PAK Publishing Group
Growing Knowledge for Future

Proceedings Book of ICBSSS, 2014, Malaysia
Handbook on Business Strategy and Social Sciences
ISBN: 978-969-9952-00-5

Growth & Inequality in Indonesia : Does Kuznets Curve Hold?

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ABSTRACT

Sustainable economic growth has put Indonesia as one of the countries which categorize as middle income country. The Indonesian economy has regained the status of lower middle income countries since 2004 and currently the level of per capita income already exceeding US$3000. The increasing in income per capita is followed by the increasing number of middle-class population and the reduction in poverty. However, the increasing in per capita income has not been accompanied by declining inequality that reflects the quality of economic growth. According to Kuznets theory, an increase in inequality is a common problem in the process of economic transformation from resource-based economy to a technology–based and innovation economy. Inequality will further decline after the country reach a certain threshold level of income.

This study is aimed to analyze the trend and nature of income inequality in Indonesia and how it evolves as the income level rise, to test whether the Kuznets Curve holds for Indonesia i.e. that inequality rises at first and then falls along with the country's income level and to find the turning point of the income level (if Kuznets curve is proven), and to analyse the near term risk of inequality. This paper used dynamic panel method with 26 provincial panel data from 2000 to 2011. This paper found the evidence of the existence of inverted-U shaped Kuznets Curve in Indonesia. The result shows that Indonesia may have the turning points when the real GDP per capita in each provinces reached Rp. 179.41 million/ year. For the determinan of inequality in Indonesia, this study found that percentage of urban population, inflation and share of agricultural sector contributed to the increase of inequality while high level education and share of industrial sector are associated with lower level of inequality.

The risk of an increase in income inequality in the short run needs to be aware and managed to support sustainable economic growth. Therefore a well targeted policy should be made so the economic growth can be enjoyed by the whole society.

Keywords: Growth, Middle Class, Poverty , Inequality, Kuznets Curve, Dynamic Panel
JEL Classification: G21, E51, C23,C24

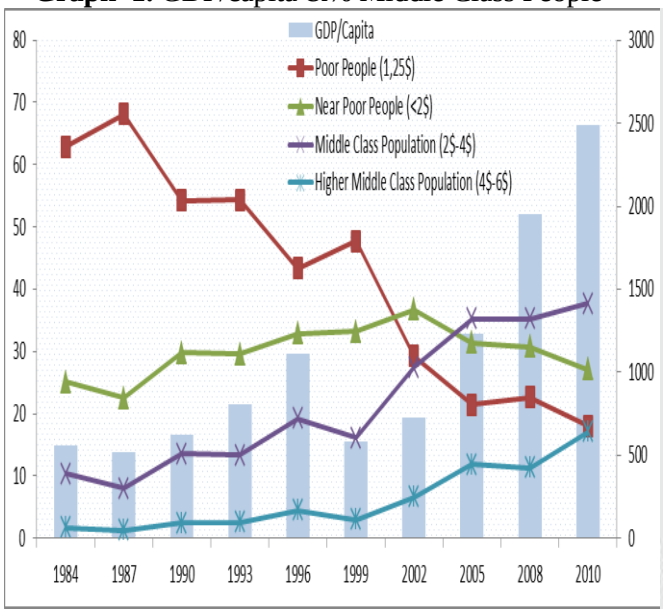
1. Introduction

The Indonesian economy has regained the status of lower middle income countries since 2003 and currently the level of per capita income already exceeding US$3000. The increasing in per capita income is followed by the increasing number of people who are in the middle class and the declining number of people who are in poor or near poor category (Graph1-1). With its robust recent growth performance, which has been growing at 5,7% on average over the last decade and endurance throughout the global financial crises, Indonesia is gaining prominence as an emerging market economy with global influence. It is also considered as one of the largest Middle Income Countries (MIC) in the world.

An increasing number of middle class category have positive sides, but at the same time there is also challenges. On the positive side, it will create potential demand for goods and services thus will boost investment opportunity. According to an FDI survey, for example, Japan now chooses Indonesia not only as a transition hub for their exports but also as investment opportunity due to the growing size of

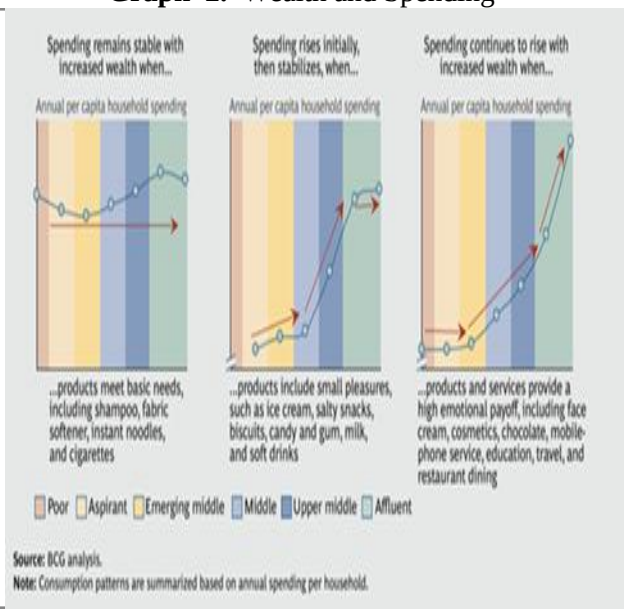
Indonesia's domestic market[1]. The increasing number of middle income people benefited the goverment because it raised potential tax payer and it can gradually reduce the amount of government's subsidy. However, we also have to be aware that this social transformation can lead to a middle-income trap.

Graph 1. GDP/capita &% Middle Class People



Source : Povcal Net and World Bank

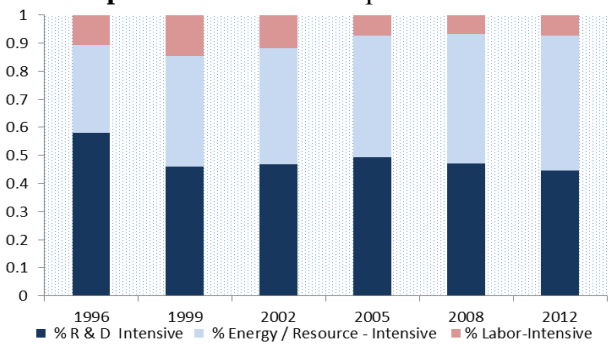
Graph 2. Wealth and Spending



Source : Boston Consulting Group

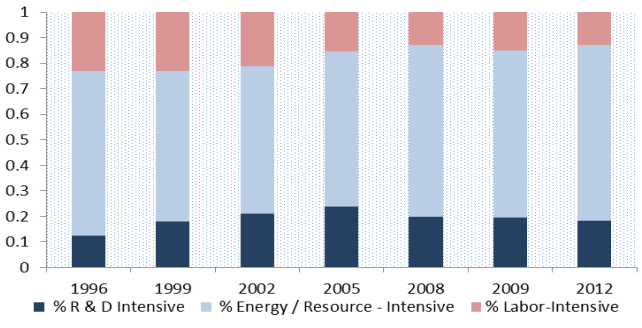
As income rises and living standards improve, the consumer's needs also follow a natural progression from products that previously address just their basic needs to those that offer greater convenience. Survey from Boston Consulting Group in their 2013 article[2] shows there is a big jump in the purchase of consumer durable products and high-tech products are the most popular one for the middle class. The domestic needs for high tech product are mostly fulfilled from abroad. This can be seen in the the structure of Indonesian import that reflecting the dependence on goods of high added value (Graph 1-3). On the other hand, the ability of domestic industries to produce high tech products still limited. The structure of Indonesian export products are still dominated by energy/resource commodities (Graph 1-4). Therefore economic actors that can exist are those that are able to supply goods and services of high added value and innovative. If domestic industries can not satisfy the increasing need of the middle income group, this would be a risk for the achievement of sustainable growth path in the future, which could lead Indonesia to stuck in the current level of income (middle income trap).

Graph 3. Indonesia's Import Structure



Source : UNCTAD

Graph 4. Indonesia's Export Structure



Source : UN-Escap

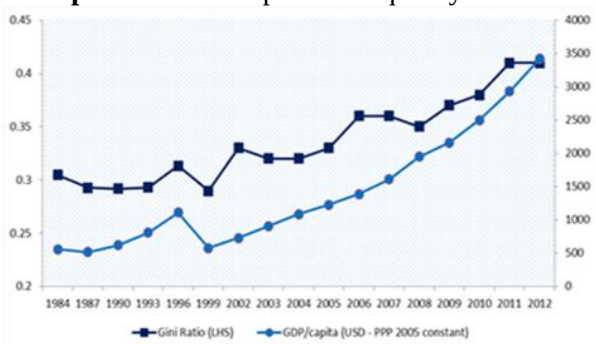
The other challenge that we also have to face is the decrease of number of poor people and the increase of GDP per capita that are not followed by improvement in equality which is represented by the

[1] As stated by Sri Mulyani on her key note speech " Indonesia : Middle Income Country in Transtition " from http://www.usindo.org

[2] BCG article "Indonesia's Rising Middle-Class and Affluent Consumers" wrote by Rastogi (2013).

gini ratio[3]. For almost 3 decades, GDP per capita has increased by five times, but gini ratio widened from 0,30 in 1984 to 0,41 in 2012 (Graph 1-5). This suggests a rising inequality between high and low income communities.

Graph 5. GDP / capita & Inequality



The potential of growth stagnation is a serious concern for policy makers not only in Indonesia but also in neighboring countries of lowermiddle income group. The recent global crises and its impact on economic activity, jobs, and the poor—has made economist renew the focus on the drivers of growth, including possible links between income inequality, crises, and growth sustainability (Berg and Ostry, 2011). Inequality actually is a common problem for every country in the growth process, but too much inequality might be destructive to growth. Melkadze (2013) mentioned that one of the main ways in which high inequality negatively affects economic growth is through social turmoil. Social discontent can be translated into socio political instability, raising political and economic uncertainty, which in turn impedes private investment both foreign and domestic and finally dampened economic growth. Therefore managing inequality is necessary to maintain a sustainable growth.

Over the coming decades, we would like to see Indonesia is able to reach the upper middle income level and could break the high income barrier. At the same time we want to move to higher income status as an inclusive society, with lower poverty and lower inequality. In the past few years economist have talked in more urgent terms about the importance of the quality of growth in addition to mere economic growth rate. Everyone in the economy should be benefited from growth and growth is equally distributed among all income groups. The success of regaining the middle income status should be coupled with the improvement of people's welfare such as education and health indices.

Based on the above mentioned background, it is necessary to analyse how the quality of economic development in Indonesia could support the long term goal of achieving a sustainable and equitable growth. Therefore the aim of the paper are :

1) To analyze the trend and nature of income inequality in Indonesia and how it evolves as the income level rise.
2) To test whether the Kuznets Curve hold true for Indonesia i.e. that inequality rises at first and then falls along with the country's income level. If the Kuznet Curve is proven to be hold then we would like to find the turning point of the income level.
3) To analyse the near term risk of inequality and current policy options for sustained and equitable growth.

This paper will consist of five parts. Following this introduction, a review of literature is presented in Section 2. Section 3 will describe the trend and evolution of income inequality, poverty and income level. Section 4 and 5 discuss the methodology and the empirical result respectively. Discussion about the near term risk to inequality is presented in Section 6, followed by discussion about policy option to ensure sustainable and equitable growth in Section 7. Finally the concluding remarks are presented in Section 8.

[3] The Gini coefficient is derived from the ratio of the share of income going to the lowest quintile of the income distribution and the share going to the highest quintile. The Gini coefficient can be viewed as an average of deviations of quintile shares from 0.2, the value that holds under full equality Barro (2008).

2. Literature Review

2.1. Growth and Inequality

The connection between inequality and economic growth has been seen not only through the effects of income inequality on growth but also of how growth on income affect inequality. In accordance with the effect of income inequality on growth, the theories can be classified into four categories / channels (Barro, 2000; Berg and Ostry, 2011)[4] namely credit-market imperfections, political economy, political instability and saving rates. The first channel credit market imperfections typically reflect asymmetric information and limitations of legal institutions. With limited access to credit, the exploitation of investment opportunities depends, to some extent, on individual's level of assets and incomes. In this case, the poor people would have no access to credit market therefore they tend to ignore education which is very essensial for the development of human capital for sustainable growth[5]. The second channel is through political economy. A greater degree of inequality motivates redistribution of income through political process. Therefore in economically unequal countries, politician can easily use the issue of inequality to provoke a policy that may create disincentives to investment which finally result in lower or less durable growth (Alesina and Rodrik, 1994) for example transfer payments and associated tax finance as well as minimum wages . The third channel is political instability. Income inequality motivates the poor people to engage in crime, riots and other disruptive activities. The stability of political institutions may be threatened by revolution, so there is a greater uncertainty in the macro and political stability. This condition would reduce incentives to invest and hence impair growth. The last channel is through saving rate channel. Some economist believed that individual saving rates rise with the level of income. If this is true, then a redistribution of resources from rich to poor tends to lower the aggregate rate of savings in an economy. Through this channel, a rise in inequality tends to raise investment[6]. In this case, more inequality would enhance economic growth atleast in a transitional phase.

