was equal to fiscal need minus fiscal capacity).

Third, Fiscal need is defined as the financing requirements of the region (district or province) in order to provide basic public services. Therefore, there are components which are used to measure the financial requirement: the total population which reflects the need for public services; area's size which reflect the need for infrastructure per area; construction cost index which reflects the level of geographical difficulty based on the level of relative cost of physical infrastructure; and gross domestic product per capita which reflects the potentials and activity of economic; as well as human development index which reflect the level of welfare achievement in education and health. Fiscal capacity is defined as financial sources in one region which consist of regional own revenue (PAD) and revenue sharing fund which consist of revenue sharing fund of Tax and revenue sharing fund of natural resources.

Fourth, the DAU for province or district which are based on fiscal gap is calculated based on the weight of the province or district multiplied by total DAU for all provinces or districts. The weight of province or district is equal to the ratio of the fiscal gap of province or district to total fiscal gap of all provinces or districts.

Fifth, Based on those calculation there are four possible outcomes; firstly if a region has positive fiscal gap (fiscal need greater than fiscal capacity) than this region will receive DAU in the amount of fiscal gap plus the basic allocation. Secondly, if a region has zero fiscal gap (fiscal need equal to fiscal capacity) than this region will receive DAU in the amount of the basic allocation. Thirdly, if a region has negative fiscal gap (fiscal need lower than fiscal capacity) and the absolute value of fiscal gap is lower than basic allocation, than this region will receive DAU in the amount of the basic allocation minus the absolute value of fiscal gap. Fourthly, if a region has

negative fiscal gap (fiscal need lower than fiscal capacity) and the absolute value of fiscal gap is equal to or greater than the basic allocation, than this region will not receive DAU.

Those mechanisms can be formulated in the equation model, which can be seen as follows::

$$DAU = BA + FG \dots\dots\dots (1)$$

$$FG = FN - FC \dots\dots\dots (2)$$

$$FN = AER(\alpha_1PI + \alpha_2ASI + \alpha_3HDI + \alpha_4CCI + \alpha_5GRDPCAPI) \dots\dots\dots(3)$$

$$FC = ROR + RSTax + RSNr \dots\dots\dots (4)$$

Where:

DAU = General Allocation Fund

BA = Basic Allocation

FG = Fiscal Gap

FN = Fiscal Need

FC = Fiscal Capacity

AER = Average of Expenditure Regional

$\alpha_i$  = weighted

PI = Population Index

ASI = Area Size Index

HDI = Human Development Index

CCI = Construksi Cost index

GRDPCAPI = GRDP per Kapita Index

FC = Fiscal Capacity

ROR = Regional Own Revenue

RSTax = Revenue Sharing Fund of Tax

RSNr = Revenue Sharing Fund of Natural Resources

There is a political agreement that since 2001 until 2007, Indonesian fiscal decentralization used the hold harmless principle. This Principle stated that the total allocation for one district can not be less than previous year allocation. The effects of this principle will constraint the function of DAU as the solver of horizontal imbalance problem on fiscal capacity. That is why the DAU had always an increasing trend during 2001-2006 periods. Based on article 107 law no 33/2004 starting at 2008, the hold harmless principle is not being used; subsequently, the function of DAU will be more effective and useful than the previous years.

## Chapter 4

### DAU and Inequality of Indonesia 2001 – 2006

#### 4.1 Data and Methodology

The function of DAU (General Allocation Fund) in Indonesian fiscal decentralization policy is balancing instrument on horizontal and vertical imbalance as mention in law no. 22/1999, law no 25/1999 and there are revisited by Law No. 32/2004 and law No. 33/2004. Using data period since 2001 until 2006, this chapter focuses on elaborate the pattern of inequality and DAU. I assumed that province data as summation of all districts within province. One of the implications of Indonesian fiscal decentralization system is most authority are delegated to districts as the lowest hierarchal of Indonesian government system; that is why I use the district level as a base observation unit. There is one exceptional policy given to DKI Jakarta (Special Capital Territory of Jakarta) as the province where the central government and capital of Indonesia take place. The intergovernmental transfer for DKI Jakarta, for example DAU, does not directly give to districts but it going through the province. Based on that reason, I decided to exclude the DKI Jakarta province in my calculation for analysis. In order to make DAU data more comparable and eliminating the difference value resulted from regions' variations at over time, the conversion DAU data from nominal to real is needed. For DAU data, I retrieved from the Ministry of Finance's website, <http://www.djapk.depkeu.go.id>, and for GRDP for each districts as basic data in inequality calculation I got from Gross Regional Domestic Product Regencies/Municipalities In Indonesia which is published by BPS in various series during 2000 – 2006.

Based on geographical characteristics, Indonesia can be decomposed into five regions such as Sumatera, Jawa\_Bali, Kalimantan, Sulawesi, and other<sup>13</sup>. Each region contains several provinces and each province contains several districts. Due to find out the clear pattern of inequality, I used the decomposition method on inequality. Some decomposition models that I used in this analysis are an inequality decomposition of between - within regions, between - within province cross regions, and between - within province in region during 2001 - 2006. For those kinds of decompositions, Theil index is the most appropriate of inequality measurement, because not all inequality measurements can be decomposed (see Chapter 2 for briefly overview on inequality measurement). The Theil Index counts both between and within regional inequalities and the equation can be seen as following:

$$T = \underbrace{\sum_i \left( \frac{y_{ij}}{Y} \right) \cdot T_i}_a + \underbrace{\sum_i \left( \frac{y_{ij}}{Y} \right) \log \left( \frac{y_{ij}/Y}{x_{ij}/X} \right)}_b \dots (5)$$

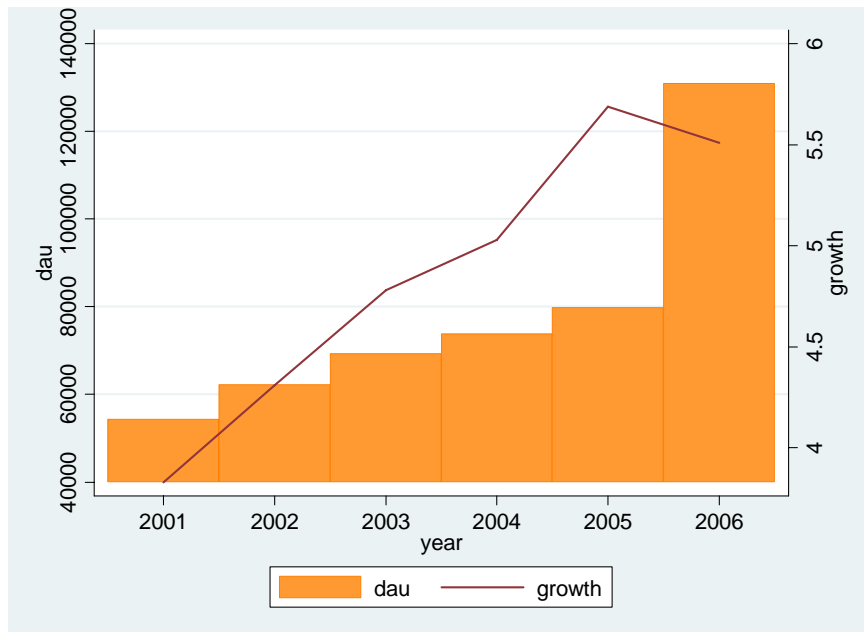
where  $y_{ij}$  and  $x_{ij}$  are respectively representing gdp of subgroup  $j$  at group  $i$ .  $Y$  and  $X$  are respectively representing total GDP and total population.  $a$  and  $b$  are respectively representing the theil index for within group  $i$  and between group  $i$ .

