



**PRO-POOR GROWTH IN INDONESIA:
Community Driven Development Approach**

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Disclaimer:

This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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List of Acronyms

BKM	Badan Keswadayaan Masyarakat (Self-Reliance Agency)
BPS	Biro Pusat Statistik (Statistics Indonesia)
BLT	Bantuan Langsung Tunai (Direct Cash Assistance)
CBO	Community-Based Organization
FEM	Fixed Effect Model
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
HCI	Head Count Index
ISS	Institute of Social Studies
KSM	Kelompok Swadaya Masyarakat (Self-Help Group)
OLS	Ordinary Least Square
PJM	Pembangunan Jangka Menengah (Medium Term Development)
PNPM	Program Nasional Pemberdayaan Masyarakat
PS	Pemetaan Swadaya (Mapping Organization)
REM	Random Effect Model
RT	Rukun Tetangga (Neighbourhood Association)
UNDP	United Nation of Development Program
WB	World Bank

Abstract

Poverty is a scourge for development of a country. Besides inhibiting the economic growth, poverty may also cause multidimensional problems. Thus, to solve poverty matters, many governments attempt to promote poverty alleviation programs in their countries. Currently, Community-Driven Development (CDD) Program has become one of the systems which is often practiced by developing countries in order to manage the poverty rate. Its basic concept is very simple. It empowers the communities, especially the poor, to unleash them from the shackles of poverty. In Indonesia, the government implements CDD Program through the so-called Program Nasional Pemberdayaan Masyarakat (*PNPM*) as the basis of the poverty reduction campaign. In its implementation, *PNPM* program requires the poor communities to get involved in such actions as participation in planning, implementation, monitoring and evaluation of the programs.

A study of the success of the *PNPM* to eradicate poverty was conducted shortly after the program was launched in 2007. The results of the latest studies suggested that the *PNPM* will likely be able to reduce the number of poor people in Indonesia. Nevertheless, after running for several years, the program was terminated by the new regime at the beginning of 2015. Departing from this issue, this study aims to investigate the effectiveness of *PNPM* as a means of alleviating poverty. Since most of the previous studies only focused on certain areas, this research paper is trying to formulate the role of *PNPM* at the national level. This study has come up with a conclusion that the *PNPM* is a workable instrument to achieve pro-poor growth, the growth which favours the poor. By limiting the definition of poverty in absolute terms, any increase in the *PNPM* funds, accompanying the economic growth, will likely reduce poverty more.

Relevance to Development Studies

Poverty, inequality and economic growth become the centre issue in the development studies. The Millennium Development Goals (MDGs) concerns the alleviation of “one dollar a day” poverty during 1990 to 2015. However, the progress of the poverty reduction has not shown a significant result. For this reason, many scholars try to formulate the most appropriate concept and strategies for poverty alleviation. This study will examine whether community driven development program (*PNPM*) is the best way to increase the economic growth which focuses on the poverty reduction. Hence, the result of this paper is expected to give a contribution on the development studies which are capable of providing suggestions for the government about the most appropriate policy to boost the pro-poor economic growth.

Keywords

Poverty, Community-Driven Development, *PNPM*, Pro-Poor Growth

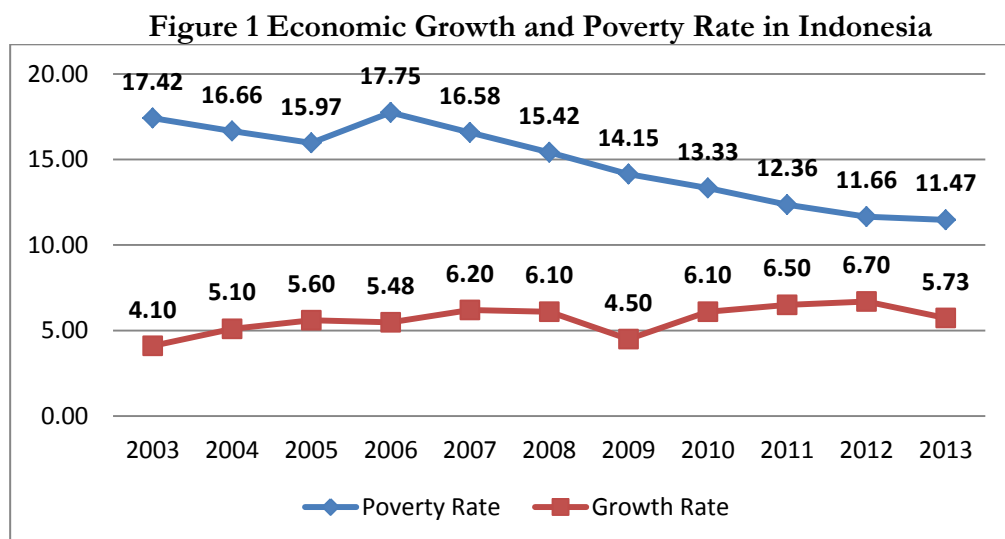
Chapter 1

Introduction

1.1 Background

In the last few decades, mainstream economists believe that successful development has mostly been measured by economic growth. High economic growth indicates that the living standard of most population is improving. However, growth sometimes benefits only certain groups, especially the rich. Data Statistics Indonesia (2010) shows that economic growth in Indonesia is 5.6% (2005) and 6.1% (2010). This means that between 2005 and 2010, economic growth only increased by 0.5%. Nevertheless, the strong growth was not well distributed across the society. It is seen from the Gini Coefficient Index, which also increased from 0.36% in 2005 to 0,41 in 2010. This fact means that the high economic growth has led to a new problem i.e income inequality because the growth has not been able to boost the well-being of poor people.

Mirroring from that issue, policy of development strategies are no longer concerned only with the economic growth but also the economic growth which favours the poor – called “pro-poor” growth. Dollar and Kraay (2002) in their paper focus on the role of economic growth to alleviate poverty. They argue that growth will be good if poverty reduction becomes the main goal of the strategies. Furthermore, Kakwani and Pernia (2000) in their research state that “trickled down” development becomes an emerging issue between 1950s and 1960s. “Trickled down” theory means the development will be followed by a vertical flow of wealth to the poor people automatically. The rich will enjoy the advantage of the economic growth first and then the poor will start to benefit at the subsequent stage. Therefore, analyzing the economic growth must be in line with the effort to diminish poverty.



Source: Statistics Indonesia (2013), processed by author

The graph above depicts the national economic growth and poverty rate in Indonesia. Generally, the economic performance of Indonesia increased gradually, which was accompanied by the reduction of poverty rate. Roughly, it can be concluded that

the economic growth in Indonesia benefited the poor. However, it only happened at the national level. Because Indonesia consists of 33 provinces, each of which has a unique and different characteristics, the relationship between the economic growth and the poverty rate at the provincial level can be varied.

Table 1. Provinces of Indonesia Based on the Growth Rate and Poverty Reduction Rate

		Growth Rate	
		Above the Average	Below the Average
Poverty Reduction Rate	Above the average	West Sumatera, North Maluku, East Java, South East Sulawesi, Lampung, West Nusa Tenggara, Gorontalo, Maluku, West Papua	NAD, Papua
	Below the average	DKI Jakarta, Bali, South Kalimantan, Center kalimantan, Jambi, North Sulawesi, West java, South Sulawesi, Riau Archipelago, West Sulawesi, Center Java, Bengkulu, Center Sulawesi, North Sumatera	Bangka Belitung, East Kalimantan, Riau, West Kalimantan, South Sumatera, DI Yogyakarta, East Nusa Tenggara

Source: Statistics Indonesia (2013), processed by author

From the data in 2012, the average of the economic growth rate was 6.47% while the average of the poverty reduction rate was 0.92%. The table categorizes the provinces into four groups: above the average of the growth rate and above the average of the poverty rate, below the average of the growth rate and above the average of the poverty rate, above the average of the growth rate and below the average of the poverty rate, below the average of the growth rate and below the average of the poverty rate. The concern is provinces which have high growth rates also have a low poverty reduction rates. It is a sign that the high economic growth in those regions did not favour the poor. In other words, the economic growth was not pro-poor growth.

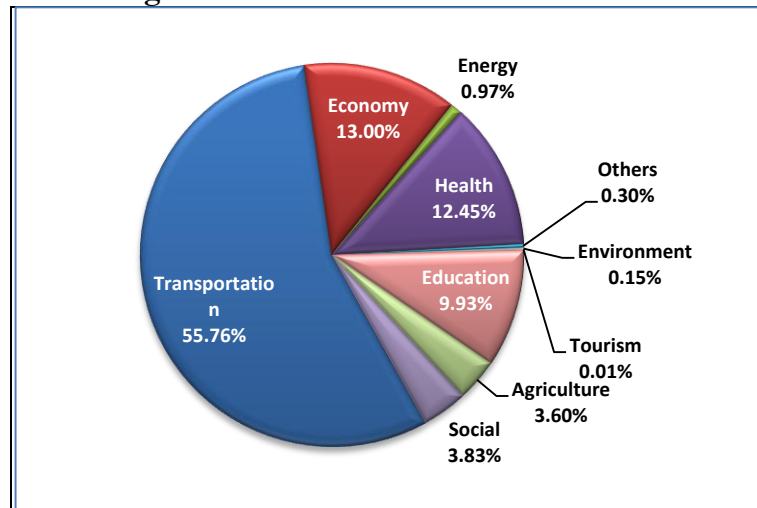
After examining the strong relation between the economic growth and the poverty reduction, the next task is to find the right policies to generate pro-poor economic growth. Since 2007, the Indonesian government has been promoting the National Program for the Community Empowerment (PNPM Mandiri). PNPM is a community development program which has concern on the poverty reduction in each of Indonesian province. The program encourages small-scale projects by focusing on community empowerment to boost the development of rural and urban areas. This program emphasizes the importance of communities' participation and initiatives in promoting sustainable development which in turn will help the poor to escape poverty.