The importance of keeping inequality low to support sustainable growth is stated in some empirical works. According to Berg and Ostry (2011), there is a statistically significant association between income inequality and growth duration. Countries with more equal income distributions tend to have significantly longer growth duration. Inequality is among the variables with economically strongest effect on duration of growth. It is also among the most robust variables, and it remains statistically significant across samples. Another economic evidence is presented by Barro (2008), who has found that growth rates of developing economies tend to fall with greater income inequality. His cross-country-growth equation shows a negative effect of income inequality on economic growth, holding fixed a familiar set of other explanatory variables. This effect diminishes as per capita GDP rises and may be positive for the richest countries.

2.2. Kuznets Curve

In accordance with the effect of income growth on inequality, the basic question is whether economic growth tends to improve, worsens or has no effect on income distribution? The economic laws that describe the path of income in the course of economic growth was first introduced by Simon Kuznets in 1955[7]. According to Kuznets, inequality follows the pattern of inverted U shape. Kuznets curve plot inequality or the Gini coefficient on the Y axis and economic development or per capita income on the X axis. Simon Kuznets claimed that at the stages of relatively low level of economic development, which also low levels of per-capita income, inequality may initially increase as the economy grows. But then the trend is likely to reverse as the economy reaches a certain threshold of income per capita. The intuition behind this hypothesis is rather simple. When economic moves from low productivity agriculture to more productive sectors such as manufacturing and services , this process initially benefits only the minority of population, which is urban people, thereby resulting an increase in income gap. As the economy grows, the share of the labour force in the low productivity sector become lower and lower. The productivity becomes equal across sector thus leading to a reduction in inequality.

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[4]Berg and Ostry only mentioned 3 channel namely credit market imperfections, political economy and political instability.

[5]According to Ray (1998) stated in Gallo (2002). the so called "New Growth Theories" bring the concept of *human capital*. Human capital is regarded as skilled labour who is well educated. The educated labour has skilled in production, able to operate sophisticated machinery, able to improve methods of production, and able to create new ideas applicable to economic activities.

[6] Barro (2000) mentioned that this effect arises if the economy is partly closed, so that domestic investment depends, to some extent, on desired national saving.

[7]Kuznets (1955). "Economic Growth and Income Inequality". *American Economic Review* 45 (March): 1–28.

The issue of whether the Kuznets curve holds or not has sparked debate since the empirical findings to prove this theory are still diverse. The earlier work of Deininger and Squire (1996), Chen and Ravallion (1997), Easterly (1999) and Dollar & Kraay (2002) that all stated in (Lewis, 2013) Article[8] all suggest that growth, as such, does not have an impact on inequality. They also mentioned that there is no virtuous circle between higher growth and falling inequality levels. On the other hand, Ahluwalia, Carter and Chenery (1979), Higgins and Williamson (1999) and Gregorio & Lee (2002) that all stated in Nikoloski (2009)[9] find evidence of the Kuznets hypothesis. The more recent paper is by Frazer (2006) who also finds little support for the Kuznets hypothesis. There is evidence to support the Kuznets curve using cross section data, but using non parametric regression within countries, the Kuznets hypothesis wanes. Gallup (2012) estimation show a clear U-shaped relationship rather than Kuznets inverted U relationship. Barro (2008) that used international data confirms the presence of the Kuznets curve and it is relatively stable from the 1960s into the 2000s. Nikoloski (2009) who used panel data set of 81 countries find some weak evidence for the existence of Kuznets curve. In most of the model, he find evidence that rising GDP per capita in short run increases the level of inequality, while it decreases in long run. Other research that support the hypothesis was done by Kanbur and Zhuang (2013) who used urbanization as the only forces that explains the Kuznet Curve. It is claimed that the mere population shift from the rural to urban sector may lead to an inverted U curve after holding urban and rural inequalities and the urban-rural income gap constant. Kanbur and Zhuang uses sample of 4 countries[10] including Indonesia. They mentioned that among the sample of 4 countries, only PRC (China) has already passed its turning point. Inequality in Indonesia is predicted to decrease when the share of urban population between 71,1% to 84,9% while for the time being the share or urban population in 2012 is 44,9%.

2.3. Inequality and Its Determinant

There has been a substantial amount of research that analyse the determinant of inequality. One of interesting paper is by Nikoloski (2009). He classifies the factor into political and economic determinant. He concludes that economic determinant of income inequality carry more weight than the political ones. For economic factors, there is strong statistical evidence that natural resource abundance is associated with higher inequality while industrialization are associated with lower inequality. In addition, he also finds that trade openness is associated with lower inequality. The government expenditure variable is not sigficant to improve inequality. On political determinant, the variable democracy doesn't have any impact on inequality.

Although the relationship between inflation and income inequality remains unsettled in the literature, many find that inflation generally worsens inequality. Blejer and Guerrero (1990) for the Philippines, Datt and Ravallion (1998) for India, and Ferreira and Litchfield (2001) for Brazil, all find that higher inflation leads to a lower share of income held by the poorest group of the population[11]. Albanesi (2006) finds that inflation is positively related to income inequality due to the relative vulnerability to inflation of low income households. Wals and Yu (2012) that classify inflation into food and non food inflation in China and India, find that nonfood inflation exacerbates income inequality while the role of food inflation is rather mixed.

The theory regarding the human capital model of income distribution stemming from the work of Schultz, Becker and Mincer that stated in Psacharopoulos (2004). The human capital theory is an extension of the idea of physical capital. While business people invest in equipment and technology in order to increase productive capacity and obtain greater returns later, people spend time and money on education to get a higher quality personal. Therefore investment in people does not result in present satisfaction but in future returns for more skilled and productive labour. The empirical study conecting education and inequality was done by Gregorio and Lee (2002). They use panel data to asses the impact of education on income distribution for a period between 1960 and 1990. The findings indicate that education factor – higher attainment and more equal distribution of education- play a significant role in making income distribution more equal. He also find that government social expenditure contributes to more equal distribution of income.

[8] These findings are mentioned in World Bank article Growth & Inequality http://go.worldbank.org/AKKLH75ES0

[9] These findings are mentioned in Nikoloski, Zlatko. 2009. " Economic and Political Determinants of Income Inequality"

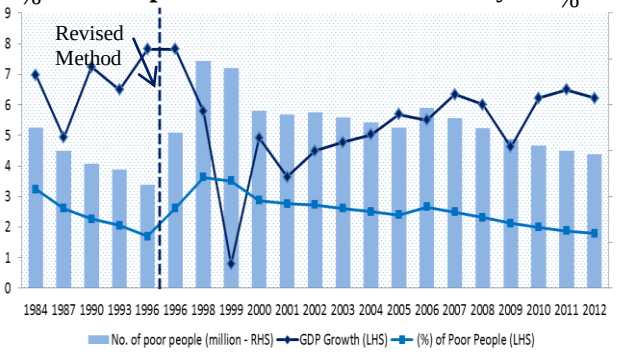
[10] The 4 countries are India, Indonesia, Philipine and China.

[11] This empirical result is stated in Walsh & Yu (2012)

3. Growth, Poverty and Inequality in Indonesia

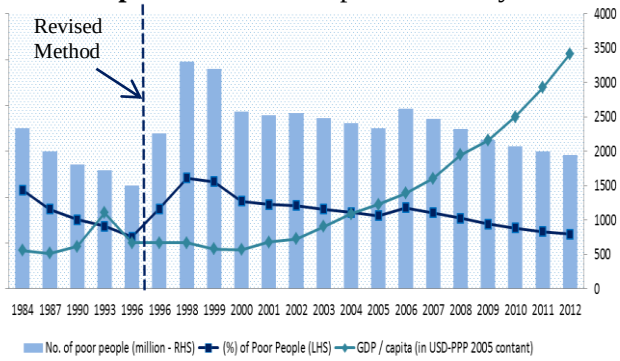
Indonesia had successfully maintained quite high economic growth and reduced poverty (Graph 3-1) during the period of 1980s to the mid of 1990s. In line with the increase of GDP per capita (Graph 3-2), the number of poor people[12] decreased from 35 million in 1984 (21,6% of total population) to 22,5 million in 1996 (11,3% of total population). In 1996, the methodology was revised and the percentage of poverty with the new definition was estimated at 17.5%. In 1998, poverty jumped significantly as the impact of the Asian financial crises before it starting to decrease in 2000. Afterwards poverty keeps going down except in 2006, which was due to rising domestic oil price that drove up the price of staple food. As a result, people who were not classified as poor but whose income around the poverty line shifted to the poor category. Eventhough the average growth rate after the crises[13] (5,6%) is smaller than before the crisis[14] (6,7%), the declining rate of number of poor people is higher. After the crises, the number of poor people was reduced over 1,45 million each year (or about 0,88% a year) while before the crises the declining rate was 1,04 million people a year (or about 0,85%). This indicates an improvement in the government poverty alleviation program after the crises.

Graph 1. GDP Growth & Poverty



Source : BPS

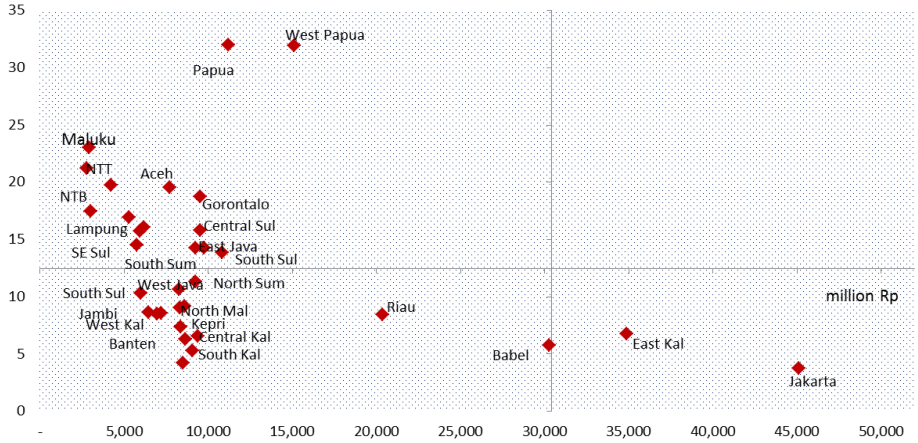
Graph 2. GDP Per Capita & Poverty



Source : UN-ESCAP &BPS

The poverty and income per capita also characterized by the substantial disparity between region especially between East and West Region. By 2011, Indonesia's per capita income rose to US$ 3420 but there are only 3 provinces with income per capita close to or exceed average national income and 9 provinces with poverty above national average (Graph 3-3). However, if we use provincial average (Graph 3-4), there are 7 provinces with income per capita close to or exceed average provincial average and 16 provinces with poverty above provincial average. Using the second method, in some region the income per capita far above provincial average and poverty below provincial average such as DKI, East Kalimantan and Bangka-Belitung. In provinces like Papua and West Papua, which are relatively rich compared to the other areas, the picture is arguably worse, the poverty is very high.