Following paragraph will explore the finding from those calculations on theil index and dau during 2001 until 2006 using STATA program.

## 4.2 General Finding and Analysis

DAU in Indonesia has become an important part of local government revenues. The character of DAU which is an unconditional grant and balancing fiscal capacity has made most of local government financing highly depend on DAU; particularly for the district which does not have abundant natural resources. This condition has created DAU as the main financial resources for most of local governments due to increase their economic developments. From the data since 2001 until 2006 the amount of DAU which is transferred from central to districts has the same pattern with national growth. Increasing of DAU is followed by increasing national growth which is showed in figure 4.

**Figure 4**  
**The Pattern of DAU and Growth 2001-2006**



Increasing growth along with increasing DAU gives an indication that the local government becomes more effective and efficient in managing their expenditures in order to increase their economic developments than the central government. Knowing regional characteristics is the important factor to decide sectoral expenditures which are very useful for citizens and to increase economic growth.

Some literatures showing the relationship between fiscal decentralization and economic growth are still debating. Oates (1993), Martinesz and Macnab (2003) believe that there are positive relationships on fiscal decentralization and economic growth. They argue, under an assumption that the local government has known their region characteristics well, its expenditure on infrastructure and social sector will effectively support the economic growth of a region which will ultimately increase the national economic growth as a whole. Zhang and Zou (2001) conclude that there is a positive effect of fiscal decentralization on economic growth in India and a negative effect in China. Davoodi and Zou (1998) also conclude that there are negative relationships between fiscal decentralization and growth in developing countries and positive relationships in developed countries.

**Table 4**  
**Theil Index Between and Within Region Decomposition 2001-2006**

<b>Theil Index</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Within	0.33744	0.29155	0.27595	0.29416	0.28841	0.29080
Between	0.00963	0.00996	0.01053	0.01379	0.01150	0.01488
Total	0.34707	0.30151	0.28648	0.30795	0.29991	0.30568

Source: own calculation

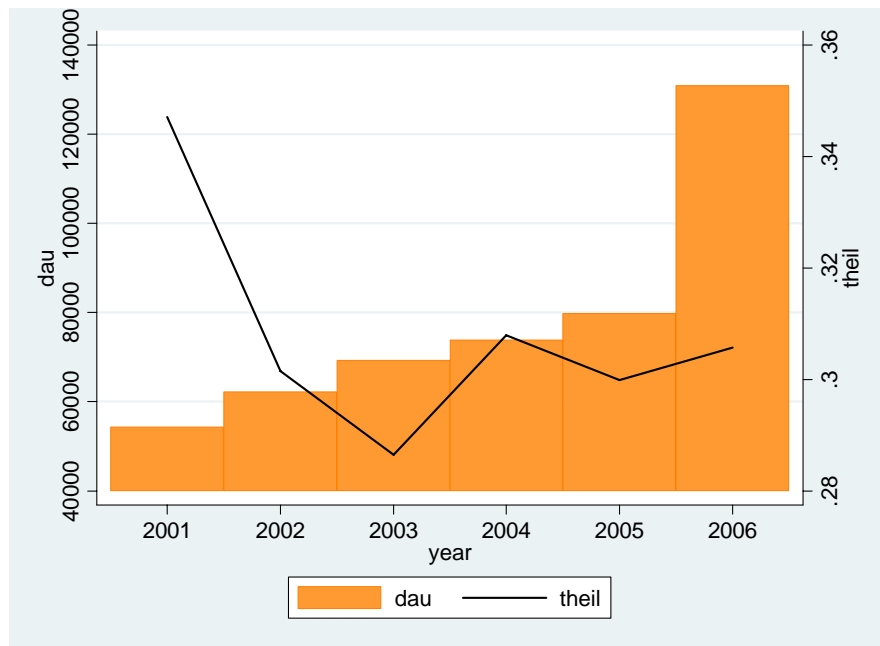
The inequality during 2001 until 2006 remains stable, not much fluctuation, with a decreasing trend (see table 4). The total Theil index inequality in 2001 was 0.34707 which 97.23% came from inequality within region. But this value in 2006, inequality slightly decreased becoming 0.30568 which 95.13% came from inequality within region. Inequality between regions gave an indication that generally disparities of income distribution between regions are low where the between region inequality is 0.01 at 2001 and 0.015 at 2006. During 2001-2006 periods around 95% of total inequality came from the inequality within region.

Figure 3 gives a general indication that the increasing pattern of DAU during 2001-2006 was followed by a decreasing trend of total inequality. But based on the annual movement of total inequality, during 2001-2003 total inequality tends to decrease and then the next period from 2003 to 2006 total inequalities indicated a tendency to increase although there is only a slight increase.