Based on the consideration that Indonesia consists of many provinces with various characteristics, the role of the local people in the poverty reduction program is very crucial. It is because only the local people understand the real condition of their region and the exact needs to reduce poverty. Consequently, in the PNPM program, they are encouraged to participate in the planning, action and monitoring of the program. By taking the community-based development and empowerment, PNPM is expected to enhance the national economic performance which relies on the participation of the poor people.

The basic concept of the PNPM is community empowerment. The program consists of two forms: Direct Cash Assistance (Bantuan Langsung Tunai) and Training

Assistance. The allocation of the Direct Cash Assistance is based on the number of population and the number of poor people in the region. Besides the cash assistance, the program also gives trainings, both soft and hard skills, to enhance the capability of the local people. By getting the assistance, the bargaining power of the poor people would raise, which may help to pull themselves out of poverty.

Figure 2. Realization of PNPM fund



Source: Simpadu (2015), processed by author

The PNPM fund is derived from State Budget (APBN), Regional Budget (APBD) and debt from the World Bank. In 2013, the program had been implemented in 6.752 districts and 496 municipalities. The funding can be used to finance various projects in many sectors, depending on the needs of the region. Based on the 2013 data, most of the PNPM fund was allocated for the transportation project. The rest was utilized to finance the economic sector (13%), health (12.45%), education (9.93%), social (3.83%), agriculture (3.60%), environment (0.15%), others (0.30%) and tourism (0.01%).

The infrastructure sector in Indonesia becomes the basic needs for development especially in the transportation sector. World Bank (2013) confirms that transportation plays a big role as a booster for economic development. Adequate transportation is a requirement for both international and domestic business and trade. Good transportation system and infrastructure may solve goods and service distribution issues. It also ease the people to move easier from one region to another especially to get the basic needs such as clean water, nutritious food as well as health and education facilities. Based on that consideration, transportation becomes the priority project of PNPM fund in most provinces. It is expected that the community driven development program (PNPM) would help the region to have the basic foundation which is very crucial for advance development. Further, the result of development would be able to press the number of poor people.

Considering the importance of PNPM to build the foundation for development which can lift the poor from poverty threshold, there are many studies about the impacts of community driven development programs to reduce poverty. Based on the papers, the results show debatable conclusions. Some of them agree that the PNPM becomes a tool to reduce poverty, while some others reveal the opposite conclusion. Rahim (2014) observed the implementation of PNPM program in Maluku province

from 2008-2012. The result affirms that the PNPM does not have a significant effect to poverty alleviation. On the other hand, Syukri (2013) who conducted the research in three provinces: East Java, West Sumatera and South East Sulawesi reveals that the community driven development program such as PNPM has successfully influenced the poverty rate.

According to those studies, most of the studies about community driven development were only carried out in certain provinces. They focused on the particular regions probably because the program was initiated differently for each region. Moreover, the limitation of data also becomes the constraint to conduct the research broadly. In this paper, the effectiveness of PNPM program to reduce the poverty will be examined in all Indonesian provinces and not only in parts of the region. Thus, it could provide comprehensive findings of the role of PNPM to reduce poverty since PNPM is the flagship for national poverty alleviation program.

As an excellent poverty alleviation program, PNPM puts poverty reduction as the main goal of the project. This program is also supported by the World Bank through loan and technical assistance. However, since 2015, the government of Indonesia has stopped the program even though it has not been known exactly whether the program can boost the pro-poor economic growth. The output of this study is expected to give suggestions for the government to continue the program if the findings conclude that the PNPM program plays a significant role to draw people out of poverty.

1.2 The research objective and Specific Research Question

1.2.1 The research Objectives

The objectives of this research are:

- 1) To evaluate the effect of PNPM program in reducing the level of poverty and the changes of poverty rate.
- 2) To examine whether PNPM program would be able to reduce poverty (using three different measurements of poverty rate i.e headcount index, poverty gap and percentage average income of 40% poorest)
- 3) To investigate whether the PNPM influenced growth is pro-poor or not.
- 4) To show the policy implication whether to continue the program or not

1.2.2 The Main Research Question

Is the economic growth of Indonesia which is supported by the National Program for the Community Empowerment (PNPM Mandiri) categorized as a “pro-poor” growth?

1.3 Scope and Limitation

This study examines whether the PNPM program is an appropriate policy for alleviating poverty. The data used are panel data which include provincial level data for the whole 33 provinces in Indonesia and annual data during seven-year research periods from 2007 to 2013. It is because the PNPM program started from 2007 until 2014. At the beginning of 2015, the program was stopped by the government. Hence, the result of this study is expected to provide suggestions for the government to continue the program if the result reveals that the PNPM is a pro-poor policy.

This research paper limits the definition of poverty as an absolute poverty. Thus, the measurement of the pro-poor growth can be seen by the elasticity of the poverty

rate. The selection of head count index variable is based on the following considerations. 1) The Indonesian government uses the head count index to capture poverty condition periodically. It is considered to better capture the standard of living for a certain region than the 1\$ or 2\$ per day poverty line. 2) The available data are limited at the province level, and 3) the measurement of the pro-poor growth would be easier by using the absolute poverty.

In terms of unemployment, the data used to describe it are the percentage of open unemployment. Based on the Statistics Indonesia, open unemployment is the percentage of unemployment number over the labour force. The unemployment itself is defined as the number of people who work continually at least one hour per day in the last week.

1.4 Data and Methodology

The data sources of this research are the Statistics Indonesia (BPS Indonesia) and the State Ministry of Development Planning. The data from the Statistics Indonesia consist of economic growth, gini coefficient, population, unemployment rate, secondary school enrolment rate and GDRP on agricultural sector in province level, while the data from the State Ministry of Development Planning are realization of PNPM fund per province from 2007 until 2013.

Because the study works in the panel data, statistical methodologies that will be used are Ordinary Least Square (OLS), Fixed Effect Model (FEM) and Random Effect Model (REM). It will also employ the Hausman test and Chow test to determine the appropriate model.

1.5 Chapter Scheme of Research Paper

The paper is organized as follows: section 1 provides the introduction to give the explanation about the background and brief description of the paper. Section 2 describes the literature review which becomes the theoretical and empirical bases for this research. Section 3 serves the overview of poverty in Indonesia and the correlation to the growth, inequality, labour market, human capital and agricultural sector. Section 4 explains the data, methodology and the empirical result. Finally, section 5 comes up with the overall conclusion.

1.6 Contribution to the Literature

There have been a number of studies which investigate the effectiveness of PNPM program to reduce poverty. One of the researchers who had worked on this issue was Rahim (2014), and he conducted a research in Maluku province. However, most studies only focus on the sub-programs of PNPM and merely deal with certain regions in Indonesia. Hence, they are not able to provide a comprehensive conclusion about the performance of PNPM program. Furthermore, this research is meant to contribute to the poverty development studies in the national level because the paper includes data sourced from all provinces in Indonesia. Since PNPM is the government's flagship in poverty alleviation program, this study would be valuable to assess the feasibility of the policy. Hopefully, by utilizing a wider range of data, the best policy to address the poverty problems can be obtained.

Besides that, in pro-poor growth studies, most of the previous researches did not really involve specific policies. They only examined the efficacy of economic growth in general, towards the government's efforts to eradicate poverty. These studies have been done by Hasan and Quibria (2002), who worked in East Asia, Sub-

| Saharan Africa, Latin America and South Asia, and also Priyarsono and Hajiji (2009), who held their study in Riau province. Different from the preceding analysis, this study concerns more with the evaluation of PNPM implementation. Further, it also investigates the performance of PNPM policy to promote the pro-poor growth in Indonesia.

Chapter 2

Theoretical Framework and Literature Review

This chapter is divided into four sections. The first includes some definitions of poverty and pro-poor growth from different perspectives. The second one discusses the measurement of poverty and pro-poor growth based on absolute and relative method. These first two sections will supply us with a basic understanding about the limitation of this study, which only focuses on the poverty and pro-poor growth definition in absolute terms. The third section points out the mechanisms in which CDD can decrease poverty level. Finally, this chapter ends up with empirical evidences about the fruitfulness of CDD as a leading program for poverty eradication

2.1 Definition

2.1.1 Definition of Poverty

The basic understanding of ‘poverty’ is lack of income and asset to meet supplies of basic needs. However, ‘poverty’ is defined differently by some world organizations, such as World Bank, United Nation of Development Program (UNDP) and Statistics Indonesia. World Bank (2005) describes the poverty as follows:

“Poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not knowing how to read. Poverty is not having a job, is fear for the future, living one day at a time. Poverty is losing a child to illness brought about by unclean water. Poverty is powerlessness, lack of representation and freedom”.