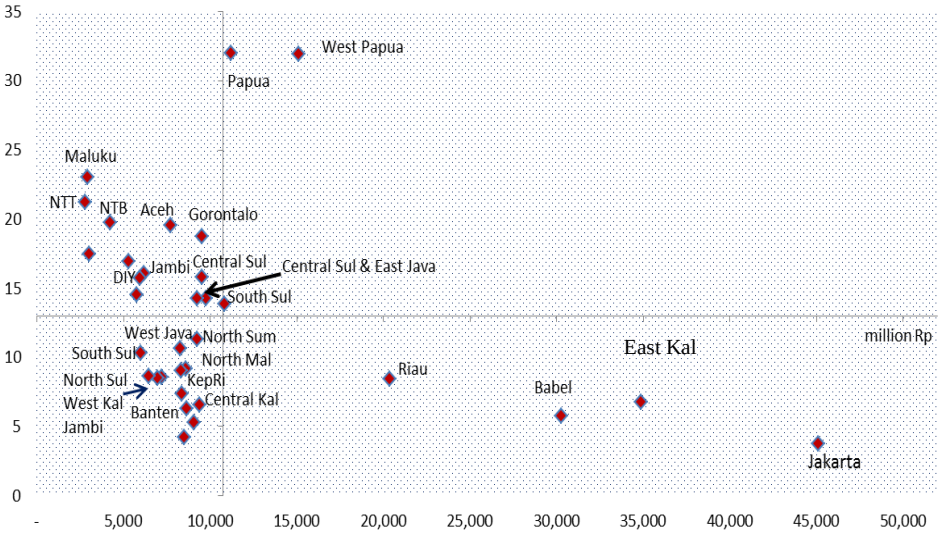
Graph 3. GDP / Capita & Poverty in Provinces 2011 (National Average)



Source : BPS, authors calculation

[12] According to BPS, people are classified as poor people if their montly income percapita below the poverty line.
[13] Periode before the crisis is calculated between 1984 – 1996,
[14] Periode after the crisis is calculated between 1999 - 2012

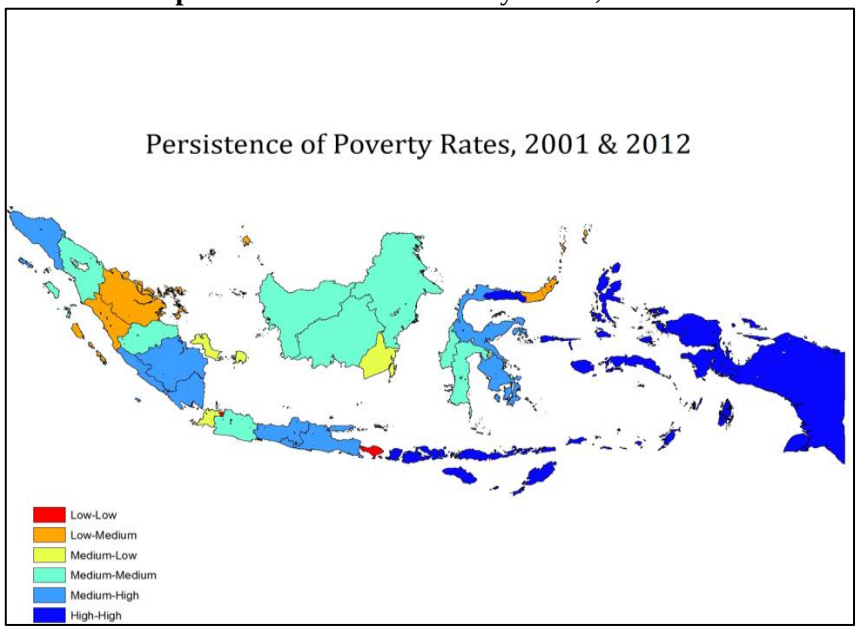
Graph 4. GDP / Capita & Poverty in Provinces 2011 (Provincial Average)



Source : BPS, authors calculation

We also try to analyse the persistence in poverty rates by comparing poverty rates for two points in time in 2001 and 2012. We adopt the approach that used in paper by OECD (Miranti, 2013)[15]. From graph 3-5, we see that Nusa Tenggara, Gorontalo, Maluku & Papua have had persistently high poverty rates in both years. Meanwhile DKI Jakarta and Bali has consistently had low poverty rates when compated with the average. There is three provinces that can move from medium to low category poverty namely Bangka-Belitung, Banten and South Kalimantan.

Graph 5. Persistence of Poverty Rates , 2001-2012

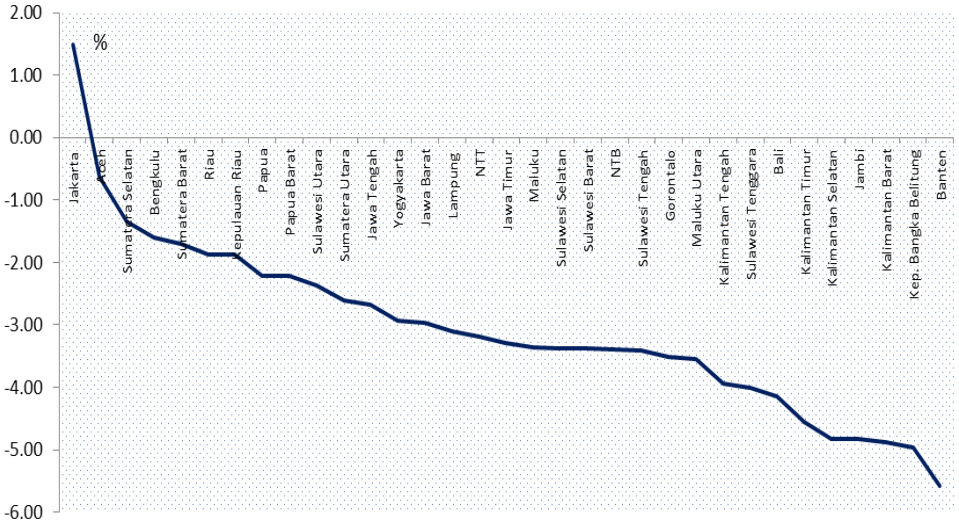


Source : BPS, authors calculation

Graph 3-6 shows the annual change in poverty rates between 2001 -2012. The 3 provinces that experienced the most rapid decline in poverty rates are Banten, Bangka Belitung and West Kalimantan. For DKI Jakarta, where the poverty rate is already low, the overall poverty rate is increasing by 1,5% a year.

[15] This method mentioned in OECD working papers by Miranti et al (2013). The classification divided using standard deviation from the average.Persistence of poverty or Inequality classified as follows:
1. Low = **Pov or Inequality rate** < (Average –Standard Deviation);
2. Medium = (Average –Standard Deviation)≤ **Pov or Inequality rate** ≤ (Average +Standard Deviation);
3. High = **Pov or Inequality rate** ≥ (Average +Standard Deviation)

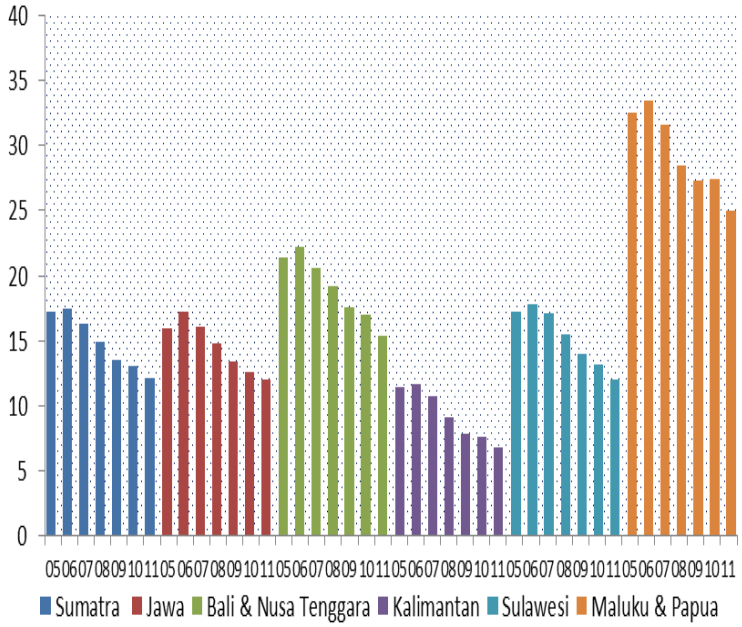
Graph 6. Annualised Change in Poverty Rates (2001-2012)



Source : BPS, authors calculation

In general the poverty has been decline in all regions during periode of 2005 to 2011. The region with the highest poverty is Maluku and Papua followed by Bali and Nusa Tenggara. Region Jawa and Sumatra are relatively similar while Kalimantan has the lowest poverty (Graph 3-7). In general the poverty has been decline in all the regions during periode 2005 to 2011. The problem of poverty inIndonesia is also over shadowed by the presence of"Almost Poor"group that lies slightly above the poverty line and is very vulnerable to become "Poor" group at any timein case of external pressures, such as rising price of basic commodities, fuel price and electricity tariff hike, layoffs (layoffs), social conflicts or natural disasters.

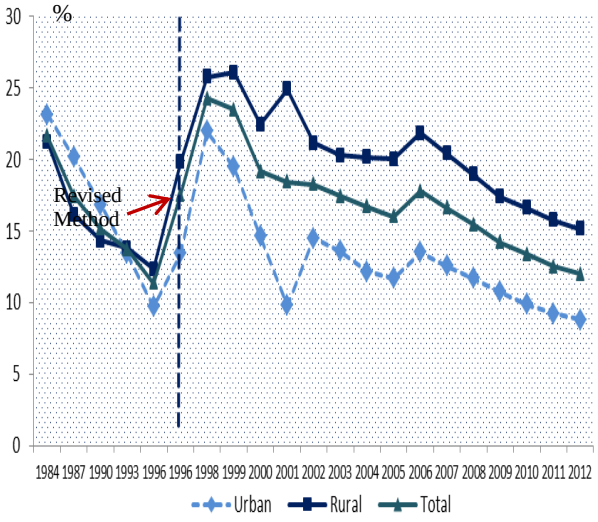
Graph 7. GDP / Capita & Poverty in Provinces 2011



Source : BPS, authors calculation

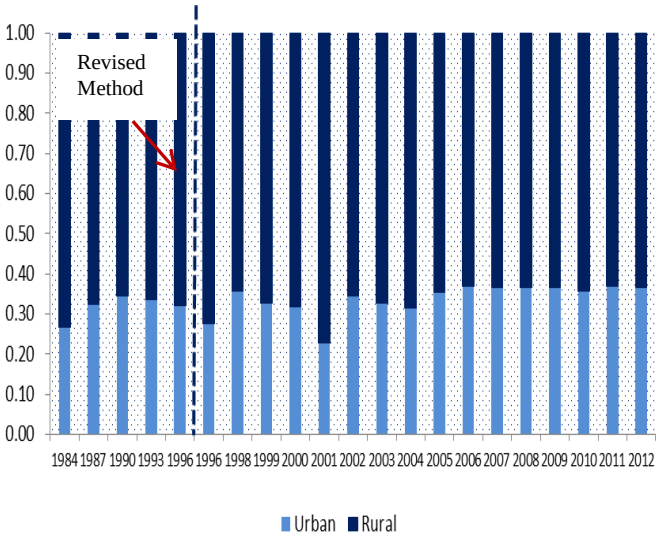
Poverty in Indonesia has been predominantly rural phenomenon especially after the crises. The percentage of poor people in rural area is always higher than that in urban areas (Graph 3-9) and for the last five years nearly 60% or poor people resides in rural areas (Graph 3-10). It seems that there is no significant change in percentage of poor people that resides in rural area for the last 8 years.

Graph 8. Poverty in Rural & Urban Area



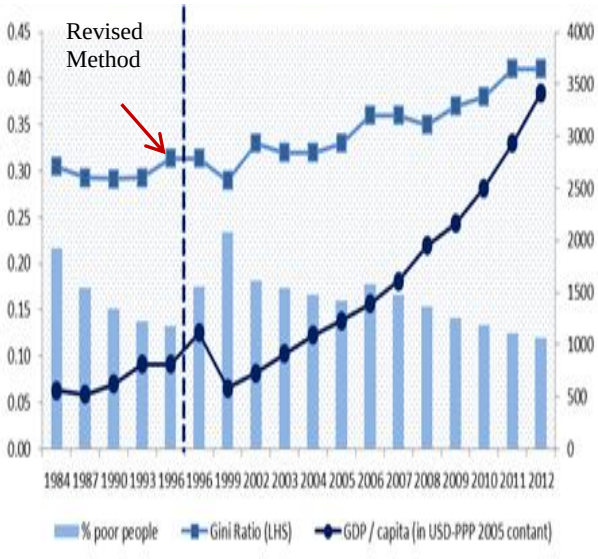
Source : BPS

Graph 9. Share of Poor Population in Rural & Urban Area



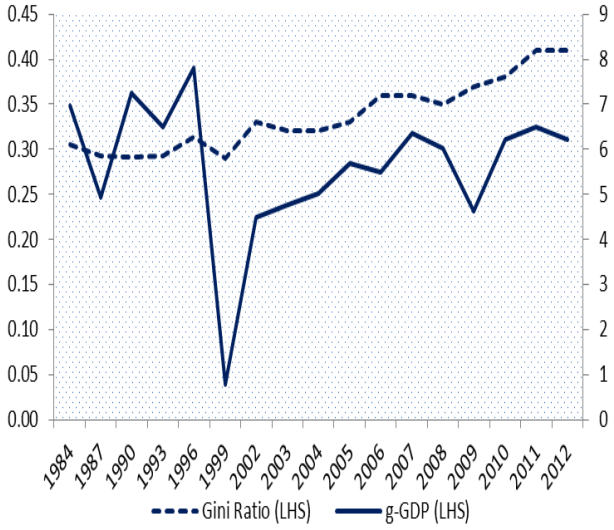
Source : BPS

Graph 10. GDP per Capita, No. of Poor Pople & Gini Ratio



Source : BPS

Graph 11. GDP growth & Gini Ratio



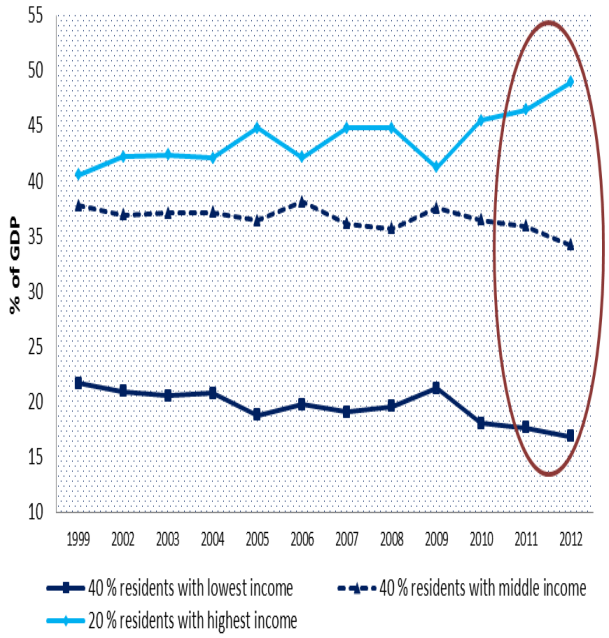
Source : BPS

Although both of the GDP per capita and the number of poor people has gradually increased and decreased respectively after the crises, nonetheless the inequality as indicated by Gini ratio tend to increase (Graph 3-11). The inequality decrease during the period of 1984 to 1987 in line with the decrease of GDP growth. After 1987, gini coefficient relatively stable and began to increase in 1993 to 1996. During this period the economic growth was relatively high, which stood between 6% to 8% (Graph 3-12). The gini ratio then declined as a result of the 1997 Asian Financial Crisis (AFC). Comparing to the period before the crises, the inequality tend to increase for the last decade. There was relatively constancy of the overall Gini index before the crises. It changed very slighty, which was only 0.01 over 12 years (1984-1996). After the crises (1999-2012), the Gini index increases to 0,12 point, ten times higher than the periode before.