Those findings, shown by figure 4 and figure 5, indicate at the national level, DAU had a relation to economic growth and inequality. An increasing trend on DAU was also followed by an increasing trend on economic growth and

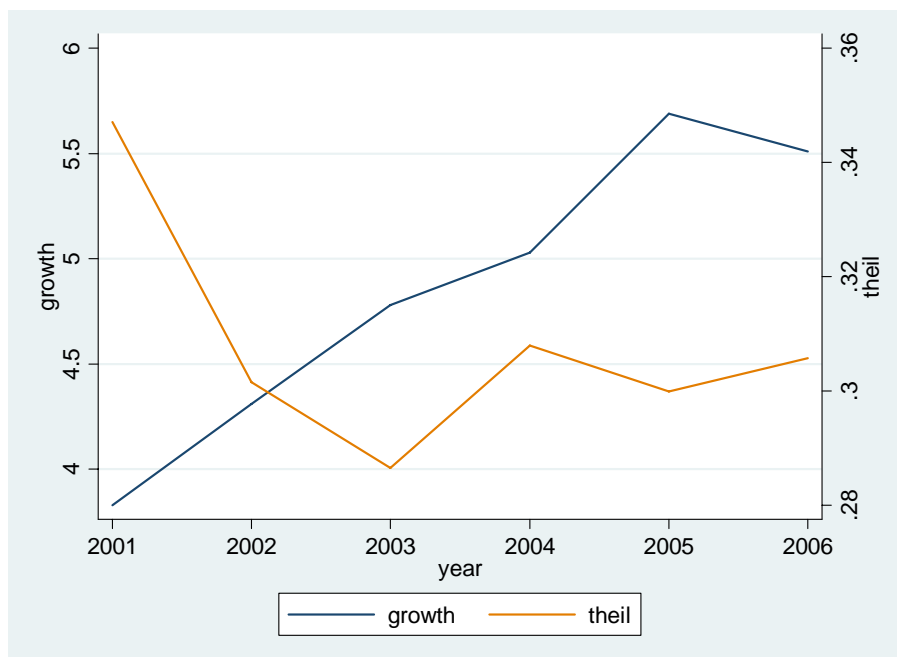
decreasing trend on total Theil index. Statistically, using the pair wise correlation test on DAU and GRDP or natural logarithmic of DAU and GRDP shows there is positive relationship between them and this relationship is significant at five percent level.

**Figure 5**  
**The Pattern of DAU and Theil Index 2001-2006**



In national level since 2001 until 2006, Figure 6 is giving general indication of negative relationship between growth and total Theil index. But base on annual movement; figure 4 is showing during 2001-2003 the trend of economic growth and inequality had opposite effect for each other; increasing trend of economic growth and decreasing trend of Theil index. These findings not in line with the Kuznet's hypothesis that in the beginning steps of development increasing growth will followed by increasing in inequality. It is usually happening in developing countries. In the further steps of development, increasing growth will followed by decreasing in inequality. It is usually happening in developed countries. For the rest periods of observations, 2003-2006, both of them generally inequality tends to increase over time. Based on that graph (Figure 6), since 2001 until 2003 the poor tends to enjoy the benefit of economic growth more than in 2003 until 2006.

**Figure 6**  
**The Pattern of Growth and Theil Index 2001-2006**



**Table 5**  
**Theil Index Between and Within Province Cross Region Decomposition 2001-2006**

Theil Index	2001	2002	2003	2004	2005	2006
Within	0.26474	0.23071	0.21851	0.24355	0.23342	0.23565
Between	0.08233	0.07080	0.06797	0.06439	0.06649	0.07006
Total	0.34707	0.30151	0.28648	0.30795	0.29991	0.30568

Source: own calculation

Inequality between and within provinces cross regions has similar pattern to inequality between and within regions (see table 5). The contribution of income inequality between provinces to total national inequality on year 2001 – 2006 is around 23%. The rest, around 77 % of national inequality, is contributed by inequality within province. The smaller values of inequality between provinces give an indication that the disparity of income distribution between provinces across regions has the same characteristics. The trend of inequality between provinces remains stable around 0.08 on 2001 and becoming 0.07 on 2006. The trend of Inequality within province across region tends to decline from 0.26 in 2001 to 0.236 in 2006. This declining trend in inequality can be indicated that during those periods the poor received more

benefit from economic developments than other groups with an assumption there is no dramatic changing in rich group.

The following tables and figures explore the decomposition of inequality between and within province in each region and the annual movement of DAU and total inequality in each region.

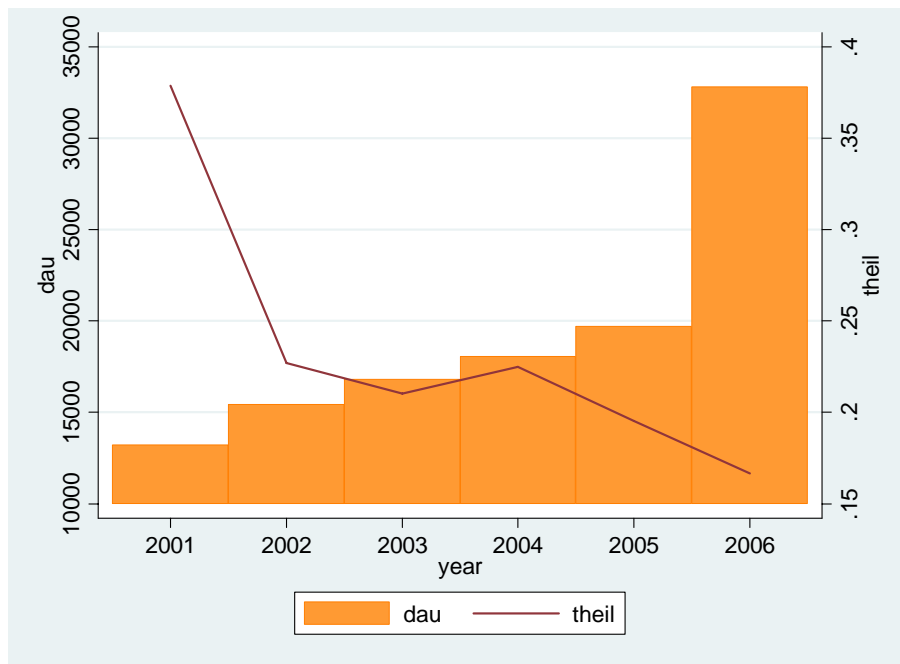
**Table 6**  
**Theil Index Between and Within Province on Sumatera Region 2001-2006**

Theil Index	2001	2002	2003	2004	2005	2006
Within	0.21739	0.12076	0.10978	0.13855	0.10677	0.07621
Between	0.16156	0.10648	0.10066	0.08659	0.08856	0.09038
Total	0.37895	0.22724	0.21044	0.22514	0.19534	0.16659

Source: own calculation

In the region of Sumatera (see table 6 and figure 7), the inequality trend has a propensity to decline, from 0.37895 in 2001 to 0.16659 in 2006, where the values between and within provinces relatively have similar percentage in the configuration of total inequality. These matters point to the condition that the income distribution pattern between provinces in Sumatera is diverge and the parallel condition also occurs within province in that region.

**Figure 7**  
**The Pattern of DAU and Theil Index in Sumatera Region 2001-2006**





From Figure 7, it can be seen that the common development of DAU in the year of 2001 and 2006 had increased for each year (increasing trend). Meanwhile the inequality in Sumatera region has revealed a decreasing trend in the same periods. This circumstance follows the pattern in the national level, i.e. the increasing trend in DAU and the decreasing trend in the inequality. This could be an indication that in that region, DAU, either directly or indirectly has affected the decrease of inequality. Decreasing trend in inequality could indicate that during those periods the poor in Sumatera region get more benefit of economic growth than others with an assumption there is no dramatic changing in the rich group.