From the above definition, World Bank is not only emphasizing the poverty on economic dimension, but also on other sectors, such as human capital and political situation.

In line with the World Bank, UNDP also considers the poverty as a multidimensional problem. They include the poverty in the Human Poverty Index, which comprises three basic components; longevity, literacy and living standard. Longevity, which measures the probability to survive, correlates to life expectancy at the age 40. Literacy, which measures the education rate in the society, is captured by the percentage of adult literacy. Lastly the living standard stresses on the basic needs such as health, clean water supply, nutritional adequacy for children and HCI.

Statistics Indonesia (BPS, 2003) defines the poverty based on the minimum basic needs assigned by the Poverty Line. The minimum basic needs consist of food poverty line and non-food poverty line. The food poverty line is the minimum rupiah someone spends to obtain a daily consumption of 2100 calories, while the non-food basic needs is related to the minimum budget needed for clothing, housing, health and education. Due to different living standards between provinces, the BPS periodically announces the poverty line of each province for both rural and urban areas. Hence, the number of people who live below and above the poverty line can be calculated.

2.1.2 Definition of Pro-Poor Growth

Pro-poor growth can be defined by two different approaches, absolute and relative. According to absolute approach, the simple concept of pro-poor growth is the growth which can reduce the poverty. Ravallion and Chen (2001) confirm that the growth will be called pro-poor growth if the poor get the beneficial impacts from the growth. To know whether the poor enjoy the growth or not, it can be measured by looking at the reduction in the number of poor people. They argue that the growth and poverty move in the opposite direction. If the economic growth shows strong performance, thus the poverty decreases, and vice versa.

Based on the relative approach, the growth is categorized as a pro-poor growth if the growth can boost the income of the poor faster than that of non-poor people. It means that the gap between the poor and the rich is getting smaller, or in the other words, the income inequality is eroded. Kawkani and Pernia (2000) reveal that the pro-poor growth is the growth which is accompanied by the reduction of income inequality and alleviation of the poverty. They also describe that the government should implement an appropriate policy which accommodates the poor, and ensure that the poor benefit from the growth proportionately higher than the non-poor do.

2.2 Measurement

2.2.1 Measurement of Poverty

There are two ways to measure the poverty, which are based on the absolute and relative approach. The absolute approach focuses on the poverty line as a threshold of poverty, while the relative approach stress on the distribution of income.

2.2.1.1 Absolute Approach

The measurement of poverty using absolute method is based on the minimum basic needs which are determined by the poverty line. The people who live below the poverty line are categorized as poor-people as they are incapable of gaining a decent life. According to Nallari et al. (2011), due to the different standard of living among regions, the poverty line is also varied. Further, Soubottina (2000) confirms that rich countries tend to have a high poverty line. This is due to the fact that the standard of living in wealthy countries is higher than that of others.

In line with this thought, the World Bank determines the poverty line by using US\$ PPP (Purchasing Power Parity), not the exchange rate of US\$. The PPP is useful for comparing poverty levels across the countries. In Indonesia, the Statistics Indonesia (BPS) has its own threshold of poverty. The comparison of poverty line between World Bank and Statistics Indonesia is as follows:

Table 2 Poverty Line and Poverty Rate in 2006

Source	Poverty Line (per day)	Poverty Rate
Statistics Indonesia	Rp. 5.066,57 US\$ 1.55 PPP	17,8
World Bank	US\$ 1 PPP Rp.3.240,60	7,4
	US\$ 2 PPP Rp.6.481,30	49

Source: Statistics Indonesia (2011)

Using the poverty line as a benchmark, the absolute poverty has several indicators that can be used to assess the level of poverty in certain regions. The indicators which are usually used by the Statistics Indonesia consist of:

1) Head Count Index (P_0)

Head Count Index measures the percentage of individuals who live below the poverty line against the whole population number.

$$P_0 = \frac{N_p}{N} = \frac{1}{N} \sum_{i=1}^N I(y_i < z)$$

z is the poverty line, y_i is the income of individual i and $I(\cdot)$ is the dummy variable which takes value 1 if the income is below the poverty line and 0 for others. N_p is the number of individuals who live below the poverty line and N is the population number.

The Head Count Index does not take the variability among poor people into account. It assumes that the well-being of the poor people is the same. Hence, it cannot be calculated how many people live either far from the poverty line or near the poverty line

2) Poverty Gap (P_1)

Poverty gap measures how far it is from the average income of the poor people to the poverty line. The formula for the poverty gap is as follows:

$$P_1 = \frac{1}{N} \sum_{i=1}^N \frac{G_i}{z}$$

G_i is described as $G_i = (z - y_i) \cdot I(y_i < z)$ and the income of the people who live above the poverty line is assumed to be zero. The high value of P_1 indicates that the well-being of the poor people is very limited. The higher the P_1 , the poorer the people who live below the poverty line

3) Poverty Severity Index (P_2)

Poverty severity index is the squared of poverty gap. Using the formula of P_2 , the variability among poor people can be measured. The equation is as follows:

$$P_2 = \frac{1}{N} \sum_{i=1}^N \left(\frac{G_i}{z} \right)^2$$

The higher the value of P_2 , the greater the inequality among poor people. The poverty indicator of P_2 is rarely used because of the difficulties to interpret the number.

2.2.1.2 Relative Approach

The concept of relative poverty correlates to the inequality of measurement and income distribution in the society. It measures the well-being of the individuals between one and another. It is usually captured by the deciles percentage, in comparison to the average income. The indicator which can be employed is the Gini Coefficient. Since, the relative approach depend on the income distribution inside the society, thus the comparison of poverty between two or more groups is not possible.

2.2.2 Measurement of Pro-Poor Growth

There are several approaches to assess whether the growth is pro-poor or not. In line with the measurement of poverty, which using absolute and relative approach, Pro-Poor Growth can also be measured by those approaches.

2.2.2.1 Absolute Approach

- 1) Growth Elasticity of Poverty Rate

The growth elasticity of poverty measures the change of Head Count Index in two different periods of time when the economic growth increase one percent.

$$\varepsilon_H = \frac{\partial H}{\partial \mu} \times \frac{\mu}{H}$$

ε_H is the growth elasticity of poverty, H is the head count index and μ is the average income which describes the growth. The high growth elasticity of poverty means that the small change in the growth will change the head count index significantly. Hence, ε_H of the region which has a high income inequality tends to be inelastic. This is due to the fact that the change of economic growth in that region will not give a high impact to the poverty level.

- 2) Rate of Pro-Poor Growth

The rate of pro-poor growth using Watts Index is proposed by Ravallion (2004) and Ravallion and Chen (2001). It uses the ratio between changes in poverty using Watts's index and those using neutral distribution. The rate measures how much the poor benefit from the growth.

2.2.2.2 Relative Approach

- 1) Poverty Bias of Growth (PBG)

This measurement is differential of poverty decomposition which is proposed by Kakwani and Pernia (2000). The change in poverty is decomposed to the effect of economic growth and that of inequality.

$$\Delta P = (\Delta P)_g + (\Delta P)_I$$

ΔP is the change in poverty, $(\Delta P)_g$ is the growth effect and $(\Delta P)_I$ is the inequality effect. The poverty bias of growth measures the adverse effect of inequality to the change of poverty. Hence, the formulation follows is:

$$\sigma = -(\Delta P)_I$$

where σ is the symbol for poverty bias of growth.

- 2) Pro Poor Growth Index (PPGI)

Also using the poverty decomposition, Kakwani and Pernia (2000) develop the pro-poor growth index, which is the ratio between net impact of poverty and gross impact of poverty.

$$\Phi = \frac{\lambda}{\gamma}$$

Φ is the pro-poor growth index; λ is the net impact of poverty; and γ is the gross impact of poverty. The gross impact of poverty, which is always negative, is the effect of growth on the poverty without being influenced by inequality. Meanwhile, the net impact of poverty is the impact of growth accompanied by the ine-

quality to the poverty. This sign can be positive or negative, depending on the impact of inequality to the poverty. Hence, the index is categorized as follows;

- $\emptyset \leq 0$: anti pro-poor growth
- $0 < \emptyset \leq 0.33$: low pro-poor growth
- $0.33 < \emptyset \leq 0.66$: moderate pro-poor growth
- $0.66 < \emptyset \leq 1$: pro-poor growth
- $1 < \emptyset$: high pro-poor growth

2.3 Conceptual Framework

This conceptual framework describes how the Community-Driven Development (CDD) reduces the poverty. It will explain several way of CDD in eradicating poverty. Besides discuss the concept of CDD, this section also points out specifically about PNPM. As the core value of PNPM, the concept of empowerment will be discussed further in the following section.

2.3.1 The Mechanism of Community-Driven Development (CDD) in Reducing Poverty

To solve the poverty problem, many developing countries have employed CDD approach. They believe that this approach is an effective way to unleash the poor from the misery. According to World Bank (2013), CDD program works as a “laboratory” for the marginalized groups to enhance their skills and capabilities. In its process, the poor people will be equipped with both theoretical and practical lessons in order to prepare them to be a subject of development. Moreover, the program is not only encouraging the communities to create job opportunities, but also improving infrastructures, especially in rural areas where these basic facilities are usually limited.