Graph 3-13 show the share of national income that is proxied by expenditure of 3 income groups namely the 20% richest households, 40% middle income households and the 40% poorest households. The 20% richest household enjoys in average 44% of income while the middle income households and the poorest households enjoy 37% and 20% of income respectively. For the last 3 years, it seems there is a significant increase in the share of income enjoyed by the 20% richest households, which is accompanied by the decline in income share of the 40 percent poorest household and the 40 percent

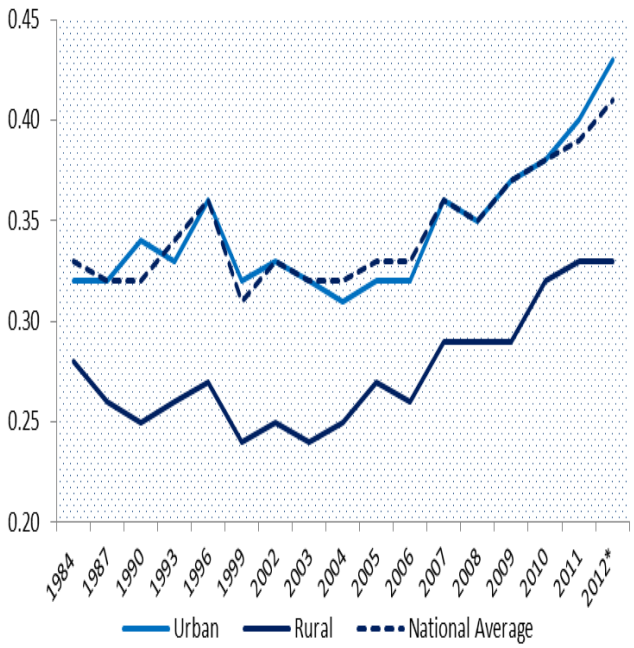
middle-income households. By the end of 2012, the share of income enjoyed by the richest group is 49%, increase from 41% in 1999. During 1999 to 2012, the 20% highest income group has gained 20% additional share while the 40% poorest and the middle income household has loosed income share by 22% and 9,5% respectively.

Graph 12. Share of National Income



Source : BPS

Graph 13. Gini Ratio Urban-Rural -National

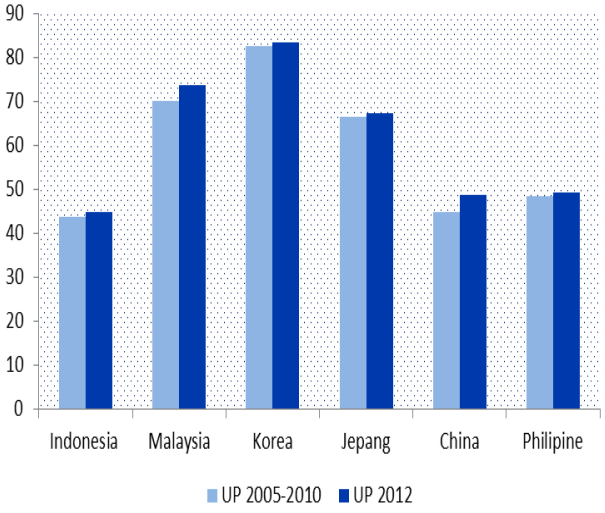


Source : BPS

After Asian Financial Crises (AFC), the domestic economy had been exposed to the volatility of global economic conditions which contributed to the increase of inequality. In late 2005, the hike of world oil prices forced the government to raise domestic oil prices that pushed inflation higher. Inflation reduce the real income income and the impact is worse to low income people compare to the high income one. As a result we see the increase of inequality in 2006 . Later in the period after 2008 , the impact of the subprime mortgage crisis also spread to financial markets in developing countries. Subprime mortgage crisis have triggered a reversal of capital flows in developing countries so that the exchange rate and asset prices fall. In addition, the impact of the subprime mortgage crisis also accompanied by soaring oil prices , followed by a rise in prices of many other commodities . The combination of both of these events caused considerable inflationary pressures to domestic economy which contributed to increase of inequality after 2008.

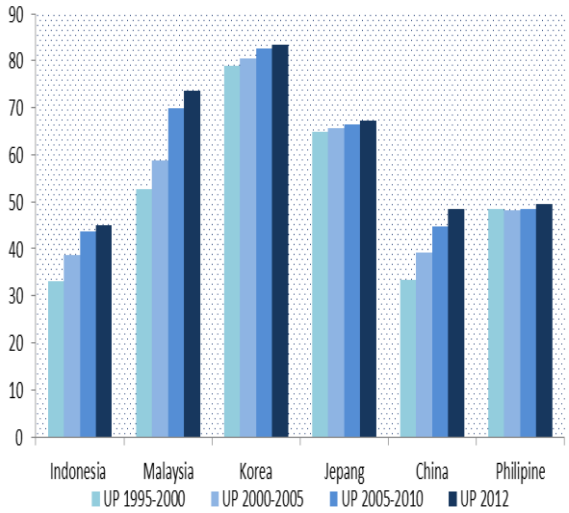
In contrast with poverty which is predominantly rural phenomenon, inequality seemed to be more apparent in urban Indonesia, reaching a level of 0,43 in September 2012, compared to rural areas with a level of 0,33 (Graph 3-14). Both inequality in urban and rural area show an increasing trend. Inequality in urban areas was higher than in rural areas and very close to the national average. The influence of urban gini on the national agregate grew over time as Indonesia's urban population increased rapidly over the last decades.As stated in Kanbur and Zhuang (2013), urbanization contributed more than 50% of the increase in inequality in Indonesia at national level. According to World Bank, Indonesia has grown to become one of the most urbanized country in the region. Based on UN-ESCAP data, the urban population in 2012 was 44,9%. Comparing to average South East Asian countries, urban population in Indonesia is relatively higher (Graph 3-15). The urban population has exceeded the South East Asian average since 1995. According to study by Lewis (2013) , the level of urbanization is positively associated with economic growth. For some rischer countries in Asia like Korea, Japan and Malaysia, they do have high level of urban population (Graph 3-16).

Graph 14. Urban Population Indonesia & Average South East Asia



Source : UN-Escap

Graph 15. Urban Population (UP) of Some Countries



Source : UN- Escap

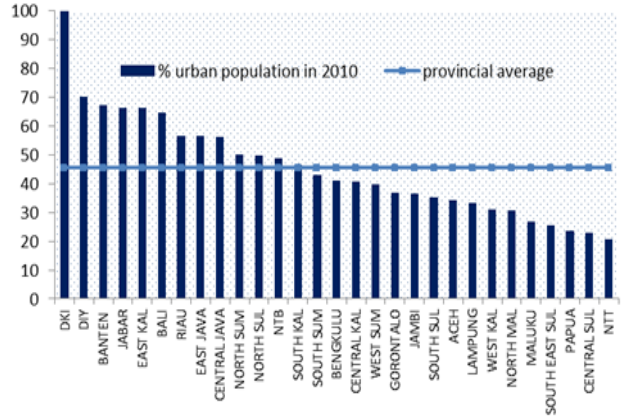
Tabel-1. Inequality in Provinces

NO.	PROVINCE	1984	1996	2008	2012
1	PAPUA	0.37	0.39	0.40	0.44
2	GORONTALO			0.34	0.44
3	DIY	0.34	0.38	0.36	0.43
4	WEST PAPUA			0.31	0.43
5	BALI	0.29	0.31	0.30	0.43
6	NORTH SUL	0.35	0.34	0.28	0.43
7	DKI	0.29	0.36	0.33	0.42
8	SOUTH SUL	0.35	0.32	0.36	0.41
9	WEST JAVA	0.30	0.36	0.35	0.41
10	CENTRAL SUL	0.30	0.30	0.33	0.40
11	SOUTH EAST SUL	0.32	0.31	0.33	0.40
12	RIAU	0.26	0.30	0.31	0.40
13	SOUTH SUM	0.27	0.30	0.30	0.40
14	BANTEN			0.34	0.39
15	SOUTH KAL	0.26	0.29	0.33	0.38
16	CENTRAL JAVA	0.31	0.29	0.31	0.38
17	WEST KAL	0.25	0.30	0.31	0.38
18	MALUKU	0.30	0.27	0.31	0.38
19	LAMPUNG	0.29	0.28	0.35	0.36
20	NTT	0.31	0.30	0.34	0.36
21	EAST KAL	0.36	0.32	0.34	0.36
22	EAST JAVA	0.31	0.31	0.33	0.36
23	WEST SUM	0.26	0.28	0.29	0.36
24	BENGKULU	0.21	0.27	0.33	0.35
25	NTB	0.30	0.29	0.33	0.35
26	KEPRI			0.30	0.35
27	NORTH MAL			0.33	0.34
28	JAMBI	0.20	0.25	0.28	0.34
29	NORTH SUM	0.26	0.30	0.31	0.33
30	CENTRAL KAL	0.29	0.27	0.29	0.33
31	ACEH	0.26	0.26	0.27	0.32
32	WEST SUL			0.31	0.31
33	BABEL			0.26	0.29
	ABOVE AVERAGE	13	10	17	18
	BELOW AVERAGE	13	16	16	15
	PROVINCIAL AVERAGE	0.29	0.31	0.32	0.38

Source : BPS & authors calculation

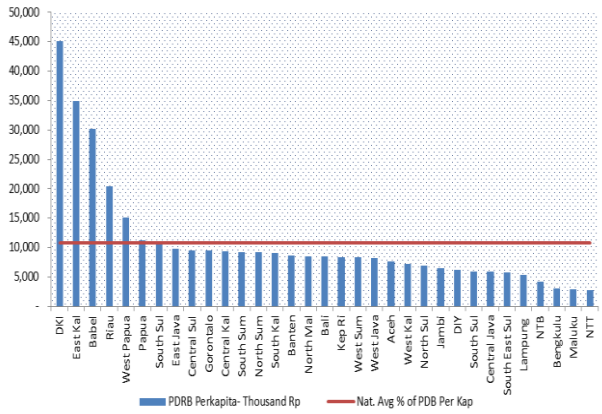
The pattern of rising inequality also occured in provinces. From Table 3-1, we can see that almost all provinces experienced worsening inequality in 2012 compared to 1984, almost two decades before. The provincial average of inequality increase from 0.29 in 1984 to 0,31 in 1996, 0.32 in 2008 and become 0.38 in 2012. There is a significant increase in the provincial average gini ratio from 2008 to 2012 (17,9%), compared to the increase from 1984 to 1996 (4,5%) and from 1996 to 2008 (4,7%). In 1984 the number of provinces that have inequality above national average is 13 and in 1996 it declined to 10 provinces. After the crises, if we take a look in more recent periods of 2008 and 2012, in 2012 there are 18 provinces that have inequalities above national average, increase from 17 provinces in 2008. For the period of 2008 to 2012, Bali, West Papua and North Sulawesi experienced the highest increase in gini coefficient. Among 18 provinces with inequality above national average in 2012, 10 of them are provinces with urban population or GDP per capita above provincial average. Provinces with urban population above provincial average are DKI, DIY, Banten, West Java, Bali, Riau and North Sulawesi (Graph 3-17). Provinces with GDP per capita above provincial average are DKI, Riau, West Papua, Papua and West Sulawesi (Graph 3-18). The high inequality in urban areas occurs because these places can attract large numbers of less skilled people which they think there are more economic opportunity than in rural areas. Meanwhile, there are also high inequality in provinces with high GDP per capita. Except for DKI, those provinces with high GDP per capita have abundance of natural resources. Using provincial average for GDP per capita and inequality (Graph 3-18), we can see there are 4 provinces that have both GDP per capita and inequality above average. Meanwhile there are only 3 provinces (Babel, Riau and West Sulawesi) above average and inequality below average