**Table 7**  
**Theil Index Between and Within Province on Jawa-Bali Region 2001-2006**

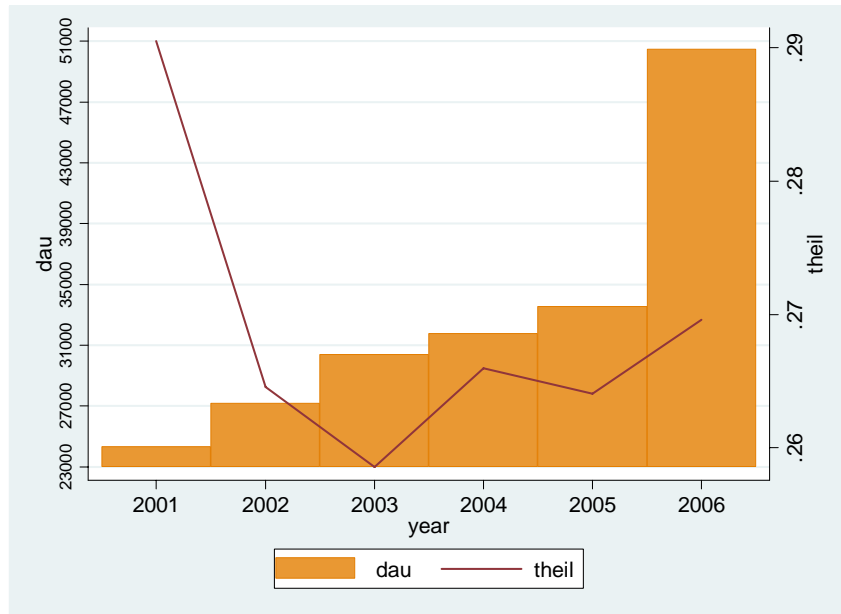
Theil Index	2001	2002	2003	2004	2005	2006
Within	0.27705	0.25275	0.24667	0.25275	0.25247	0.25707
Between	0.01344	0.01180	0.01191	0.01323	0.01159	0.01253
Total	0.29049	0.26455	0.25858	0.26598	0.26406	0.26960

*Source: own calculation*

Compared to Sumatera region, the inequality development from 2001 to 2006 for Java and Bali regions had a slightly different condition (see table 7 and figure 8). In that period, the inequality in those regions had a tendency to lessen from 0.29049 in 2001 to 0.25858 in 2003, afterward; it had an inclination to raise to 0.2696 in 2006. Using an assumption which shows no dramatic change on the rich, decreasing of inequality give an indication that the poor may receive more benefit from economic growth than other group. In this region, the poor enjoys the advantage of economic growth during 2001-2003 period

The total Theil index inequality level in Java region is about 95% resulting from inequality within province. Meanwhile the rest is assumed stable because annually the variation of inequality between provinces is around 5%. This may indicate that in Java and Bali regions, the spreading of income distribution between provinces have relatively similar, while in the case within province, the condition indicates large variation of income distribution

**Figure 8**  
**The Pattern of DAU and Theil Index in Jawa\_Bali Region 2001-2006**



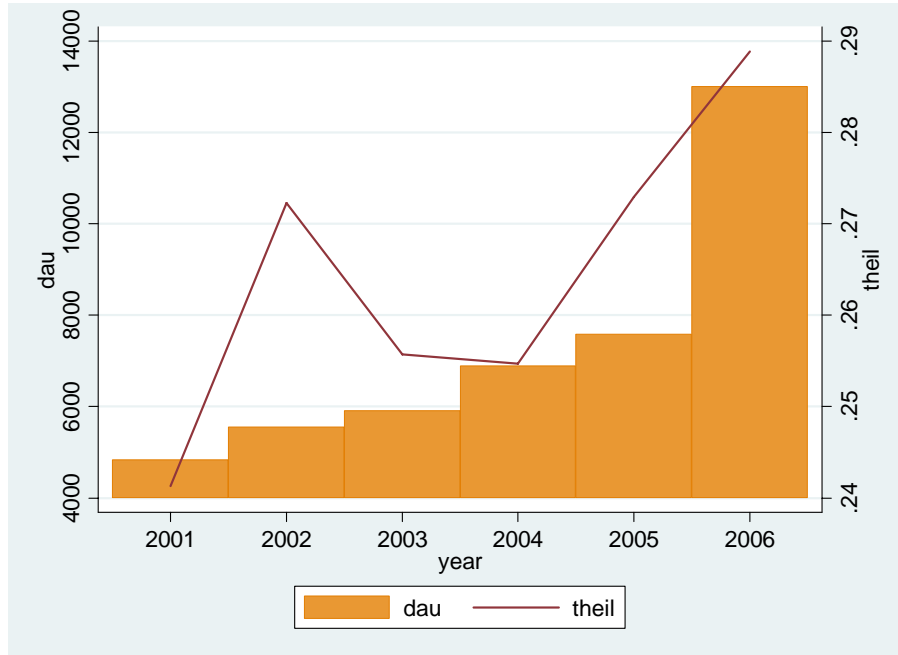
In Kalimantan region, the inequality had commonly indicated an increasing trend from 0.24131 in 2001 to 0.28887 in 2006 with minor fluctuation during 2002-2005 (see table 8 and figure 9). 60% of total theil index inequality is caused by inequality between provinces. It gave general indication that between province in Kalimantan region diverge each other particularly in income distribution. The DAU transfers from central to local government tend to support the increasing of inequality. Government expenditure in this region does not give greater impact on inequality reduction. During 2002-2004, policy of local government expenditure gave positive impact on inequality reduction.