CDD also gives authorization to the communities to manage the funds under the supervision of the local government. Thus, it strengthens the cooperation and relationship between the communities and the government institutions. As a result, it also enhances the transparency, and encourages the related institutions to perform better.

Dongier (2003) proposes the idea that the CDD approach is a reliable poverty alleviation program which has to meet the following conditions:

1. Its role in the economic market and public investment

To reduce the poverty level, the government usually concerns with two programs. One is the program which evokes the economic performance and advances the market, and the other one is that which provides the best public investment. This is based on the consideration that both strategies will be able to raise the well-being of the poor. However, the benefits of those programs are often not fully received by the poor people. Further, the poor will have to wait for a long time if they want to gain the advantages of the program. In this case, the community driven development program plays an important role to restore the target.

When the CDD does not run, the market without sufficient infrastructure will likely create an imbalance between the infrastructures needed and supplies of the natural products. A well- advanced market will result in an increase in the production of commodities sourced from agricultural sectors and fishery industries, while, in fact, the infrastructure sector, which includes road, education and health facility, is often ignored. For instance, the infrastructure projects held by the central government will likely take a long time to finish due to the complicated bureaucracy. Therefore, the ex-

istence of the CDD will help the regions to build their infrastructures by using local resources efficiently. Thus, their harvests can be transported and distributed smoothly, and the poor can feel the benefits as a whole.

2. Encourage the sustainability of the project

Sara and Katz (1997) confirm that projects under CDD are proposed based on the needs of the communities in a region. Through this process, information about the demands and priorities in the region is directly derived from the society, thus, the project will expectedly not be misdirected. Further, the engagement of the local communities in planning and investing processes will result in an appropriate project and increase the project's responsiveness to the poor's demands.

3. Improves efficiency and effectiveness

The implementation of the CDD program is considered to escalate the project more effectively and efficiently. In the infrastructure sector, fund management of projects held by Community-Based Organization (CBO) is relatively safe from misappropriating. By delegating the handling of the budget to the local communities will allow them to decide on the best and most needed projects. Realizing that the projects are for their own benefits and social welfare, thus, they can choose the most appropriate materials used for infrastructure building, and they are encouraged to manage the spending of the budget properly.

Lam (1998) and Tang (1992) suggests that projects held by the central government need more investment than those managed by the CBO. Moreover, the productivity of the infrastructure built by the CBO is also higher than that planned and built by the central government. Further, the cost per beneficiary for projects saves more than when the local communities are involved to supervise the implementation of the projects. This fact indicates that the existence of the CDD is very useful to make sure that everything about the infrastructure projects is on target.

Besides the infrastructure sector, the engagement of the local communities in handling educational sector has encouraged the education system to work in accordance with the needs of the poor. Jimenez and Paqueo (1996) confirm that the involvement of community based management in handling the schools has increased the daily attendance of the students. Besides that, the fees of education are much lower compared to those of education of the same quality. By supporting the performance of education system, the CDD will be able to help the poor to obtain proper education, which later enables them to free themselves from the poverty.

Case-studies conducted in some certain countries show that the community management program of natural resources works better than by the state management. Venkatamaran and Falconer (1999) conducted a research in the forest management in India. They affirm that the community management has been successful to reforest more than 1.2 million hectares. Further, forest abuses, such as illegal logging and poaching, have decreased significantly. The soil management has also rescued the source of spring water. As a result, the poor who tend to rely on the natural resources too much can gain benefits from the nature, not only for survival, but also for better welfare

4. Increase the responsiveness of minority groups demand

The CDD system is bottom - up development process which builds and develops projects in accordance with the real needs of the communities. The opinions, ideas, proposals, requirements and voices of the marginalized groups, such as the poor,

the disable, indigenous people, AIDS sufferers, can be accommodated in the CBO. This important issue might be neglected in the top - down state-led development program. By gathering information from the low level, the poverty alleviation program run reflects a picture of the real efforts.

The program is designed to be more inclusive, so that the limited resources can be distributed properly, and corresponds to the priority. Ravallion (1999) suggest that parent-teacher association has been able to address the misdistribution of education subsidies. The tuition fee subsidies can be allocated for students with less ability to pay school fees. They also categorize students based on their needs and conditions, which ones only need partial subsidies and which ones need full scholarships.

5. Treat the poor no longer as the target of poverty alleviation program but as part of the development process

By decentralizing the budget handling, the poor has an authority to make a decision. It gives them freedom to manage the development process. CDD empowers the poor to run the development. In this case, the poor becomes the main actor to help themselves increase their welfare. Besides that, the transfer of power from the state to the communities has improved their social network and built their social capital as confirmed by Grootaert and Narayan (2000).

2.3.2 The Concept of Empowerment introduced by PNPM

According to the PNPM guidelines, PNPM Mandiri is the basis and benchmark of the national poverty alleviation program, which applies the community empowerment based concept. The implementation of PNPM is reflected in the harmonization of the development programs, providing assistance and simultaneous funding to encourage the initiation and innovation of the communities to achieve sustainable poverty eradication. The poverty alleviation-empowerment based program is also supported by various programs held by the local government and the related department concentrating on the development of remote areas.

The main purpose of the program is to change the communities' behaviours through the empowerment approach. It is intended to enhance the skills and capabilities of the communities and strengthens their surviving power. To execute this program, supports from the stakeholders, especially the local government, are obviously required. It is in accordance with the definition of community empowerment proposed by World Bank (2013). According to them, community empowerment is an effort to improve the capacity of the communities, both individually and in groups, in order to address the various problems that handicap the efforts to enhance the quality of their lives, independence, and economic security. This action definitely requires full involvement of the local governments and other parties in order to provide opportunities and ensure sustainability of the program.

Meanwhile, Deepa Narayan suggests a broader definition of the empowerment. As cited in the Sukidjo (2009), the empowerment describes as follows:

"Empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives"

From the above definition, the community empowerment is an attempt to improve the assets and the potential of the poor. It is intended to prepare the participa-

tion of the poor in the community run-institutions. The involvement of the poor in the government institutions is expected to be able to control and strengthen the state. Thus, the sustainable development can be achieved by building the cooperation and synergy between the independence of the poor and the good governance. In the other words, the community empowerment can be defined as an effort to improve the value and dignity of the people who are still stuck in their poverty and backwardness.

Therefore, according to Sumodiningrat (1999), the community empowerment in the PNPM program can be executed through three ways: (1) providing a conducive atmosphere for the communities to develop their potential (enabling), (2) strengthening the assets owned by the communities (empowering) and (3) protecting the communities (protecting).

a. Enabling

To create the conducive environment for human capital development, the socialization of social values in the communities requires universal values, such as humanity and principal society. The values of humanity consist of togetherness, honesty, voluntary, sincerity, justice, equality and unity in diversity. Meanwhile, the principal society which can provide favourable environment principles comprises mutual cooperation, democracy, transparency and accountability.

The socialization of these values becomes more important to offset the negative influence of the globalization which glorifies the spirit and soul of individualism. Without the social principles, the drawback of modernization increasingly erodes the national culture. This may raise the vulnerability of the society to disintegrate. By adopting the values and norms in the society, every human being has their convenience which encourages their consciousness to collaborate to fight against poverty.

b. Empowering

The empowering is executed by the establishment of local institution in the form of Self-Reliance Agency (Badan Keswadayaan Masyarakat, BKM) and Self-Help Group (Kelompok Swadaya Masyarakat, KSM) which are down to earth, transparent and accountable. Being down to earth (rooted) means the institution is initiated by the lowest level of the social communities, which is called Neighbourhood Association (Rukun Tetangga, RT). Every individual has the same opportunity to be involved in the program. Next, transparency means that the rules are made and socialized to benefit the whole communities. Lastly, 'accountable' means that all of the financial activities are administered in the right order, widely reported to the public, and audited by a public accountant.

Building human capacity can also be done through the provision of financial assistance, human resource development, and infrastructure development, which all are integrated in "Tridaya" development, namely economic, social and environmental development. Economic development is in the form of capital loan provided for the poor who have had a business registered in the Mapping Organization (Pemetaan Swadaya, PS) ,and is a member of the Self Help Groups (SHGs). Social development consist of human resource development activities, such as skill building, entrepreneurship and management training, as well as the provision of scholarships for school children. And, environment development is manifested in the development of health and hygiene sector (sanitation, sewerage, cages group), water wells, housing restoration (home health), roads (hardening, paving), irrigation canals, bridges and constructions of markets and shops.

c. Protecting

Protecting means that the poor are given guidelines as part of the program preparation and it is in accordance with the needs, problems and assets owned by the poor. Poor villagers are guided to recognize their potential and problems. Thus, based on the consensus, it will decide on the planned program activities for one to three year period, where the program includes the economic, social and environmental development. This program plan will be outlined in the Medium Term Development of Poverty Reduction Program (Pembangunan Jangka Menengah, PJM). By using the formulation of PJM, it can be assessed whether the program can be regarded as pro-poor policy and appropriate to address the poverty problems.

2.4 Empirical Evidence

Some previous studies to examine the relationship between economic growth and poverty reduction have been done by many researchers. Ravallion and Chen (1997) conduct a cross-sectional study of 62 developing countries. The result points out that an increase of 1 percent in income per capita will reduce the number of people living below the poverty line with \$ 1 per day by 3.1 percent. Another research from Dollar and Kraay (2000) also shows a negative relation between economic growth and poverty rate. By using data sourced from 137 countries during a period of 1960 to 1990, the empirical study concludes that a rise of 1 percent in the average output growth leads to a rise of 1 percent in incomes of the poor.