Graph 16. Urban Population Provinces



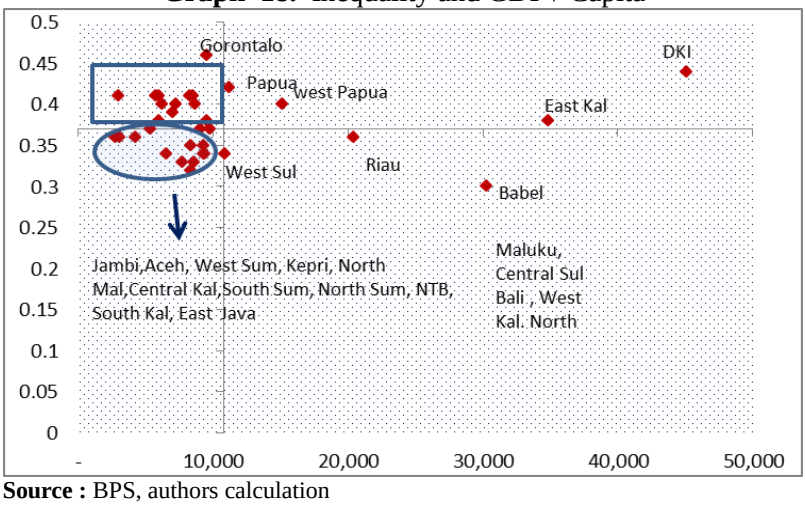
Source : http://www.datastatistik-indonesia.com

Graph 17. GDP / Capita by Provinces



Source : BPS

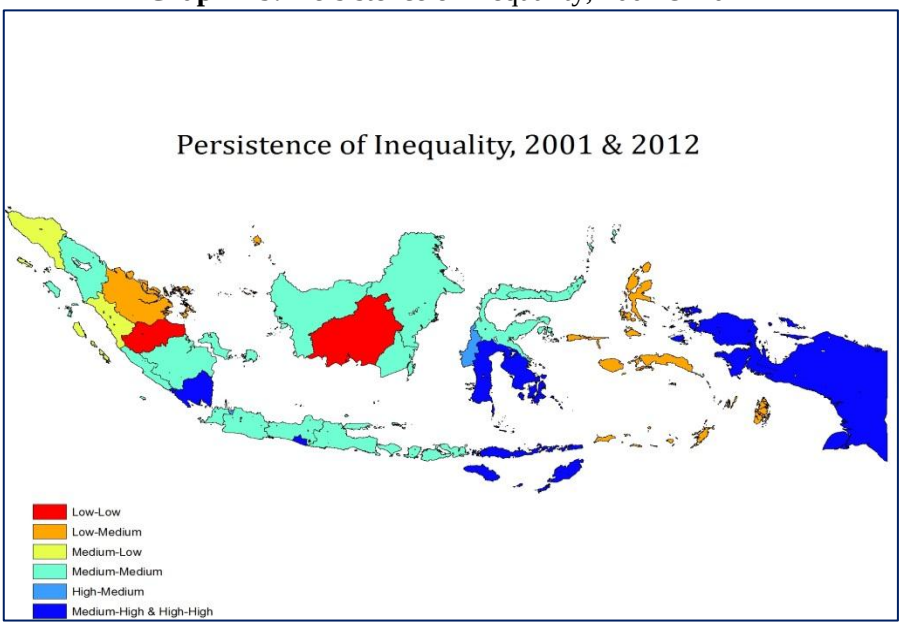
Graph 18. Inequality and GDP / Capita



Source : BPS, authors calculation

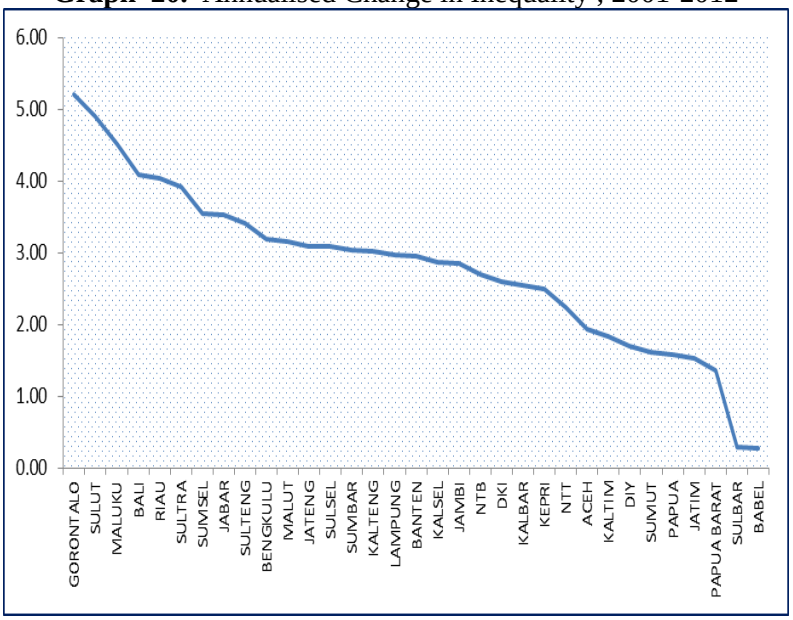
We also adopt the approach that used in paper by OECD (Miranti, 2013)[16] to see the persistence in inequality between two points in time in 2001 and 2012. From graph 3-5, we see that Papua and DIY are provinces with degree of inequality persisted at the same high level for 2001 & 2012. Lampung, NTT, South Sulawesi and SE Sulawesi move from medium to high persistence. Jambi and Central Kalimantan have the less increment of Gini during 2001 -2012, compared to other provinces.

Graph 19. Persistence of Inequality, 2001 & 2012



Graph 3-20 shows the annual change in inequality between 2001 -2012. The 3 provinces that experienced the most rapid decline in inequality are Gorontalo, North Sulawesi and Maluku. For Papua Barat , Papua and DIY where inequality are persistent hight, the annual change in inequality are small. The same pattern also occured for province that have low inequality like Bangka Belitung.

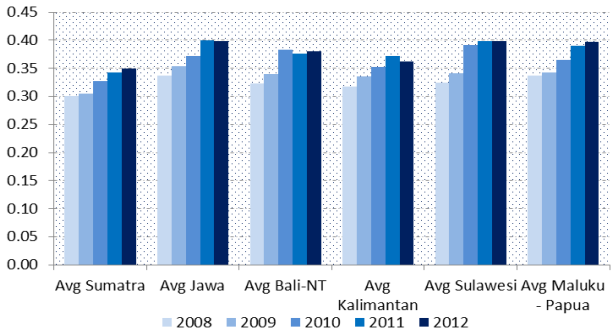
Graph 20. Annualised Change in Inequality , 2001-2012



[16] This method mentioned in OECD working papers by Miranti et al (2013). The classification divided using standard deviation from the average.Persistence of poverty or Inequality classified as follows:
1. Low = Pov or Inequality rate < (Average –Standard Deviation);
2. Medium = (Average –Standard Deviation)≤ Pov or Inequality rate ≤ (Average +Standard Deviation);
3. High = Pov or Inequality rate ≥ (Average +Standard Deviation)

Among regions in Indonesia, Jawa and Sulawesi have the highest economic inequality trom time to time followed by Maluku-Papua, Bali-NTB, Kalimantan and Sumatra.

Graph 21. Inequality Across Regions



From the fact finding above, we can get a rough conclusion for the trend of growth and poverty and inequality in Indonesi : i) poverty has been decreased while inequalities has been increased both by national aggregate and provincial data. 2) the increase in PDB per capita has succeeded in reducing the number of poor people but inequality is keep rising. The increase in inequality for the last five years is higher compared to that in the period of 2 decades before, 3) Higher inequalities mostly occured in the urbanized province or in province with high GDP per capita. Therefore the next question we would like to explore is whether the ongoing increase of inequality follow the Kuznet hypothesis or not.

4. Methodology and Data

There are two (2) question that we would like to explore in this paper : 1) to test whether the Kuznets curve hold true for Indonesia. Is there the increase in current inequality reflecting the process of which Kuznets theory mentioned, 2) to analyze the determinant of inequality.

When testing the Kuznets curve, the functional specification to be estimated is equation (1). This method also applied by Frazer (2006) to test economical Kuznets and Stern (2004) & Lessmann (2011) to test Spatial Inequality and Development.

$$Gini_{i,t} = C + \alpha \ln(Ycap)_{i,t} + \beta\, ln\, (Ycap)^2_{i,t} + \varepsilon_{i,t} \quad \text{.....(1)}$$

Where $Gini_{i,t}$ = income inequality (Gini Ratio) in province i at year t, $Ycap$ = GDP per capita of province i at year t and ln is natural logarithm.

This paper uses dynamic panel method to test for the existence of inverted U shape of the Kuznets Curve. This approach also used in the paper by Li and Zou (1998), Calderon and Chong (2001), Rajan (2004) and Nikoloski (2009)and the specification of the model is :

$$Gini_{i,t} = C + \gamma\, Gini_{i.(t-1)} + \alpha\, ln(Ycap)_{i,t} + \beta\, ln\, (Ycap)^2_{i,t} + \varepsilon_{i,t} \text{.....(2)}$$

Where $Gini_{i,t}$ = income inequality (Gini Ratio) in province i at year t, $Ycap$ = GDP per capita of province i at year t and ln is natural logarithm. Given this model, Arcand *et al.* (2012) and Lind and Mehlum (2010) show that in order to check for the presence of an inverted-U relationship, it is necessary to formulate the following joint null hypothesis :

$$H_0 : (\alpha + 2\beta(Ycap)_{min} \leq 0) \cup (\alpha + 2\beta(Ycap)_{max} \geq 0), \text{ .....(3)}$$

Against the alternative :

$$H_1 : (\alpha + 2\beta(Ycap)_{min} > 0) \cap (\alpha + 2\beta(Ycap)_{max} < 0) \text{ .....(4)}$$

Where $(Ycap)_{min}$ and $(Ycap)_{max}$ are the minimum and maximum values of GDP per capita respectively. The null hypothesis imply a U shape conditions, if either of these are rejected so we can conclude that the regression have a inverted U shaped. The inverted U shape conditions showed in equation 4, which describe that when Ycap still under the maximum value (Ycap still growed untill reach the treshold), the curve will have increasing trend. But then the trend is likely to be reversed (decreased) after Ycap reach a certain maximum value. To verify the inverted-U shape of Kuznets Curve, the signs and magnitudes of α and β should be examine. The Kuznet curve is hold, if $\alpha > 0$ and $\beta < 0$. If it is hold, then we can find the turning point or the maximum point of Kuznet curve using the formula ((Taguchi, 2012) and Tam (2008):

$$k = \exp(-\alpha/(2\beta)) \text{ .....(5)}$$

To test the determinant of inequality, we add control variables to the equation (2). The estimation that use additional control variables also applied in research by Nikoloski (2009) and Frazer (2006). and the specification of the model is :

$$Gini_{i,t} = \gamma Gini_{i.(t-1)} + \alpha \ln(Ycap)_{i,t} + \beta ln\,(Ycap)^2_{i,t} + \delta Z_{i,t} + \mu_i + \varepsilon_{i,t} \text{ .....(6)}$$

Where $Gini_{i,t}$ = income inequality (Gini Ratio) in province i at year t, $Gini_{i,(t-1)}$= the one period lagged dependent variable, $Ycap$ = GDP per capita of province i at year t and $Z_{i,t}$ represents a vector of 1 or more control variables.

As Kuznets theory mentioned, during the process of growth, there is a movement from low productivity agriculture to more productive sectors such as manufacturing and services. In order to control for the gradual shift towards industry and manufacturing, we use the share of agriculture sector and manufacturing sector to total GDP. We also use urban population as variable control based on the hypothesis that the shifting from low productivity sector to more productive sectors, in the first place will benefit the urban people. There has been also some research that has tapped into the relationship between inflation and inequality. Yitao (2011)[17] finds that inflation can significantly widen the income gap at the national level. In this paper inflation are used in order to gauge the impact of macroeconomic volatility on inequality. Using inflation and GDP riil per capita together in one model seemingly can raise potential colinearity issue. But according to Baltagi (2005), this issue can be addressed by dynamic panel model. Yitao (2011) and Son (2010) also using GDP riil per capita together with inflation in one model to estimate relationship of that variable on inequality. Their paper present the estimation result when one of that variable dropped in order to check the impacts of a potential colinearity issue, the result shows only a slight difference[18]. To accomodate the issue of human capital to inequality, we add variable lschool. The complete specification of data and the expected sign is presented in the Table 4-1.