**Table 8**  
**Theil Index Between and Within Province on Kalimantan Region 2001-2006**

Theil Index	2001	2002	2003	2004	2005	2006
Within	0.09829	0.10350	0.09871	0.10739	0.11955	0.14049
Between	0.14302	0.16883	0.15699	0.14730	0.15339	0.14838
Total	0.24131	0.27233	0.25570	0.25469	0.27294	0.28887

Source: own calculation

**Figure 9**  
**The Pattern of DAU and Theil Index in Kalimantan Region 2001-2006**



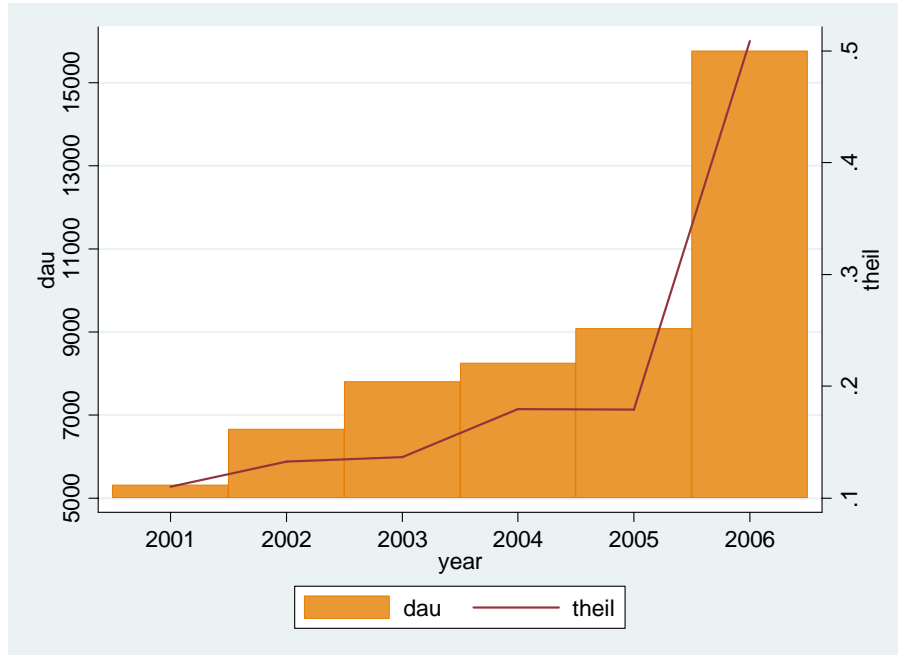
**Table 9**  
**Theil Index Between and Within Province on Sulawesi Region 2001-2006**

Theil Index	2001	2002	2003	2004	2005	2006
Within	0.09828	0.11839	0.12106	0.15699	0.15561	0.41718
Between	0.01193	0.01414	0.01548	0.02277	0.02362	0.09150
Total	0.11020	0.13253	0.13654	0.17977	0.17923	0.50868

Source: own calculation

Inequality in Sulawesi region has a similar trend in Kalimantan, where inequality indicates an increasing trend (see table 9 and figure 10). The difference is on the source of the inequality. In Kalimantan, the biggest source of inequality occurs between provinces, while in Sulawesi, the inequality mainly comes within province (about 80%). Increasing DAU budget from central to local government over time did not follow with the policy of local government expenditure which gave an impact on inequality reduction. Government policy on increasing economic growth gives an impact on increasing inequality.

**Figure 10**  
**The Pattern of DAU and Theil Index in Sulawesi Region 2001-2006**



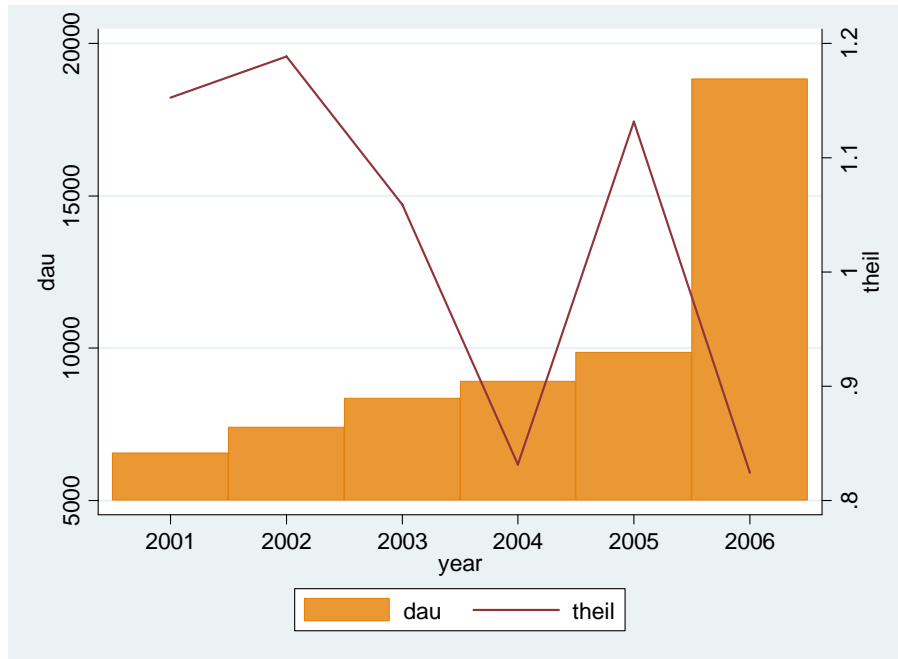
**Table 10**  
**Theil Index Between and Within Province on other Region 2001-2006**

Theil Index	2001	2002	2003	2004	2005	2006
Within	0.82027	0.86728	0.77840	0.64860	0.90460	0.69269
Between	0.33230	0.32147	0.28066	0.18284	0.22688	0.13132
Total	1.15257	1.18875	1.05906	0.83144	1.13147	0.82401

Source: own calculation

For other regions i.e. Nusa Tenggara, Maluku and Irian Jaya/Papua, the inequality trend has a tendency to fluctuate (see table 10 and figure 11). There is no clear pattern on inequality. This region has the biggest area in Indonesia with so many islands. This condition gives constraint to local government to create any policy in order to increase their economies without any loose on inequality control. The policy done by local government in this region did not give any impact on inequality reduction.

**Figure 11**  
**The Pattern of DAU and Theil Index in Others Region 2001-2006**



Based on those results, I can conclude that in national level, increasing DAU as an important part of fiscal decentralization instrument tends to increase economic growth. This fact is already in line with Oates (1993), Martinez and Macnab (2003) believe that there are positive relationship on fiscal decentralization and economic growth. They argue, under an assumption that the local government has known their region characteristics well, its expenditure on infrastructure and social sector will effectively support the economic growth of a region which will ultimately increase the national economic growth as a whole. Zhang and Zou (2001) also conclude that there is positive effect of fiscal decentralization on economic growth in India and negative effect in China. Davoodi and Zou (1998) also conclude that there are negative relationship between fiscal decentralization and growth in developing countries and positive relationship in developed countries.

This condition indicates that local government more effective and efficient in allocation its expenditure which have much impact on increasing economic growth than central government.

Shown by the results presented previously, there is an indication that DAU has an impact on inequality. There are three kinds of impacts. Firstly, increasing DAU is followed by decreasing inequality. This condition happened in national level, Sumatera, and Jawa\_Bali regions. Secondly, increasing DAU is followed by increasing Inequality. This happened in Kalimantan and Sulawesi

regions. And the last, increasing DAU is followed by fluctuate patterns of inequality. This happened in others.