The similar result is also disclosed by Hasan and Quibria (2002). By employing the cross section regression model among some countries in the world (East Asia, Sub-Saharan Africa, Latin America, and South Asia), the empirical study shows that growth is important in poverty reduction. However, the effect of growth on poverty reduction varies greatly among countries. The greatest effect of growth on poverty reduction is experienced by countries in East Asia region, in which an increase of 1 percent in the national per capita income is able to reduce the poverty by 1.6 percent. While the lowest influence of economic growth on poverty reduction occurred in countries of sub-Saharan Africa,, where a 1 percent increase in the national income per capita is only able to reduce poverty by 0.71 percent.

In case of Indonesia, the Woodon (1999) model about the effect of economic growth on poverty has been used by Priyarsono and Hajiji (2009). They analyze the effect of growth in Riau Province on the poverty condition. The result indicates that the economic growth in the province of Riau from 2002 to 2008 significantly reduced poverty. Nevertheless, the increase in income inequality due to the acceleration of economic growth does not significantly reduce the poverty. From this research, by having the definition of pro-poor as an absolute term, it can be concluded that the economic growth in Riau is not a kind of pro-poor growth.

Another research about PNPM also was conducted by Syukri, et al (2013) in East Java, West Sumatera and South East Sulawesi provinces. They worked randomly on eighteen districts in those provinces. Since the PNPM started in 2007, the study uses the qualitative methodology statistics by comparing the evaluation of the program between 2010 and 2007 as a baseline. The result shows that most of the programs rely on the collaboration between local government and the communities. By promoting the community empowerment, the program has been successful to alleviate the pov-

erty rate. It indicates that the PNPM program has become an effective solution to overcome the poorness problem.

The study about PNPM in Indonesia was also conducted by Rahim (2014). In his research, he examined how far the PNPM has impacted on the rate of poverty in Maluku province. By employing the panel data from all districts in Maluku province between 2008 and 2012, the result shows that PNPM does not show significant effects on the poverty rate. This fact is due limited participation of the communities in this area. Furthermore, the local government has not been able to manage the budget allocation as authorized by the central government. Hence, the PNPM in Maluku has not been successful to dampen the poverty rate.

Most of the studies about PNPM in Indonesia above were only conducted in one or more certain provinces. Therefore, the results cannot represent a general conclusion about the effectiveness of the program in Indonesia, as whole, despite the fact that the PNPM has been regarded a leading project in the national poverty alleviation program. To obtain more representative results, those previous studies have called for a broader research on the effectiveness of the PNPM program, not only in certain regions but the one that covers all provinces in Indonesia. Referring to that notion, this research paper tries to assess how far the PNPM program can boost the economic growth and its impacts on the poor.

Chapter 3

Poverty, Economic Growth, and Poverty Alleviation Program in Indonesia

This chapter discloses the overview about poverty, economic growth and poverty alleviation program in Indonesia. By having this illustration, it would give comprehensive understanding of this paper. Firstly, the historical movement of the poverty data is presented at the beginning of this chapter. Further, this part covers the poverty rate (head count index) by island, province and rural urban. In the next section, this chapter draws chronologically the economic growth between 2009 and 2013. Lastly, the explanation about poverty alleviation program by including PNPM will conclude this chapter.

3.1 Characteristics of Poverty in Indonesia

Poverty becomes an interesting issue to be discussed, especially in developing countries like Indonesia. In terms of quantity, the number of poor people in Indonesia has decreased significantly for the last few decades. It is noted in Statistics Indonesia that the poverty rate decreased from 24% in 1999 to 11.4% in 2013. The success of the poverty reduction program is definitely related to the strong economic performances during that period. The economy that consistently grew after recovering from the Asian economic crisis in 1997-1998 has given a substantial contribution to the poverty alleviation in the country. However, currently the pace of poverty reduction is getting slower. In the period of 2012 to 2013, the poverty rate only decreased by 0.5%, and, according to the poverty reduction record, that percentage is the lowest decline during the last decade.

With this slow pace of poverty alleviation, the poverty problem is still one of the main issues in all regions in Indonesia. As a matter of fact, some of the people who live above the poverty line are even getting vulnerable to become poor. In 2013, with the number of population about 252 million, 28 million people live below the poverty line (with an income of \$24.4 a month or below). Further, 68 million people earn slightly above the poverty line. Moreover, the Statistics Indonesia confirms that the non-poor people in 2009 turned to be poor and contributed to more than a half of the poverty rate in 2010. Hence, minor economic shocks such as an increase in oil prices will likely bring the vulnerable people into poverty.

Based on that situation, Indonesian Government has persistently been promoting the policies which support efforts in the poverty alleviation. Among other programs held are Community Driven Development program, Micro and Small Enterprise Empowerment Program and Integrated Family-Based Social Assistance Program. Furthermore, there are a number of scholars who try to formulate the best way to support the poverty alleviation program. The World Bank and UNDP have also given support and guidance to the Indonesian Government in the form of fund and technical assistance.

From the figure below, it can be seen that Indonesia had experienced a significant poverty reduction between 1980 and 1996. The number of poor people in 1980 was about 42.30 million and fell sharply to 22.5 million people in 1996. In 1996, Statistics Indonesia changed its methodology to calculate the poverty line. Before 1996, the poverty line only included the minimum basic needs for food, while after 1996 the

formulation had involved poverty line for non-food. Hence, in 1996 there were two values for Head Count Index and Number of Poor-People. With the previous method, the number of poor people was 22.5 billion with a poverty rate of 11.3%. Meanwhile, by implementing the new formulation, the head count index increased to 17.47% and the number of poor people became 34.01 million.

Due to an economic crisis, the poverty rate in 1998-1999 increased to nearly 30%. However, by continually combating poverty, the recovery from the crisis had successfully reduced the poverty rate to nearly 20% in 2005. Another economic shock emerged at the end of 2005 when the government increased the fuel price. This economic turmoil raised the inflation rate and reduced the purchasing power. Because this crisis was not accompanied by an increase in average income, it had resulted in more and more poor people.. The next period, from 2006 to 2013, the data shows that the state of poverty is quite encouraging.

Figure 3 Trend of Poverty in Indonesia, 1980 - 2013



Source: Statistics Indonesia (2013), processed by author

From the table below, it is shown that the poorest island is Papua Maluku, which has a head count index around 25%. The reduction of poverty in this island did not show significant changes. In fact, Nusa Tenggara also has a quite high poverty level. However, the poverty rate has successfully fallen to 18.88% in 2013. Kalimantan has the smallest poverty rate because they have a low number of population and low number of people who live below the poverty line. Further, Sumatera, Java Bali and Sulawesi have almost the same rate of poverty, at around 10 percent. In terms of the number of poor people, the most live in Java Island. The data confirms that over a half of the poor-people in Indonesia live in Java, and this fact is due to the high number of population in the island. In addition, the head count index of Sumatera and Sulawesi are almost equal to Java.

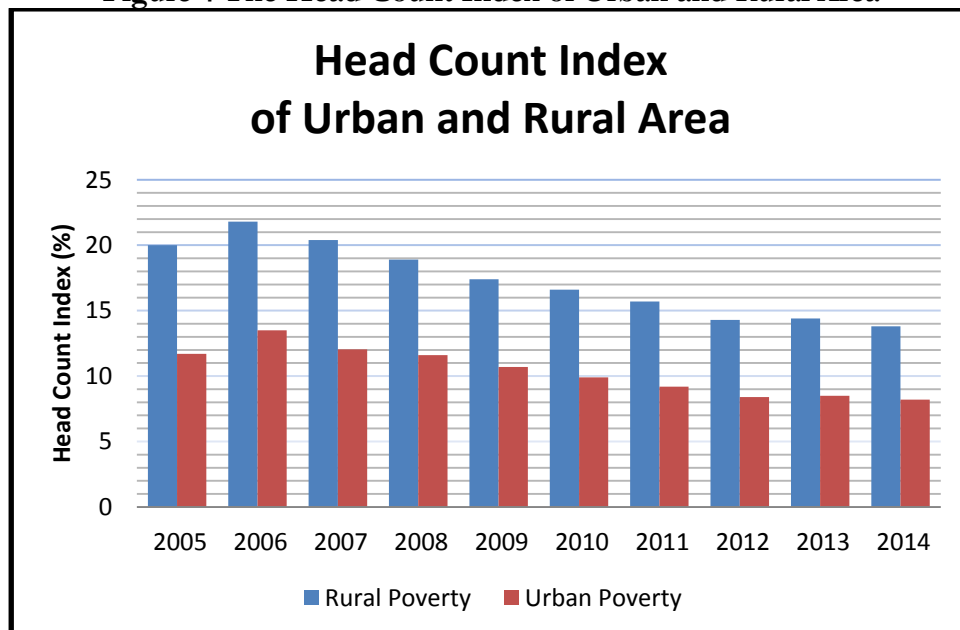
Table 3 Head Count Index by Island, 2007 – 2013

Island	2007	2008	2009	2010	2011	2012	2013
Sumatera	16.35%	14.94%	13.81%	13.14%	12.46%	11.97%	11.43%
Java Bali	15.80%	14.81%	13.51%	12.45%	11.84%	11.27%	10.63%
Nusa Tenggara	26.11%	24.49%	22.80%	22.03%	20.36%	19.60%	18.88%
Kalimantan	10.71%	9.45%	7.78%	7.38%	6.85%	6.60%	6.28%
Sulawesi	17.11%	15.78%	14.85%	13.51%	12.12%	11.68%	11.12%
Papua Maluku	31.64%	29.13%	29.00%	24.13%	26.06%	25.32%	24.94%

Source: Author's calculation based on data from Statistics Indonesia (2013)

Due to the fact that the standard of living in urban and rural area in Indonesia is slightly different, the Statistics Indonesia determines different poverty line for rural and urban area. The figure below depicts the comparison between Head Count Index of urban and rural area which is calculated based on the poverty line for urban and rural area respectively.