Tabel-1. Data Specification

Variabel	Note	Source	Expected Sign
Gini	Gini ratio	BPS	(+)
Ycap	GDP per capita real	BPS	(+)
Ycap2	Square of GDP per capita real	BPS	(-)
CPI	Consumer Price Index with base year 2007	BPS	(+)
Pop	Share of urban population over total population	BPS	(+)/(-)
S.Agriculture	Share of agricultural sector to total GDP	BPS	(+)
S.Industry	Share of manufacturing sector to total GDP	BPS	(-)
Lschool	Number of students from elementary school to higher education (University	BPS	(-)

All data are converted to logarithm except for gini and cpi.

In order to alleviate endogeneity and unobserved heterogeneity problem, this paper uses **System GMM (GMM-SYS)** which is dynamic panel technique proposed by Arellano and Bover. This method using instruments in first differences for equation in levels and instruments in levels for equations in first differences. The GMM-SYS technique estimates the dynamic panel model for both levels and first differences, as level equations are simultaneously estimated using differenced lagged regressor as instruments. This process therefore has the advantage of controlling for individual heterogenity.

The unobserved heterogeneity problem can thus be effectively resolved by estimating first difference aquations. The GMM method not only employs lag term ($Gini_{i.(t-2)}$) and difference ($\Delta Gini_{i.(t-2)}$) as instrument variables but also uses additional instruments obtained by utilizing the orthogonal conditions that exist between the disturbances and the lagged values of the dependent variable. This method makes a progress in utilizing instrumental variables in the dynamic panel analysis for lagged dependent model, Arrelano and Bover found that compute the original level variable equation along with the difference equation as instrument can improves the efficiency of the estimation (Son, 2010). Furthermore, the two-step GMM estimators, which use one-step residuals to construct asymptotically optimal weighting matrices, are more efficient than one-step estimators (Blundell and Bond 1998 stated in (Yitao, 2011)).

[17] Zhou (2009) mention in Yitao Jiang et al (2011)

[18] That slight difference lends evidence to the effectiveness of the dynamic panel model in controlling colinearity bias (Baltagi, 2005)

The first differenced endogenous variables of inequality ($Gini_{i,t}$) with lagged can be a valid instruments provided that there is no second order autocorrelation in the idiosyncratic error terms using Arellano Abond test. If there is autocorrelation, it implies that the lagged variables used as the instrumental variables are in fact close to endogenous variables, not exogenous. Since the first degree of autocorrelation in the variable implies the second degree of autocorrelation in the error terms in difference equation ($\Delta\ \varepsilon_{i,t} = \varepsilon_{i,t} - \varepsilon_{i,t}$), we can check the error terms autocorrelation using Sargan's test.

This dynamic panel method to test the relationship between inequality and growth is found in Nikoloski (2009), Calderon and Chong (2001), Li and Zou (1998), Son (2010) as well as Diego (2011).

5. Empirical Result

Table 5-1 present the dynamic panel GMM estimation results for whether kuznets curve hold true for Indonesia (equation 2). The two-step GMM-SYS method lends us promising solution to the unobserved bias and endogeneity issue in estimating equation 2. This method estimates both levels and first difference equations for equation 2. The unobserved heterogeneity problem can thus be effectively resolved by estimating first differences equations, whereby the time invariant disturbances are eliminated. Also the extensive instrument variables (lag gini ratio) utilized in this method can solve the endogeneity and even some other model specification problems.To estimates the model in this paper, we conducted a two-step systematic GMM (GMM-SYS) that have met the criteria of best model. In Verbeek (2004), criteria for dynamic panel models with the best GMM approach is the validity of the instrument and the consistency. Based on the methodology of the system-GMM estimator, for each regression, we test the specification of equation with the sargan test of over-identifying restrictions, and then with the Arellano-Bond test for the second order serial correlation. The test results show that all the regressions satisfy the specification tests, which indicates that our instruments are valid and there exists no evidence of second order serial correlation in our regressions.

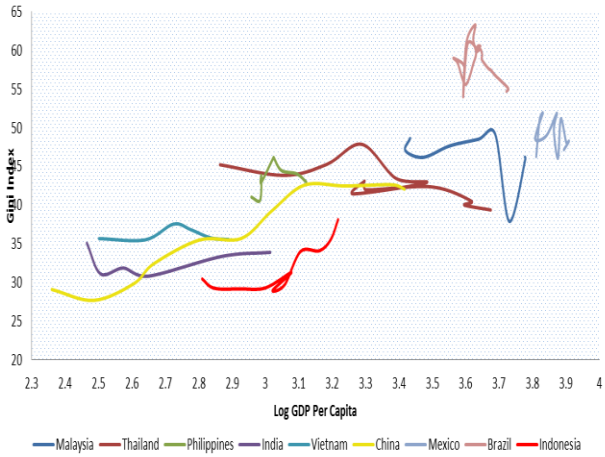
As seen in table 5-1, we find evidence of the existance of inverted-U shaped Kuznets Curve in Indonesia. In our model, GDP per capita and the squared term of the GDP per capita enter the equations with the expected sign (GDP per capita is positive while the squared term is negative).In term of model robustness, the first criteria that we check is consistency. It can be seen from the results of the Arellano-Bond (AB), the test is rejected at order 1 using 10 percent level of significance because p-value= 0.0689 and at order 2 errors indicate serially uncorrelated because p=0.2060 > 0.05. Thus statistically it shows that the model is good enough. The second criteria is validity of the instrument and the Sargan test show the unsignificant p-value=0.5904, which means the instrument is valid.

Tabel-1. Dynamic Panel SYS-GMM estimation of Kuznets Curve Hypothesis

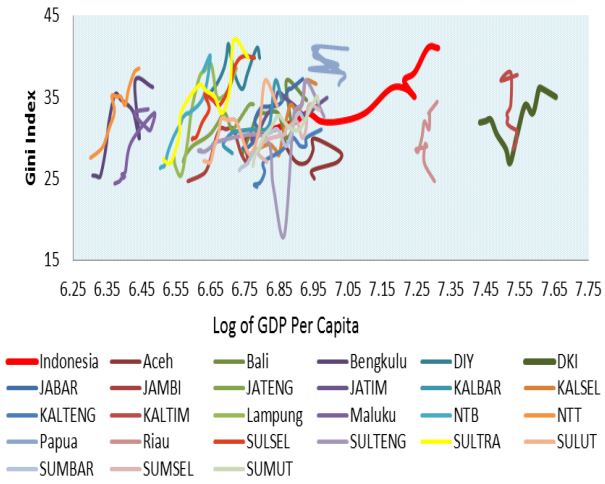
Gini Ratio	**Estimated Coefficients**	**Standard Error**	**P>|z|**
L.Gini Ratio	0.7524	0.1303	0.000
YCap	0.0262	0.0107	0.014
$YCap^2$	-0.0013	0.0007	0.042
Constanta	-0.0320	0.0750	0.669
Arellano Bond Test	z	Prob > z	
Order 1	-1.8190	0.0689	
Order 2	-1.2645	0.2060	
Sargan Test	chi2(11) =	25.68395	
	Prob > chi2 =	0.5904	
Turning Point	$= \exp(-\alpha_2/(2\alpha_3))$	(179,41 million)	

After verify that inverted-U Kuznet Curve does hold in Indonesia then the turning point of Kuznets Curve can be examined. Table 5-1 shows the result that Indonesia may have the turning points when the real GDP per capita in each provinces reached 179.41 million rupiahs. From this evidence we can conclude that with 7 percent growth each year and macro-stability is maintained well, it will take at least 25 years to reach the turning point.

Graph 5-1. Kuznets Curve of Some Countries



Graph 5-2. Kuznets Curve of Indonesia Provinces



Graph 5-1 show a plot of Kuznets curve in some countries using log GDP per Capita and Gini Index. Indonesia and India seem still in the first stage of development according to Kuznets hypothesis where increasing in GDP per Capita accompanied by increasing in inequality. Meanwhile, the plot for Brazil and Mexico seem not linear and more complex. In empirical fact, after burst of economic growth in the middle of last century and reaching middle income group for forty to fifty years[19] (income group classification by world bank[20]), Brazil and Mexico experienced something like a middle-income trap and have yet to progress to advanced-economy status. For Malaysia, the plot appear like inverted S curve. If seen from the current finding facts, Malaysia has reached middle income category since fourty years ago, but Malaysia not falling yet into middle income trap categories.

Tabel-2. Dynamic Panel SYS-GMM estimation of Kuznets Curve Hypothesis

Gini Ratio	**Estimated Coefficients**	**Standard Error**	**P>|z|**
L.Gini Ratio	0.1850	0.0179	0.000
YCap	0.1566	0.0298	0.000
$YCap^2$	-0.0015	0.0000	0.000
Pop	0.0696	0.0340	0.041
CPI	0.0005	0.0000	0.000
Schooling	-0.0604	0.0100	0.000
S.Agriculture	0.0415	0.0167	0.013
S.Industry	-0.0343	0.0049	0.000
Arellano Bond Test	z	Prob > z	
Order 1	-1.9176	0.0552	
Order 2	-1.4867	0.1371	
Sargan Test	chi2(11) =	24.83771	
	Prob > chi2 =	0.1660	

When we see closer to the level of province in Indonesia, it can be seen from Graph 5.2 that almost all provinces in Indonesia are experiencing the rising inequality which is in line with the national movement. For provinces with higher GDP per capita than provincial average such as Jakarta, Riau and East Kalimantan, it's clear that increasing GDP per capita is in line with the increase of income inequality.The result for estimation of determinan of inequality is presented in Table 5-2. All the independent variables are significant with signs as expected. The coefficients of Lag Gini Ratio are positive and significant at the 1 % level for regression which suggest strong support for dynamic effect of inequality in the model. Indeed, higher past levels of inequality are associated with higher current levels of inequality. Lagged levels of Gini Ratio are positive significant at 1 percent which show strong positive

[19] This fact are mention in Economic Insight Middle Income UBS.

[20] World Bank divided countries into 4 income group categories based on income per capita. The groups are : Low Income country with income per capita $1,035 or less; lower middle income $1,036-$4,085; upper middle income $4,086-$12,615; and high income country with income per capita $12,616 or more.

correlation between past and present values of gini ratio. We also find evidence of the existence of inverted-U shape Kuznets Curve after add some control variables. The coefficients GDP per capita and the squared term of the GDP per capita showed signs of the inverted-U shape and are significantly different from zero. The model also met the robustness criteria of consistency and validity of instruments.

We find strong evidence that percentage of urban population are associated with higher level of inequality. This happens because in the early stages of development, economic development comes with increasing urbanization and inequality. Increasing returns of industrial activities, decreasing transport costs and labor mobility generate the concentration of workers and economic activity in the urban sector, allowing higher urban wages. As people and resources are reallocated from agricultural activities towards industrial activities, this process leads to increasing inequality, as higher incomes are perceived in urban areas compared to rural areas. Both, higher inequality and higher urbanization favor the concentration of production factors necessary for growth, and this concentration itself reinforces labor´s reallocation from the rural towards the urban areas (Ross, 2000) & (Castells and Royuela, 2011). This finding are similar with Kanbur and Zhuang (2013), his empirical evidence show that higher urban population in the early stages of development in Indonesia will raise inequality, his paper also show that Indonesia hasn't reach the turning point yet. For Indonesia, the current composition of urban population is around 47 % which is still far than the predicted turning point at 84.9 %. That finding shows that Indonesia still have many years to go for national inequality to peak even if urban and rural inequalities and the urban-rural income gap stay constant. From this empirical evidence, it is useful to know that shifting population from the rural to urban sectors, holding all other factors constant will increase national inequality for Indonesia in the early stages of development.

We also find that higher inflation are associated with higher inequality. Inflation can increase inequalities through its effect on individual income and can reduce inequalities in the presence of progressive tax system. The inequality widening effect of inflation is more pronounced when wages fail to chase increasing price levels. In developing countries, trade unions are weak and minimum wage laws are dysfunctional in the presence of weak institutions. Thus, workers are left with less or no rise in wages, while owners of the firms enjoy benefits of rising prices and get further rich (Majeed, 2010).

From empirical result, this paper also find that education have negative impact on income inequality. This result convince the theory that education is widely seen as one of the most efficient ways to reduce inequality (Meschi and Scervini, 2012). Education provides greater economic opportunities especially to the poor because it determines occupational choice and the level of pay and it also a signal of ability and productivity in the job market. Education shifts the composition of the labour force away from unskilled to skilled. Better educated individuals are perceived to be better able to cope with technological that directly influence productivity levels which is need by Indonesia as low middle income country to move to higher level economy.