The decreasing trend in inequality will happened if the poor has received more benefit on the policy of local government expenditure. For over time DAU always increases during 2001 – 2006. According to Law No. 22/1999 and Law No. 25/1999 then revised by Law No. 32/2004 and Law No. 33/2004, DAU is calculated based on fiscal gap which is the differences between fiscal need and fiscal capacity. The consequent of that role is the rich regions which have high fiscal capacity will get small DAU or not receipt it. But in application, there is political compromise which is known as “hold harmless principle”. This Principle states that the total allocation for one district can not be less than previous year allocation. The effects of this principle will constraint the function of DAU as the solver of horizontal imbalance problem on fiscal capacity. That is why the DAU always has increasing trend during 2001-2006 periods. Based on article 107 law no 33/2004 starting at 2008, the hold harmless principle is inoperative; then, the function of DAU will more effective and useful than previous years.

## Chapter 5

### Conclusion

More than six years, Indonesia has implemented the new fiscal decentralization policies. It substantiates one reform following the 1997 Asian economic crisis which brought Soeharto era down. Changing the structure of the Indonesia government, the new decentralization scheme has transformed the central – local government relationship in a great extent.

In that policy, a great deal of central government authorities were delegated to local governments, excluding foreign policies, national defence, laws, monetary policies, religion<sup>14</sup>, and also authorities of other areas such as the National Development Planning, the National Standardization, and conservations<sup>15</sup>. Indonesian central government uses three kinds of financial instruments such as Dana Bagi Hasil (the Revenue Sharing Found), Dana Alokasi Umum/DAU (the general allocation fund), and Dana Alokasi Khusus (the specific allocation fund). The biggest part of fiscal decentralization instruments is DAU, for which local government have completed discretion to spend according to their perceived needs and priorities. Besides, DAU has a purpose to solve the horizontal imbalance problem. The type of fiscal transfers which use equalization system is effective to address regional disparity issues (Ma 1997). Remaining Indonesian geographic condition such as many differences of islands, resources, and cultures that naturally create differences on economic conditions among regions<sup>16</sup>, provinces and districts<sup>17</sup>, those policies might give the positive impact for Indonesia. The local governments which have more authority can solve their problems using their own perspectives because the local governments are assumed to understand more about their regions rather than the central government.

According to Law No. 22/1999 and Law No. 25/1999 which is further revised by Law No. 32/2004 and Law No. 33/2004, DAU is calculated based on fiscal gap, which is the different values between fiscal need and fiscal capacity. The consequent of that rule is that the rich regions which have high fiscal capacity will get small DAU or even they could not receive the DAU. But in application, there is political compromise which is known as “hold harmless principle”. This Principle states that the total allocation for one district can not be less than previous year allocation. The effects of this principle will constraint the function of DAU as the solver of horizontal imbalance problem on fiscal capacity. That is why the DAU always has an increasing trend during 2001-2006 periods. Based on article 107 law no 33/2004 starting at 2008, the hold harmless principle is inoperative. Based on this, the function of DAU will be more effective and useful than previous years.

Measuring the changes in inequality helps to determine the effectiveness of policies and to generate the data that necessary use inequality as an explanatory variable in policy analysis. Inequality becomes an important matter if the level is too high, since it will become one factor that can cause the social unrest, especially in countries with stronger economic growth and lower poverty rate.

In 2001 – 2006 periods, the inequality at national level remains stable, not much fluctuation, with decreasing trend. Partially, in 2001-2003 periods, the

inequality at national level and most all regions except Kalimantan and Sulawesi have decreasing trends. All situations in those periods, have already given an impact on reducing the inequality level.

During those periods which is the first period of implemented fiscal decentralization policy, Indonesia experienced euphoria over decentralization, which allow local governments able to decide the things which formerly should be decided by the central government. This phenomenon indicates that policy implementation at local government is more effective than before the fiscal decentralization was implemented. The effect of fiscal decentralization is a reduction on inequality level.

Shown by the results presented previously, there is an indication that DAU has an impact on inequality. There are three kinds of impacts. Firstly, increasing DAU is followed by decreasing inequality. This condition happened in national level, Sumatera , and Jawa\_Bali regions. Secondly, increasing DAU is followed by increasing Inequality. This happened in Kalimantan and Sulawesi regions. And the last, increasing DAU is followed by fluctuate patterns of inequality. This also occurs in other regions.



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## Appendices

```
. pwcorr dau grdp, sig
```

	dau	grdp
dau	1.0000	
grdp	0.4302	1.0000

```
. pwcorr lndau lngrdp, sig
```

	lndau	lngrdp
lndau	1.0000	
lngrdp	0.5642	1.0000

```
. ineqdeco grdpcap [aw=pop] if year==2001, by( c_reg)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.24294	0.24440	0.34707	1.04884	0.38264

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23372	0.23504	0.33744	1.03880

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00922	0.00937	0.00963	0.01004

```
. ineqdeco grdpcap [aw=pop] if year==2002, by( c_reg)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.23789	0.23215	0.30151	0.74417	0.37627

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.22794	0.22228	0.29155	0.73393

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.00995	0.00987	0.00996	0.01024

. ineqdeco grdpcap [aw=pop] if year==2003, by( c\_reg)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.23708	0.22759	0.28648	0.62589	0.37258

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.22605	0.21689	0.27595	0.61534

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01104	0.01069	0.01053	0.01055

. ineqdeco grdpcap [aw=pop] if year==2004, by( c\_reg)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.39598	0.32657	0.30795	0.98528	0.43644

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.38290	0.31327	0.29416	0.97070

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01308	0.01330	0.01379	0.01458

. ineqdeco grdpcap [aw=pop] if year==2005, by( c\_reg)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.24895	0.23657	0.29991	0.65349	0.37886

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23841	0.22566	0.28841	0.64115

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01054	0.01091	0.01150	0.01234

. ineqdeco grdpcap [aw=pop] if year==2006, by( c\_reg)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.25350	0.24244	0.30568	0.59170	0.38393

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23957	0.22820	0.29080	0.57580

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01393	0.01424	0.01488	0.01590

. ineqdeco grdpcap [aw=pop] if year==2001, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.24294	0.24440	0.34707	1.04884	0.38264

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17375	0.17440	0.26474	0.92802

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.06919	0.07001	0.08233	0.12083

```
. ineqdeco grdpcap [aw=pop] if year==2002, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.23789	0.23215	0.30151	0.74417	0.37627

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17821	0.17108	0.23071	0.64892

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.05968	0.06107	0.07080	0.09526

```
. ineqdeco grdpcap [aw=pop] if year==2003, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.23708	0.22759	0.28648	0.62589	0.37258