Figure 4 The Head Count Index of Urban and Rural Area

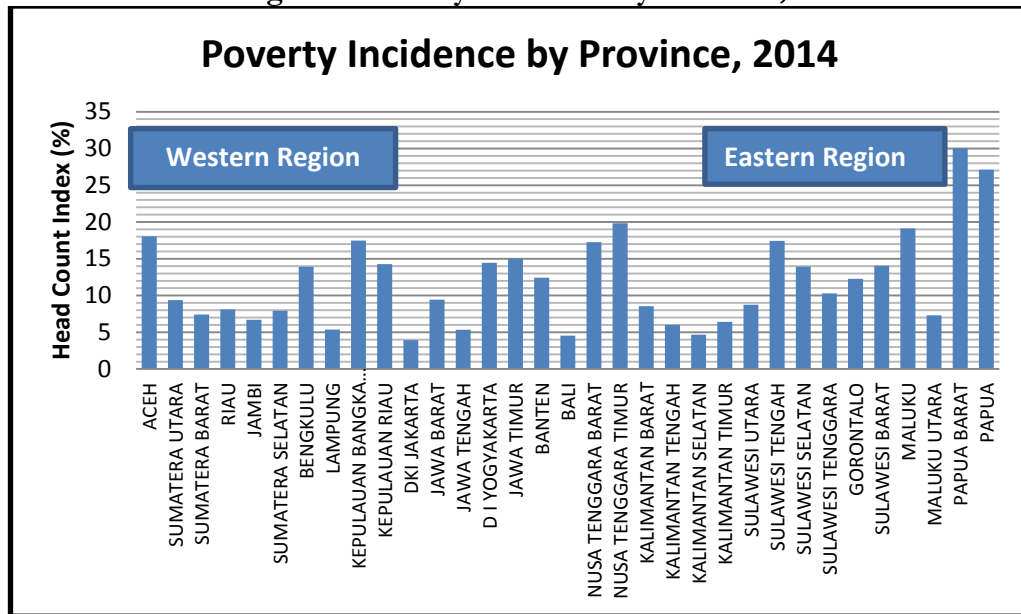


Source: Statistics Indonesia (2013), processed by author

Generally, the poverty rate in rural area is higher than that in urban area. It gives an initial conclusion about the best policy for the poverty alleviation. If the government really concerns about reducing the national poverty rate, they should look deeper into the poverty in rural area. Further, most of the people in rural area engage in the agricultural sector. Hence, many scholars such as Hanmer & Nashchold (2000) suggest that the agricultural sector plays an important role to the poverty reduction. Nevertheless, Suryahadi et al. (2009) denies this finding. According to him, the government should pay more attention to the service sector in order to minimize the poverty rate.

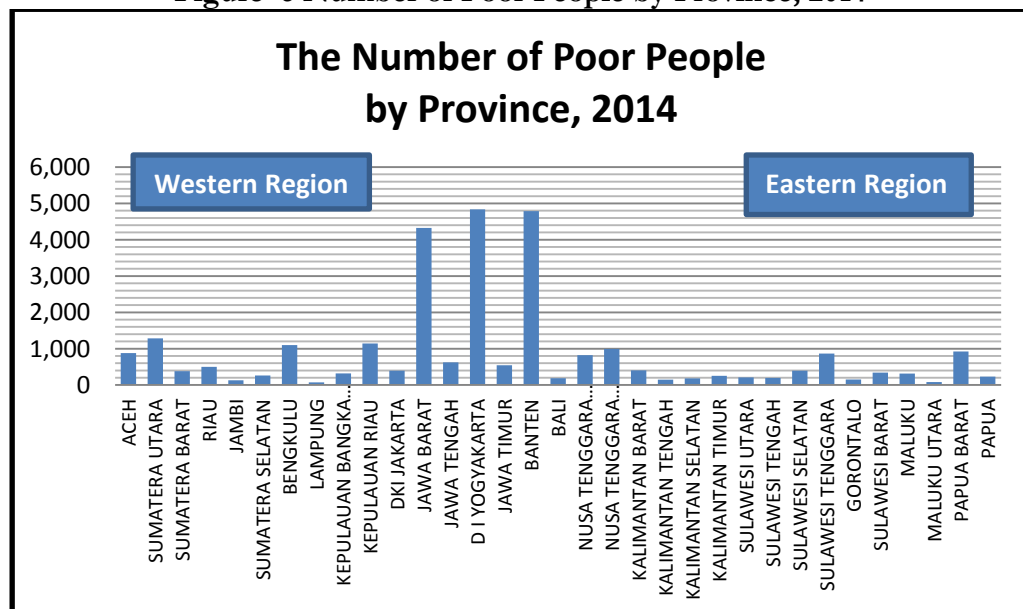
Based on the 2014 data, the poverty incidence in the eastern region tends to be higher than in the western region. The highest poverty incident in eastern region is in West Papua, with a 30.05% rate. And, this is followed by Papua with the head count index at 27.13%. This finding has corroborated the previous discussion about the poverty rate by island. Meanwhile, the highest poverty incident in the western region is in Aceh at 18.05%.

Figure 5 Poverty Incidence by Province, 2014



Source: Statistics Indonesia (2014) , processed by author

Figure 6 Number of Poor People by Province, 2014



Source: Statistics Indonesia (2014), processed by author

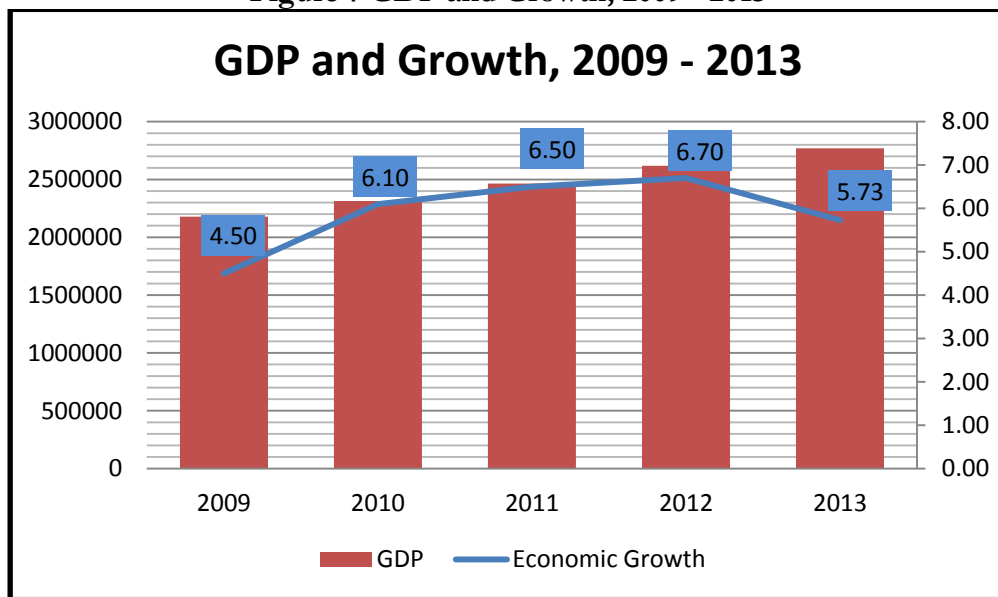
Different from the poverty incidence, the regions with the highest number of poor people are West Java, Yogyakarta and Banten. The number of poor people in Eastern Region is quite low, compared to the Western Region. Maluku Utara has the

lowest number of poor people at about 11.2 million, while Banten which has the highest number of poor-people is occupied by about 1.531 million of poor people in 2014.

3.2 The Pattern of Economic Growth in Indonesia

During 2009 to 2013, the economic growth of Indonesia was around 6%, except in 2009. That year, Indonesia was affected by the global economic crisis and the growth dropped dramatically to 4.5%. However, the wide variety of government programs managed to boost the economic growth to 6.10% in 2010 and achieved the highest growth rate at 6.70% in 2012.

Figure 7 GDP and Growth, 2009 - 2013



Source: Statistics Indonesia (2013), processed by author

Based on the constant price 2000, the GDP in 2013 became the highest one during last five years. However, the economic growth in 2013 only achieved 5.73%. Further, based on the national survey, mining and utility sector gave a big contribution to the GDP, which is followed by services and agricultural sector respectively. According to the constant price, the Indonesian GDP always increases. However, the economic growth rate tends to fluctuate.