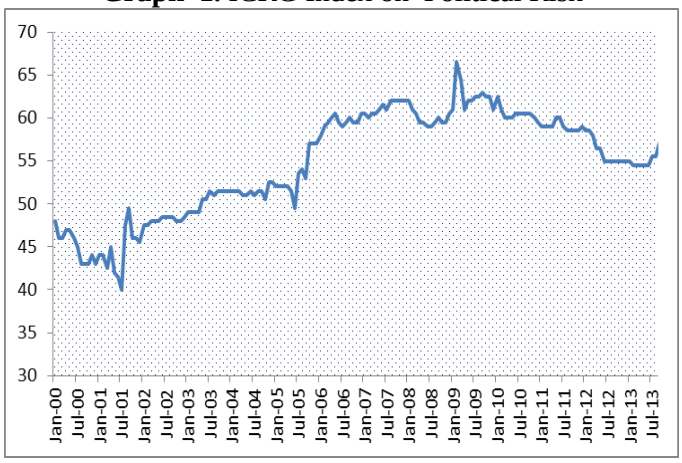
As Kuznets theory mentioned, during the process of growth, there is a movement from low productivity agriculture to more productive sectors such as manufacturing and services. We find some support for Kuznets' original suggestion that changes in the structure of production provide a mechanism through which development affects inequality. The share of agriculture in total GDP is significantly related to the pattern of inequality. Higher share of agriculture in total GDP associated with higher inequality. As the modern sector expands, it absorbs larger proportions of the labor force into high income employment, thus reducing the pressure of population in the traditional sectors and thereby narrowing inter-sector income differentials. The empirical result of this paper also find that the share of industrial sector over total GDP have negative significance effect to income inequality. This result show that, a rising share of the modern sector (mainly the manufacturing industry) in terms of GDP makes income distribution inequal in the early stages of economic development. As kuznets theory mention before, the process of development is supposed to be accompanied by a rise in the shares of the non-agricultural sectors and a corresponding fall in the share of the agricultural sector in total output.

6. The Near Term Risk of Increasing Inequality

The increase of inequality in the process of economic growth as been stated by Kuznets is a common problem. Inequality is expected to decrease after a country achieve a certain level of GDP per capita.The increase of inequality however has some risks that have to be anticipated in the near term. One of the important factors that have significant impact to inequality is inflation. High inflation shrinks the worker's real income and makes them worse off. The price of basic commodities that continue to rise made workers can barely enjoy their wages. As the result street protests that demand for higher minimum wages are almost a regular occurrence in big cities lately because the increase in it is not comparable with

the increase of inflation. The protest alsodemandsfor the abolitionof outsourcing worker inthe company. This is somewhat understandablebecause theyarebigenoughgapof employment protectionand facility between outsourcing and permanent workersuch ashealth insurance and holiday allowances. There are often cases that outsourcing workers get stuck in situation where they move between temporary work and unemployment without getting into permanent work. They can loose their jobs easily which could impact their income. New OECD analysis finds that low income workers on temporary contracts earn less than workers with similar characteristics on permanent job (Fournier and Koske, 2012) If the inflation problem and gap between permanent and outsourcing worker persists then the mass labor protest is predicted to be more frequent. This will contribute to **the strained industrial relations**, which could give negative impact to investment climate. Therefore the government should strive to maintain real wages of worker and to minimize the gap.

Graph 1. ICRG Index on Political Risk



Another near term risk of rising income inequality is **political and social instability** Increasing income inequality may motivate the lower income people to engage in crime, riots and other disruptive activities. This growing unequal condition can also easily be used by un-liable parties to use street protest in asking for policy changes instead of using dialogues. The increasing risk of political and social instability would reduce incentives to invest and hence impair growth . Graph 6-1 shows the ICRG index on political risk. The higher the index the lower political risk. Political risk tend to increase lately especially after 2008. This is in line with the trend of gini ratio that also increasing after 2008.

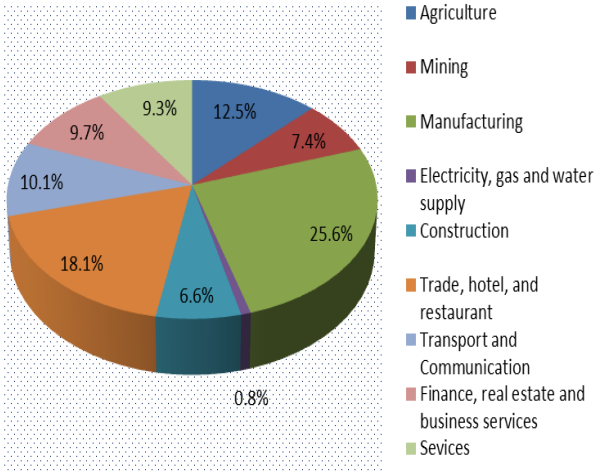
The growing inequality would increase the gap between rich people and poor people in access to the assets that generate income and the most important in today's global information age is the assets of education. The empirical results shows that access to higher level of education has negative and significant impact to inequality. This means that secondary education is not enough to improve the income of the low income group. Therefore in the near term there would be the risk of **increasing human capability gap**. In the long run this human capability may reduce the potential growth rate.

The recent financial risis has highlighted how volatility associated with global capital market can have a significant negative impact to domestic economy. The high inflows of capital can generate inflationary pressure and during the bust, with capital outflow may weaken exchange rate which also give pressure to imported inflation. As been stated in Albanesi (2006) and empirical result in this paper, inflation will increase inequality. The increase of inequality therefore will **increase the vulnerability of the poor to global shocks** in the near term.

7. Policy Option to Ensure Sustained and Equitable Growth

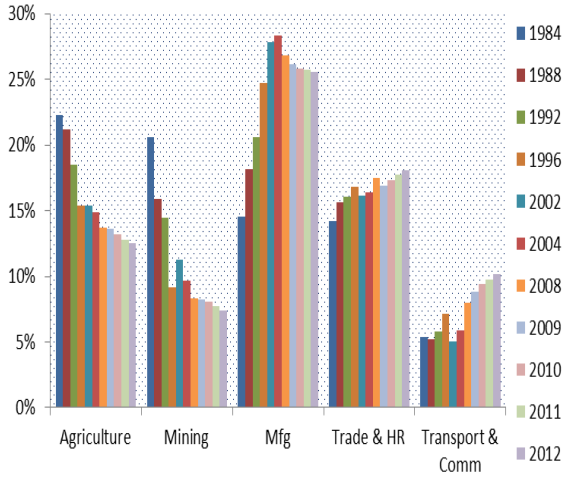
The empirical result of the model show that the turning point of GDP per capita is Rp.179,41 million or equivalent to 18.000 USD. It means that inequality will keep on rising in line with the path to achieve the expected income per capita. In order to come to that level of income, we have to maintain a sustainable growth. In other word, the growing inequality is acceptable with the assumption that the process of industrialization is sustainable. If we see from the graph ... the share of industrial sector to the total GDP by the end of 2012 is still dominated by manufacturing sector (Graph 7-1), however the growth is likely to slow down for the last 5 years. The role of manufacturing sector increased rapidly during the period of 1980 to 2004, afterward it begin to decline.

Graph 1. Share of GDP in 2012



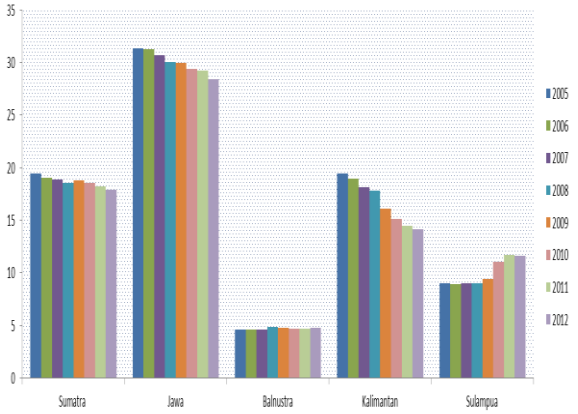
Source : BI – DSta

Graph 2. Share of Sectoral to GDP



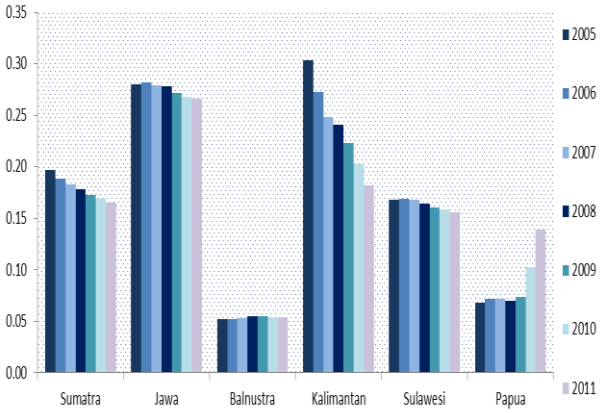
Source : BI-DSta

Graph 3. Share of Industrial Sector in Region to Total GDP



Source: BI - Dsta

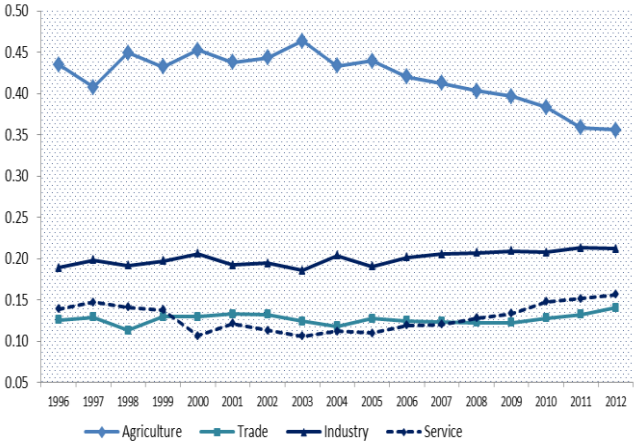
Graph 4. Share of Industrial Sector in Region to Total GDP without oil and gas



Source: BI - DSta

Symptoms decreasing role of industrial secto rcan be seen in most regions except for Balnustra and Sulampua, although in Balnustra is close to constant. The decline in Kalimantan even sharper if we use the share to total GDP without oil and gas. Maryaningsih (2012) mentioned in their paper that in general, the majority of companies in the industrial sector has not been paying too much attention to R & D aspects. Around 74% of total 22.757 companies that responds to BPS survey have low inovation capacity and capability. While 21% of the companies can be classified as moderate and only 5% of the companies have ahighinnovationcapacityandcapability.

Graph 5. Share of Sectoral Employment



Contrary to the share of manufacture sector to GDP, the employment in manufacturing sector is increasing. However, the increase of employment in industrial sector is not as fast as the decrease of employment in agriculture sector. For the last 3 years, the share of employment in service sector has already been higher than the share of trade sector. The increase of employment in manufacturing sector that accompanied by pressure of higher wages but on the other hand does not followed by improving productivity may reduce competitiveness of Indonesian manufacturing product.

The decline of manufacturing sector performance is related to the problem of decreasing labour productivity and low competitiveness in the manufacturing sector. The main cause of the weakening productivity is low support of innovative capacity and technological enhancement in this sector as a whole[21]. Both of these aspects are determined bythe availability of qualified human resources and research and development activities (R & D). Maryaningsih (2012) find that the majorities of company in the industrial sector has not paid attention specifically to the research and development activity. Among 16.851 companies that had been surveyed, 74% can be categorized as companies with low innovative capacity, 21% categorized as moderate and only 5% categorized as high. The ability to innovate related to the companies' ability to compete in international market through export activity. Export activities mostly conducted by companies with high innovative capacity (49% of high innovation company) whereas from low innovation companies, only 15% exports their products. Based on its area, high innovating firms that export its product majority located in Java as they are supported by relatively better infrastructure compared to other provinces and the availability of human capital.

In this regard, the structural transformation policies, that are more powerful than existing policies are necessary to improve performance of the manufacturing sector. To improve its competitiveness, the government should pick potential industries to be groomed as the superior industries. Henceforth, the Government should support research and development activities of these industries so they can compete in the international arena.

The other important factor to increase industries' competitiveness is by improving quality of infrastructure. The availability of good infrastructure will help companies to produce efficiently and avoiding unnecessary additional cost. The development and quality of infrastructure should be evenly distributed throughout Indonesia, both in Java and outside Java. Development and quality of infrastructure should be evenly distributed throughout Indonesia, both in Java and outside Java. Furthermore, it is important for BI as the central bank to maintain a stable macroeconomic condition. Low inflation and a stable exchange rate will enable companies to operate more planned and efficient

In addressing poverty and economic inequality, the government has been promoting social policies. There are several definition about social policies. Marshall (1965) defines social policy as a part of public policy and also primarily refers to guidelines and interventions for the changing, maintenance or creation of living conditions that are conducive to human welfare by providing social services and financial. Huttman (1981) define social polity as a plan of action and strategies for providing services and dealing with social problem especially in terms of human welfare. OECD report on social policy in Indonesia define social policy into 3 part namely education policy, health policy and social protection policy. Meanwhile Asian Development Bank (ADB) define all social policy in Indonesia as social protection policy , which is the set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labor markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and interruption/loss of income.