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.17785	0.16796	0.21851	0.53592

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.05923	0.05962	0.06797	0.08997

```
. ineqdeco grdpcap [aw=pop] if year==2004, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.39598	0.32657	0.30795	0.98528	0.43644

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.33587	0.26774	0.24355	0.90523

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.06010	0.05883	0.06439	0.08006

. ineqdeco grdpcap [aw=pop] if year==2005, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.24895	0.23657	0.29991	0.65349	0.37886

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.19332	0.17958	0.23342	0.56305

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.05562	0.05699	0.06649	0.09044

. ineqdeco grdpcap [aw=pop] if year==2006, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.25350	0.24244	0.30568	0.59170	0.38393

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.19516	0.18259	0.23565	0.49575

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.05834	0.05985	0.07003	0.09594

. ineqdeco grdpcap [aw=pop] if year==2001& c\_reg==1, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)    Gini
-----+-----
          |  0.24637    0.24467    0.37895    1.50878    0.37608
-----
```

Within-group inequality, GE\_W(a)

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)
-----+-----
          |  0.14228    0.12811    0.21739    1.20014
-----
```

Between-group inequality, GE\_B(a):

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)
-----+-----
          |  0.10409    0.11657    0.16156    0.30864
-----
```

. ineqdeco grdpcap [aw=pop] if year==2001& c\_reg==2, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)    Gini
-----+-----
          |  0.21569    0.22365    0.29049    0.53041    0.36949
-----
```

Within-group inequality, GE\_W(a)

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)
-----+-----
          |  0.20184    0.21009    0.27705    0.51693
-----
```

Between-group inequality, GE\_B(a):

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)
-----+-----
          |  0.01385    0.01356    0.01344    0.01348
-----
```

. ineqdeco grdpcap [aw=pop] if year==2001& c\_reg==3, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)    Gini
-----+-----
          |  0.24802    0.21912    0.24131    0.35072    0.36224
-----
```

Within-group inequality, GE\_W(a)

```
-----
All obs |    GE(-1)    GE(0)    GE(1)    GE(2)
-----+-----
          |  0.12321    0.08916    0.09829    0.18408
-----
```



Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12481	0.12996	0.14302	0.16664

. ineqdeco grdpcap [aw=pop] if year==2001& c\_reg==4, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.11466	0.10738	0.11020	0.12337	0.25906

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.09912	0.09391	0.09828	0.11262

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01554	0.01347	0.01193	0.01075

. ineqdeco grdpcap [aw=pop] if year==2001& c\_reg==5, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.39031	0.46576	1.15257	9.50101	0.47895

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.16047	0.20738	0.82027	9.00125

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.22984	0.25837	0.33230	0.49976

. ineqdeco grdpcap [aw=pop] if year==2002& c\_reg==1, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.20775	0.19061	0.22724	0.39332	0.33406

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.13029	0.10507	0.12076	0.23784

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.07746	0.08554	0.10648	0.15548

. ineqdeco grdpcap [aw=pop] if year==2002& c\_reg==2, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.21281	0.21584	0.26455	0.42939	0.36584

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.20051	0.20385	0.25275	0.41765

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01230	0.01199	0.01180	0.01174

. ineqdeco grdpcap [aw=pop] if year==2002& c\_reg==3, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.27056	0.24134	0.27233	0.41514	0.38189

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12631	0.09017	0.10350	0.21357

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.14425	0.15117	0.16883	0.20156

. ineqdeco grdpcap [aw=pop] if year==2002& c\_reg==4, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference

sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.13877	0.12958	0.13253	0.14780	0.28631

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.11946	0.11329	0.11839	0.13523

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01931	0.01630	0.01414	0.01257

. ineqdeco grdpcap [aw=pop] if year==2002& c\_reg==5, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.43502	0.50140	1.18875	9.49813	0.50734

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.19652	0.24143	0.86728	9.03902

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23850	0.25997	0.32147	0.45911

. ineqdeco grdpcap [aw=pop] if year==2003& c\_reg==1, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.21117	0.18724	0.21044	0.31759	0.33097

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.13447	0.10510	0.10978	0.17195

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.07671	0.08214	0.10066	0.14564

. ineqdeco grdpcap [aw=pop] if year==2003& c\_reg==2, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.20760	0.21142	0.25858	0.41302	0.36193

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.19492	0.19919	0.24667	0.40131

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01268	0.01223	0.01191	0.01171

. ineqdeco grdpcap [aw=pop] if year==2003& c\_reg==3, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.25765	0.22993	0.25570	0.37490	0.37394

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12702	0.09085	0.09871	0.18630

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.13063	0.13908	0.15699	0.18860

. ineqdeco grdpcap [aw=pop] if year==2003& c\_reg==4, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.16354	0.14002	0.13654	0.14822	0.29184

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.14310	0.12242	0.12106	0.13433

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.02044	0.01760	0.01548	0.01389

. ineqdeco grdpcap [aw=pop] if year==2003& c\_reg==5, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.39841	0.46253	1.05906	7.47673	0.48635

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.19081	0.23404	0.77840	7.08593

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.20760	0.22849	0.28066	0.39080

. ineqdeco grdpcap [aw=pop] if year==2004& c\_reg==1, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.88949	0.59093	0.22514	0.99687	0.56799

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.79456	0.50550	0.13855	0.89781

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.09493	0.08543	0.08659	0.09907

. ineqdeco grdpcap [aw=pop] if year==2004& c\_reg==2, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.25204	0.23149	0.26598	0.41851	0.37674

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.23843	0.21815	0.25275	0.40524

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.01361	0.01334	0.01323	0.01327

. ineqdeco grdpcap [aw=pop] if year==2004& c\_reg==3, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.24976	0.22337	0.25469	0.39837	0.36538

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12508	0.09167	0.10739	0.22346

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12468	0.13170	0.14730	0.17491

. ineqdeco grdpcap [aw=pop] if year==2004& c\_reg==4, by( c\_prop)

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.19385	0.16992	0.17977	0.23448	0.31942

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.16493	0.14452	0.15699	0.21369

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)

```

-----
|      0.02892      0.02540      0.02277      0.02079
-----

```

```

. ineqdeco grdpcap [aw=pop] if year==2004& c_reg==5, by( c_prop)

```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----
|      0.35931      0.40338      0.83144      4.52620      0.45984
-----

```

Within-group inequality, GE\_W(a)

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.20812      0.24279      0.64860      4.30171
-----

```

Between-group inequality, GE\_B(a):

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.15119      0.16059      0.18284      0.22449
-----

```