Timmer (2004) is one of the researchers who studied about economic growth in Indonesia. He found that the economic growth in Indonesia is able to reduce the poverty rate. In his research, he divided the time period into three phases. The first period is from mid 1960 to mid 1970; the second is from mid 1970 to mid 1980; and the last is from mid 1980 to mid 1990. Based on those time periods, he investigated each of the main sources of the economic growth. The study confirms that, in the first period, the economic growth was triggered by economic recovery and revitalization of the existing capital stock and infrastructure. In the second period, there were a lot of new inventions in technology, especially in agricultural sector. These inventions boosted the productivity of agricultural sector significantly. Hence, the economic growth from mid 1970 to mid 1980 was sourced from the agricultural sector. In the third period, Indonesia began to promote the Foreign Direct Investment (FDI) as a fundamental source of development. Thus, in this period, the FDI and manufacture sector grew very rapidly and became the root of the economic growth.

3.3 Poverty Alleviation Program in Indonesia (PNPM Program)

The poverty alleviation program was initiated by the Asian economic crisis in 1998. As an economically vulnerable country, the economics of Indonesia worsened at that time. Not only the economic growth was influenced, but also the poverty incidence increased dramatically from 17.47 percent in 1996 to 24.23 percent in 1998. Based on that consideration, the Indonesia government thoughtfully put the poverty reduction as the main objective of the economic development. Poverty alleviation placed the first priority in the government's agenda. This agenda proved to have worked well and the government managed to release a huge number of people from the poverty. In 2013, the poverty rate went down to 11.37 percent.

To support the poverty alleviation program, the president issued a Presidential Regulation Number 15 of 2010 on the Acceleration of Poverty Reduction. The goal of this regulation is to push the poverty rate down to eight to ten percent by the end of 2014. Hence, the government continuously encouraged the poverty alleviation program based on social assistance, community development and small medium enterprise empowerment. The fundamental strategies to alleviate the poverty include social protection, enlarged access to basic needs, community based development and inclusive development.

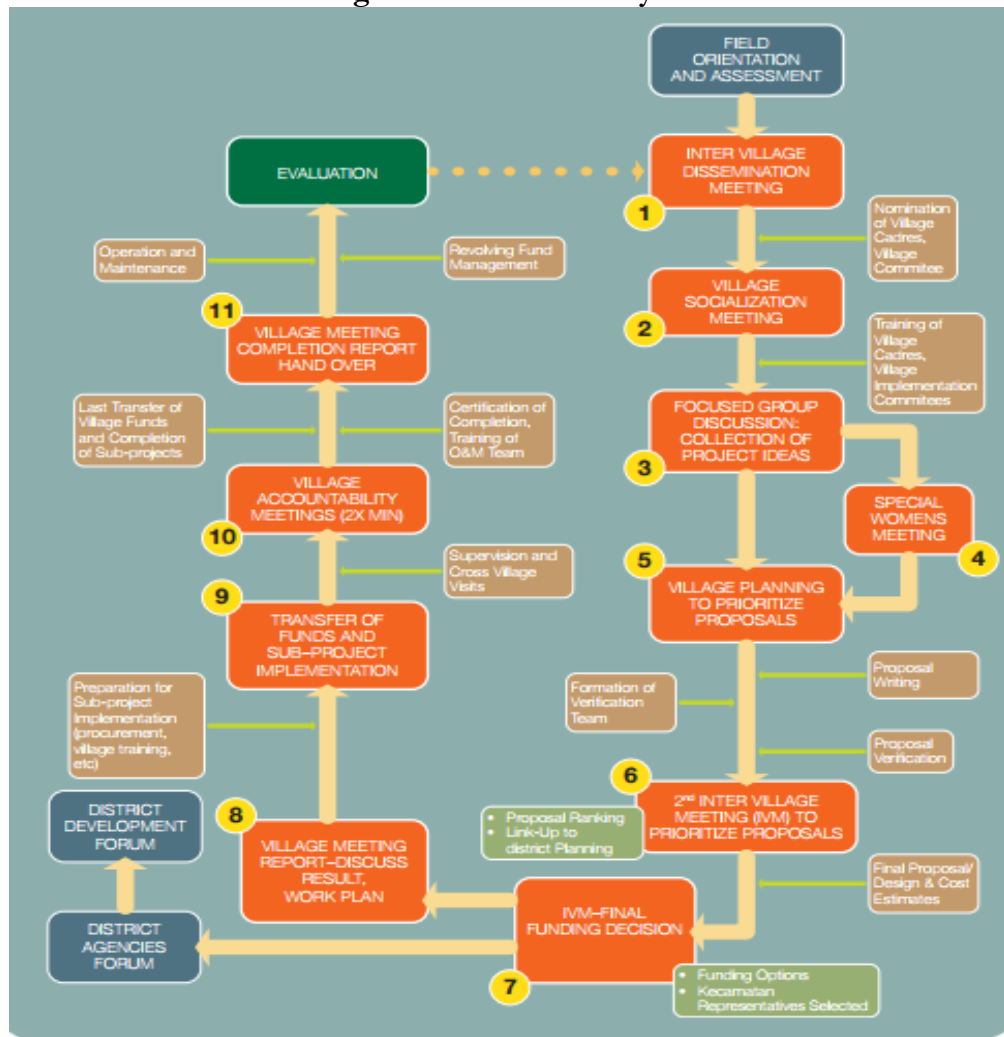
Community based development program is a poverty alleviation program which does not only try to free people from the poverty but also exploit the potential of the poor-people to achieve sustainable poverty alleviation. The community empowerment emphasizes on the attempt to encourage the initiatives and innovations of the poor people by giving them fund and guidance. The program mainly concerns with the efforts to create job opportunities and utilize the community's participation, starting from the program planning until the program execution. Hence, it requires active participation of the community, the regional government and the stakeholders.

PNPM Mandiri is a national community based development program to reduce the poverty. The PNPM consist of fourteen sub –programs. The description of each program is provided in the **Appendix 2**. Meanwhile, the legal basis for the implementation of PNPM Mandiri is derived from the 1945 Constitution and its amendments, the foundation of Pancasila and applicable legislation. Specific legislation that is related to the government, planning, state finance system and poverty alleviation policies can be found in the **Appendix 1**.

As a mention before that the core of PNPM program is providing Block Grant for the community. The allocation of Blok Grant is determined by the number of population and the number of poor people in the community. The program begins with the formation of groups, called Self-Reliance Groups (KSM). Each of KSM makes the project proposal under the assistance of *facilitator*, who is elected based on the capabilities to lead the group. The role of *facilitator* is very crucial since the better the proposal, the higher the group probability to get the Grant. Next, there will be assessment of proposals to decide the allocation fund.

According to PNPM Support Facilities (2014), Block Grant cycle consist of four stages, namely Socialization Stage, Planning Stage, Implementation Stage and Sustainability Stage. From Figure 8, each stage can be outlined as follows:

Figure 8 Block Grant Cycle



Source: PNPM Support Facilities (2014)

A. Socialization Stage

This stage consists of process number one up to number four. The election of facilitator and formation of groups take place in this stage. Schedule, planning program and planning fund will be socialized to communities. Hence, societies have a brief overview about the program.

B. Planning Stage

Process number five to number eight are included in this stage. Each of groups is preparing their proposal. Then, the process continues with verifications of proposal, assessment of program and determination allocation fund for each project.

C. Implementation Stage

According to the planning project, implementation of the program is run. This stage comprises three process number eight up to ten.

D. Sustainability Stage

The stage is continued by evaluation of the program. The aim of the evaluation is ensuring that the project could be sustained.

Chapter 4

Data and Methodology

In this chapter, we will discuss the data and statistical methodology employed in this research. The source and how to collect the data will be provided in the following part. This section also explains either description of each variable or the reason why it takes those kinds of variables. Since the study employs the panel data, the statistical methodology used is panel analysis for both Fixed Effect Model (FEM) and Random Effect Model (REM). Besides that, the Ordinary Least Square (OLS) will also be implemented in the data. Thus, to choose the most appropriate model, the analysis data will conduct Chow and Hausman test.

4.1 Data

This empirical study employs panel data which consist of data of annual time series from 2007 to 2013 and cross section data of 33 provinces in Indonesia. Therefore, data used consists of 231 data. The data is collected from Statistics Indonesia (BPS Indonesia) and State Ministry of Development Planning. Statistics Indonesia provides Head Count Index or Poverty Rate, Gross Regional Domestic Product (GRDP), the unemployment rate, inflation rate, GRDP for agricultural sector, GRDP for export, Gini coefficient and population in provincial level data, while data sourced from National Development Planning contains the realization of PNPM fund per province. The PNPM realization data consists of fourteen sub programs, namely: Rural, Rehabilitation and Reconstruction of Nias Island, Smallholder Agribusiness Development Initiative, Smart and Healthy Generation, Rural Neighborhood Independence, Participatory Development System Programme, Strategic Village Development Planning for the People of Papua, Urban, Rural Infrastructure, Regional Development of Socio-economic Infrastructure, Supplying Drinking Water to Communities, Accelerating the Development of Disadvantaged and Special Areas, Marine and Fisheries and Tourism.