The social protection policy in Indonesia according to ADB can be categorized into 3 policies namely Social Assistance, Social Insurance and Labour Market Program. *Social assistance*, which encompasses public actions which are designed to transfer resources to groups deemed eligible due to deprivation. Deprivation may be defined by low income, or in terms of other dimensions of poverty (e.g. social or nutritional status). Social insurance is social security that is financed by contributions and based on the insurance principle: that is, individuals or households protect themselves against risk by combining to pool resources with a larger number of similarly exposed individuals or households. Including health and pension insurance, unemployment benefits, work injury insurance and disability grants.Labor Market Programs is social policy which are design to help employment through loan-based programs, labor exchanges and other employment services, unemployment benefits, skills development and training –

[21]Ministry of Industry of Republic Indonesia, 2010. Revitalisasi industri yang Didukung oleh Reformasi Birokrasi. Report Rapat Kerja Tahun 2010. Available from http://www.kemenperin.go.id/.[Accessed 5 Juli 2013].“ Revitalisasi Industri yang Didukung oleh Reformasi Birokrasi”, Rapat Kerja Tahun 2010.

included if at particular groups (e.g., the unemployed or disadvantaged children. The summary of social protection policy in Indonesia since 2000 is presented in Tabel 7-1.

Tabel- 0.1. Social Protection Policy in Indonesia

Fiscal Year	Social Insurance	Social Assistance	Labour Market Programs
2000	JPS-BK	OPK	JPS-B,JPS-DBO
2001	JPS-BK	OPK, BKM	-
2002	PKPS-BBM	RASKIN, BKM	-
2003	PKPS-BBM	RASKIN, BKM	-
2004	PKPS-BBM	RASKIN, BKM	-
2005	PKPS-BBM	RASKIN, BLT, BKM, BOS	-
2006	ASKESKIN	RASKIN, BLT, BKM, BOS	-
2007	ASKESKIN	RASKIN, BSM, BOS, PKH	
2008	ASKESKIN	RASKIN, BLT, BSM, BOS, PKH	FSP, PNPM
2009	ASKESKIN	RASKIN, BLT, BSM, BOS, PKH	FSP, PNPM
2010	JAMKESMAS	RASKIN, BSM, BOS, PKH	FSP, PNPM
2011	JAMKESMAS	RASKIN, BSM, BOS, PKH	PNPM
2012	JAMKESMAS	RASKIN, BLSM, BSM, BOS, PKH	PNPM

Law No 40/2004 is an important step in the history of social protection in Indonesia because for the first time, the Indonesian Government stipulates a social security program that covers all Indonesian citizens, including formal and informal sector workers, the unemployed and the poor (Bappenas).The social protection policy safety net involved four strategies namely i) ensuring the availability of affordable food, ii) improving household purchasing power through employment creation, iii) preserving access to critical social services particularly health and education and iv) Sustaining local economic activity through regional block grants and the extension of small-scale credits.

Improving human capability is the key aspect in ensuring sustainable growth as well as equitable growth. The empirical result of this paper also shows that higher education contribute significantly to reduce inequality. Currently, basic education is not enough to enable Indonesia to compete with other countries in this globalization and innovation era.

Government policy in education has been started since the New Order era. During The New Order era, The Government introduced Inpres Primary School in 1974 which is policy to increase primary school enrollment rate and decrease illiteracy rate in order to improve human capital. The New Order era also famous for the 5 year development plant program named Repelita. The jargons for the Repelita is trilogy of development which consist of growth, equality and stability. There were 8 paths to equality and one of it, is access to education.

After the New Order era and the 1998 crises, government policy to improve human capability can be categorized in Social Assistance Program. Indonesia has social safety program net named JPS (Jaring Pengaman Social) which also included a targeted scholarship system for poor students enrolled in primary and secondary education. The programme was introduced at the beginning of the 1998-1999 schoolyear and was maintained for five years. The main aim of the programme was to safeguard access to education for vulnerable groups, which most adversely affected by transitory income losses related to economic crises. During 2001-2005, a targeted scholarship programme (BKM)[22] was introduced using part of the budgetary savings arising from lower fuel subsidies. BKM was downsized in 2005 and in part replaced by BOS for Elementary and Junior High School Level, which was intended to protect the poor from further reduction in their income due to the government cut of oil subsidies by increasing domestic oil prices in. It also aims to compensate the school's loss of income due to the government policy waiving school fees of poor children enrolled at the elementary and junior school level, in both private and public schools. BOS consists of per student block transfer [23] and funds are disbursed directly to school. These programs support the government's goal in achieving the Nine-Year Compulsory Basic Education Program[24].

As of the fiscal year of 2007, The BKM program was replaced by Poor Student Asistance [25](BSM). BSM is a direct fund assistance to student that based on their economic condition not on their study

[22]BKM (Bantuan Khusus Murid) = Student Special Assistance, Source : TNP2K
[23]BOS (Bantuan Operasional Sekolah)=Operational School Assistance, Source : TNP2K
[24]Program Wajib Belajar Sembilan Tahun, Source : TNP2K
[25]BSM (Bantuan Siswa Miskin)= Poor Student Assistance, Source : TNP2K

performance.BSM is designed to help poor people in obtaining their education needs that are not covered by BOS program. The BSM program is given to student from elementary to junior high school level. For university students from low income family that have academic capability but with economic limitation, government provides scholarship named Bantuan Belajar Mahasiswa Miskin and Bidikmisi.

Other program that also introduced in 2007 was Family Hope Program (PKH)[26], which is a conditional cash transfer program and addressed to very poor families and for the family members who received cash transfer should meet the obligatory terms and conditions that have been set. In the education sector, the goal of PKH is to improve access and quality of education of PKH participant. Assistance is given in the full amount if the participant meet its obligations, which is attendance at the school.

As been stated before, education up to secondary level is not enough to improve equality. The current government program seem to still focus on basic education. In this regard, the government should increase the access of low income people to higher education.

A good health is one of the contributing factors to create a good quality of human resources. One of theflagship programs in the health sector in the New Order was the construction of Puskesmas (Public Health Centers) evenly throughout Indonesia. The presence of Puskemas enable the low income people to obtain health care from paramedics.

After The New Order Era, government policy to improve public healthcare can be categorized as Social Insurance Program. In 1998 to 2001 the government launched Social Safety Net Programs in Health named JPS-BK[27], which was financed with a loan from the Asian Development Bank (ADB). This program is launched to avoid further deterioration in the health status of poor families due to the impact of 1997 economic crises.

In order to reduce the burden on low-income communities due to rising fuel prices and economic condition after crises that has not been recovered, the government introduced Compensation Program due to Fuel Subsidy Reduction in the Health Sector[28]. Health service that can be enjoyed by the poor with this program include maternity services and eradication of communicable disease as well as the provision of additional meals (PMT) for infants and pregnant women. The PKPS-BBM program was stopped in 2005.

A first step towards meeting universal health insurance began in 2005 with the introduction of the Health Insurance for the Poor (Askeskin) program. Askeskin is a subsidized social health insurance for the poor and the informal sector. This scheme covered basic healthcare in public health clinics and hospital inpatient care. In this paper we investigate. The Askeskin health insurance program was introduced with the objective to expand social security to the informal sector, aiming at a target population of 60 million people. (Smeru,) mentioned that although it was initially the intention to cover private health services as well, only a third of the private healthcare providers accept Askeskin insurance.

To ensure access of the poor to health services, in 2008 the government has established Public Health Insurance[29] (Jamkesmas). Jamkesmas is a social insurance program for health care for the poor and near-poor. The goal of the program is to improve access of the poor and nearly poor to obtain health services. Jamkesmas is being extended to cover the entire targeted population of 93 million very poor, poor and near-poor individuals. Beneficiaries are identified by the local authorities. The authorities intended *Jamkesmas* beneficiaries to be accepted by both private and public health care providers, but only about one-third of private hospitals currently do[30]. In addition to publicly provided program, there are health insurance programs, which is privately financed program. Insurance for the civil servant is provided by Askes, for police and armed forces by Asabri and for private sector employee by Jamsostek.

To improve public health programs and to ensure it is accessable by public in need, the government needs to expand the outrage of a hospital or health institution can receive a health card program, social security and health insurance. Besides, the Government should oblige companies to insure their employees both for the permanent workers and outsorcing worker the the standard scope of service.

Macroeconomic policies are a core element of inclusive growth to reduce inequality. Maintaining price stability in the form of low inflation and adequate policy responses to shock and crises is important

[26] PKH (Program Keluarga Harapan) = Family Hope Program, Source : TNP2K

[27] JPS BK (Jaring Pengaman Sosial Bidang Kesehatan)

[28] PKPS BBM-BK : Program Kompensasi Pengurangan Subsidi Bahan Bakar Minyak Bidang Kesehatan = Compensation Program due to Fuel Subsidy Reduction in the Health Sector

[29] Jamkesmas = Jaminan Kesehatan Masyarakat

[30] Based on OECD Report, 2010. Report on the attribution of profits to permanent establishments. Available from http://www.oecd.org/ctp/transfer-pricing/45689524.pdf [Accessed 23 Juli 2013].

to manage the purchasing power of the poor. With the low inflation, low income people are ensured there is availability of affordable food for their basic needs.

To protect the poor especially regarding equality for access to staple food, In the New Order Era, the government established BULOG to control rice price, and distribution. This body also had authorization to import rice. In 1969, BULOG was given additional responsible to manage rice buffer stock. During the New Order era, the government also intensified several program to enhance food self-sufficiency.

During the crisis period in 1998, the government introduced the subsidized rice scheme through Special Market Operations (OPK)[31] which targeted pre-prosperous and poor people. This program was conducted by BULOG. BULOG distributed low quality rice at subsidize price. In 2002, the government changed the name of this program to "Rice for The Poor"[32] to make it more well targeted. Rice for Poor Families program (Raskin) is a dedicated food subsidies for poor families as an attempt to improve food security and provide protection for the poor. This program aimed to reduce the burden of poor household by fulfilling the needs of staple foods and prevent further loss of energy and protein consumption. With the rename of the program, it is expected that untargeted people would be ashamed to buy rice with subsidized price.

Policies to raise subsidized fuel prices will cause a spiralling effect on inflation and affect low-income communitie significantly. Therefore the Government has always sought to minimize the impact of rising subsidies fuel prices to purchasing power of the poor, In 2005, in compensating the potential negative impact of reduction in fuel subsidy toward the poor, the government introduced BLT (bantuan langsung tunai), an unconditional cash transfer to enhance the financial liquidity of poor households. The program is targeted to poor households according to BPS standard. In 2013, due to the increase of domestic oil price, government launched Temporary Direct Social Assistance Program[33] (BLSM)

The effort to maintain low inflation needs a collaborative work from both authorities that can control inflation from both the demand side and supply side. In this regards BI initiate the establishment of TPID or regional inflation control team. TPID role is to look at the risk of inflation in the region. In the future, it is expected TPID could enhance its role by improving coordination to perform a variety of policies, especially to address the structural problems in order to increase economic capacity, mitigate the risks of potential supply disruptions as well as to manage expectations of inflation in line with the achievement of low and stable inflation for the benefit of the wider community.

Social assistance program in the form of cash transfer either conditional or unconditional is important to manage purchasing power of the poor. However the most important thing is how the government can create a decent and productive jobs.This is because work is a central aspect of people's well-being. It is not only their main source of income, but also a source of human dignity and sense of self-worth, determining social relations and shaping identities[34].

Although manufacturing sector offer promising growth potensial of employment creation to reduce inequality, nonetheless in the transition period government should continue to support for agriculture sector. This sector remains as the major source of income and work for a majority of the poor.

8. Conclusion

1. Trend of Poverty and Inequality :
   - ✓ Poverty has been decreased while inequalities has been increased both by national aggregate and provincial data.
   - ✓ The increase in PDB per capita has succeeded in reducing the number of poor people but inequality is keep rising.
   - ✓ The increase in inequality for the last five years is higher compared to that in the period of 2 decades before.
   - ✓ Higher inequalities mostly occured in the urbanized province or in province with high GDP per capita. Almost all provinces experience decreasing trend of poverty but increasing of inequality.
2. The study indicates that Kuznets curve hold in Indonesia. It seems that the current increasing trend of inequality is expected to continue.

[31]OPK = Operasi Pasar Khusus
[32]Raskin = Beras untuk rakyat miskin
[33] BLSM = Bantuan Langsung Sementara Masyarakat
[34] UN Report 2012 Accelerating progress towards the Millennium Development Goals

3. Percentage of urban population, inflation and share of agricultural sector contributed to the increase of inequality while high level education and share of industrial sector are associated with lower level of inequality.
4. Structural transformation policies, that are more powerful than existing policies is needed to maintain competitiveness and sustainability of industrialization process.
5. Policy options to ensure sustained and equitable growth should cover :
   - ✓ maintaining macroeconomic stability
   - ✓ Improving human capability through education
   - ✓ Improvement in total social benefit for low income people / worker to protect their quality of life
   - ✓ Policy suport for agriculture sector in the transition periode.

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