```

. ineqdeco grdpcap [aw=pop] if year==2005& c_reg==1, by( c_prop)

```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----
|      0.18493      0.16803      0.19534      0.31480      0.31103
-----

```

Within-group inequality, GE\_W(a)

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.12287      0.09847      0.10677      0.18277
-----

```

Between-group inequality, GE\_B(a):

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.06206      0.06956      0.08856      0.13203
-----

```

```

. ineqdeco grdpcap [aw=pop] if year==2005& c_reg==2, by( c_prop)

```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----
|      0.21435      0.21695      0.26406      0.41988      0.36675
-----

```

Within-group inequality, GE\_W(a)

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----

```

```

-----
|      0.20189      0.20498      0.25247      0.40855
-----

```

Between-group inequality, GE\_B(a):

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.01247      0.01197      0.01159      0.01133
-----

```

```
. ineqdeco grdpcap [aw=pop] if year==2005& c_reg==3, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----
|      0.26106      0.23348      0.27294      0.45638      0.37191
-----

```

Within-group inequality, GE\_W(a)

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.12758      0.09474      0.11955      0.27561
-----

```

Between-group inequality, GE\_B(a):

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.13348      0.13874      0.15339      0.18077
-----

```

```
. ineqdeco grdpcap [aw=pop] if year==2005& c_reg==4, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----
|      0.19905      0.17171      0.17923      0.23079      0.32077
-----

```

Within-group inequality, GE\_W(a)

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.16916      0.14542      0.15561      0.20914
-----

```

Between-group inequality, GE\_B(a):

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)
-----+-----
|      0.02989      0.02629      0.02362      0.02165
-----

```

```
. ineqdeco grdpcap [aw=pop] if year==2005& c_reg==5, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```

-----
All obs |      GE(-1)      GE(0)      GE(1)      GE(2)      Gini
-----+-----

```



```
-----+-----
| 0.53364 0.56433 1.13147 6.10236 0.54766
-----+-----
```

Within-group inequality, GE\_W(a)

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.32865 0.35944 0.90460 5.82276
-----+-----
```

Between-group inequality, GE\_B(a):

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.20499 0.20490 0.22688 0.27960
-----+-----
```

```
. ineqdeco grdpcap [aw=pop] if year==2006& c_reg==1, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2) Gini
-----+-----
| 0.13059 0.13373 0.16659 0.27590 0.28101
-----+-----
```

Within-group inequality, GE\_W(a)

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.06600 0.06192 0.07621 0.14266
-----+-----
```

Between-group inequality, GE\_B(a):

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.06459 0.07181 0.09038 0.13324
-----+-----
```

```
. ineqdeco grdpcap [aw=pop] if year==2006& c_reg==2, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2) Gini
-----+-----
| 0.22004 0.22187 0.26960 0.42807 0.37105
-----+-----
```

Within-group inequality, GE\_W(a)

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.20653 0.20892 0.25707 0.41582
-----+-----
```

Between-group inequality, GE\_B(a):

```
-----+-----
All obs | GE(-1) GE(0) GE(1) GE(2)
-----+-----
| 0.01350 0.01295 0.01253 0.01225
-----+-----
```

```
. ineqdeco grdpcap [aw=pop] if year==2006& c_reg==3, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.23104	0.22736	0.28887	0.53818	0.36942

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.10154	0.09265	0.14049	0.36476

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12950	0.13471	0.14838	0.17343

```
. ineqdeco grdpcap [aw=pop] if year==2006& c_reg==4, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.36334	0.34717	0.50868	1.26116	0.44245

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.27698	0.26174	0.41718	1.15578

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.08636	0.08543	0.09150	0.10538

```
. ineqdeco grdpcap [aw=pop] if year==2006& c_reg==5, by( c_prop)
```

Generalized Entropy indices GE(a), where a = income difference sensitivity parameter, and Gini coefficient

All obs	GE(-1)	GE(0)	GE(1)	GE(2)	Gini
	0.40767	0.44334	0.82401	3.43578	0.48844

Within-group inequality, GE\_W(a)

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.28178	0.31865	0.69269	3.28856

-----

Between-group inequality, GE\_B(a):

All obs	GE(-1)	GE(0)	GE(1)	GE(2)
	0.12589	0.12469	0.13132	0.14722

-----

## Notes

- <sup>1</sup> In Indonesia, there are five religions which are accepted by central government's rule
- <sup>2</sup> This relates to forest managements
- <sup>3</sup> Based on geographical condition, Indonesia can be divided into five regions i.e.; Sumatera, Java\_Bali, Kalimantan, Sulawesi, and Others.
- <sup>4</sup> Districts are a part of province. They are one level below province. One level above province is national (central government). Every region contains several province.
- <sup>5</sup> It is one of principles in inequality measurement. This principles state that a regressive transfer, transfer from "the not richer" to "the not poorer", give effect on increasing inequality.
- <sup>6</sup> See (Bourguignon 1979) to more detail on bourguignon investigation on income inequality
- <sup>7</sup> Based on author calculation using data from statistik 60 tahun Indonesia Merdeka
- <sup>8</sup> See figure 8.2 in World Apart, Milanovic (2005b)
- <sup>9</sup> See figure 8.3 in World apart, Milanovic (2005b)
- <sup>10</sup> There are five large countries i.e. China, India, Indonesia, USA, Brazil.
- <sup>11</sup> In this paper, The government hierarchal refer to the structure of central government – provinces – Districts.
- <sup>12</sup> Indonesia's history has recorded some changes on its state governance form. Since Its independence in 1945, Indonesia was born in the form of the Unitary State of the Republic of Indonesia with UUD 1945 as the basis of Indonesian constitution. In 1949, Indonesia has changed its state form to be the United States of Indonesia with the basis of Federal constitution of 1949. However in August 15, 1950, the state was returned to the initial form: the Republic of Indonesia and the previous constitution was replaced by the Provisional Constitution of 1950. Nevertheless, due to some internal conflicts within the state, on 5 July 1959 a decree was issued by President Sukarno to return to the 1945 Constitution. Even though there are some changes or additional sections, in the reformation era, the 1945 Constitution is still being a legal framework for Indonesian Constitution until this present time.
- <sup>13</sup> In this term, others consist of Nusa Tenggara Barat, Nusa Tenggara Timur, Maluku, and Irian Jaya
- <sup>14</sup> In Indonesia, there are five religions which are accepted by central government's rule
- <sup>15</sup> This relates to forest managements
- <sup>16</sup> Based on geographical condition, Indonesia can be divided into five regions i.e.; Sumatera, Java\_Bali, Kalimantan, Sulawesi, and Others.
- <sup>17</sup> Districts are a part of province. They are one level below province. One level above province is national (central government). Every region contains several province.