By adopting the absolute measurement of pro-poor growth, the head count index variable takes place as a dependent variable. Meanwhile, the independent variables are the economic growth which is calculated from GRDP, Gini coefficient and the interaction variable between growth and PNPM realization. Hence, it can generate the effects of PNPM policy on the triangle relationships between poverty, inequality and growth. The analysis of PNPM realization will be separated into two models, i.e one is as an aggregate PNPM realization and the other one conducts each of the sub program of PNPM as an independent variable. As the mechanism of PNPM allocation is based on the population and poverty rate, the calculation of PNPM allocation variable is proportionate with the population number. The control variable comprise the unemployment rate, monetary policy (inflation rate), GDRP for agricultural sector and GDRP for export.

This study adopts the poverty definition as in absolute poverty; thus the assessment of pro-poor growth can be measured by the elasticity of poverty rate. The proxy for poverty rate is a logarithm of head count index which categorizes people based on the poverty line. Meanwhile, the growth variable employs log of GDRP per capita as a proxy variable. It is based on the consideration that the log of GDRP per capita shows the growth of average income capability. As the main variable, the PNPM data used is based in the fund realization, not the ed fund allocation. It is due

to the fact that not all fund allocated is spent for the program. Hence, if the data is based on fund allocation, there will be a missing budget which actually has not been captured in the economic growth.

To capture the distribution of income, the model use Gini coefficient. With the Gini coefficient, the income gap between the poor and the rich will be depicted in the provincial level. On the other hand, the labour market, which is widely believed to have a correlation to the poverty, is represented by the unemployment rate. The agricultural sector, which becomes the majority of Indonesian livelihood, is included in the model with a percentage of GDRP on the agricultural sector. The consideration is that the more GDRP on agriculture, the more productive the Indonesians are. Finally, the percentage of secondary school enrolment is chosen as a proxy for education, which describes the level of human capital.

4.2 The Variables

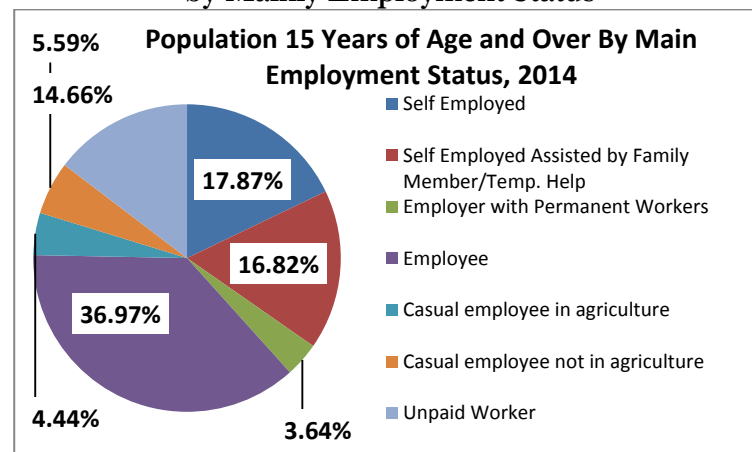
4.2.1 Employment

The employment is considered to play an important role in the poverty reduction. Osmani (2003) suggests that the poverty is a result of the unemployment and the low return of labor. Hence, to minimize the poverty incidence, job opportunities need to be extended and the productivity of labor should be increased. Further, Islam (2004) proposes the cycle correlation between growth, employment and poverty. The increasing of output growth would create the opportunity job which in turn to enhance the income of the poor. The increasing of income leads to the decreasing of the poor. Besides that, the better income encourages the investment health and education sector, which in the long run could upgrade the skill of labor.

The growth will be more beneficial for the poor if it creates more job opportunities which meet the skills of the poor-people. Moreover, most of the poor people are unskilled labor. Therefore, the poor should be able to increase their productivity or the job opportunities should match to the low skilled labor. Based on the notion of Islam (2004), the mismatch between job opportunities and skills of the poor people will not help to create the pro-poor growth.

According to Ernst and Berg (2009), patterns of unemployment in developing countries and developed countries are different. Without adequate social security, the decision to be unemployed in developing countries is very luxurious. The poor would

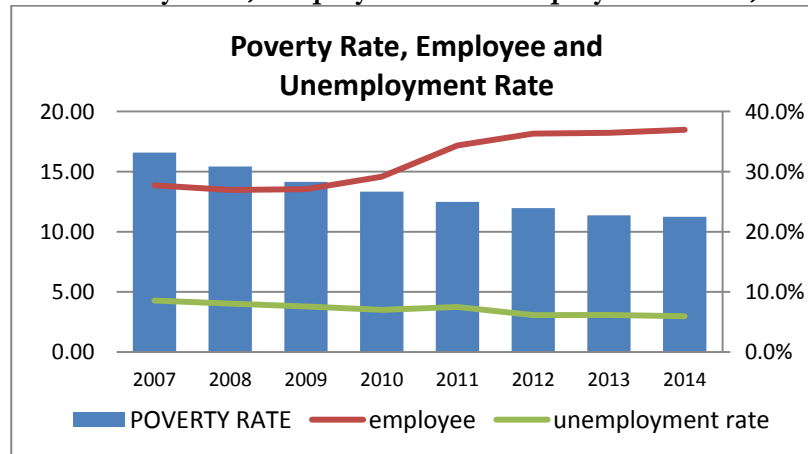
Figure 9 Population 15 Years of Age and Over by Mainly Employment Status



Source: Statistics Indonesia (2014), process by author

choose to be self-employed or casual labour rather than being unemployed. However, employment data shows fascinating finding. Based on the Population 15 Years of Age and Over by mainly Employment Status in 2014, most of them are employee. From data 2014, 36.97% of the labor participants are employee. It indicates that formal sector dominates in the labor market in Indonesia. Besides that, the relationship between poverty rate, unemployment and employee could be depicted in the following figure:

Figure 10 Poverty Rate, Employee and Unemployment Rate, 2007-2014



Source: Statistics Indonesia (2014), process by author

Refer to figure 10, there is a positive relationship between poverty rate and unemployment rate. During period 2007 and 2014, Indonesia poverty rate is gradually decreased in accordance to the alleviating of unemployment rate. The lowering of unemployment rate is highly probably as a result of increasing the proportion of employee. It implies that informal sector which is captured in the unemployment rate has the same proportion each year. Hence, the unemployment rate can be used to explain the poverty rate.

4.2.2 Agriculture

Agricultural sector has a more significant contribution to the poverty rate in the agrarian countries. Most of the poor people engage in the agrarian sector as they have limited skills. Hence, a rapid growth in this sector will be able to reduce the poverty rate. Moreover, Doward et al (2001) realize that the agricultural sector affects the poverty alleviation because of its large proportion in GDP and the huge amount of labor engaged in this sector, particularly the poor people. Besides that, the agricultural sector has multiplier effects on other sectors. The increasing productivity of the agricultural sector will encourage commercial markets in rural areas. Hence, this situation may provide other alternative jobs for the poor people.

According to the Food and Agriculture Organization (2004), the growth in the agricultural sector has a negative correlation with the poverty rate. The study concludes that an economic growth in the agricultural sector will alleviate the poverty rate more than that in other sectors. They explained that the agricultural sector could reduce poverty through three mechanisms. First, a good agricultural performance will be able to stabilize the food prices, which are very crucial. Second, the higher the growth in agriculture, the more employment required. It means that the growth will provide more job opportunities, particularly for unskilled labor, which match to the poor. Fi-

nally, the growth in this sector will stabilize prices of the commodities. As a result, it may give a better value to the poor's income. In conclusion, the agricultural sector should be considered as a priority in the poverty reduction strategy.

4.2.3 Education

Education affects the poverty through the relation between education and income. People with better education will have a greater opportunity to engage in the labor market. Further, the higher the education, the greater the income. The study held by Bourguignon and Morrison (2000) confirms that a one percent increase in labor force, with at least graduates of secondary school, will increase the income of 40% of the poorest people by 6%, and another 60% of them by 15%.

In the national level, high educated people tend to have high productivity. The more the people educated, the higher the productivity of the country. It leads to high economic growth where the poor could get the benefit from growth to unleash the poverty. According to Birdshall (2003), who conducted the research in Thailand, shows that the people who has longer education year adopts more modern agriculture system, which in turn to the higher productivity.

4.2.4 Growth, Inequality and Poverty

The relationship between growth, inequality and poverty can be depicted by decomposition formula. The equation decomposes the poverty level into two components- growth and inequality as in the following model:

$$P = P(\bar{Y}, G)$$

where \bar{Y} is the average income per capita and G is the Gini coefficient which describes the level of income distribution. The model above can be modified in the differencing term by the following formula:

$$\frac{dP}{P} = \eta_1 \frac{d\bar{Y}}{\bar{Y}} + \eta_2 \frac{dG}{G}$$

where the difference of the variable denotes the change of the variables. η_1 describes the growth elasticity of poverty, while η_2 denotes the income inequality elasticity of the poverty rate. Both of them can be used to measure how far the change in poverty occurs when the growth and the income inequality change. According to Warr (2005), the expected sign of η_1 is negative, while η_2 should be positive. Hence, the poverty alleviation policy should collaborate the appropriate relative amount of economic growth and income inequality which can manage the number of poor people.

4.3 Methodology

As described above, this research paper employs OLS, FEM and REM. To examine the effectiveness of PNPM program, this study conducts the two empirical models.

Model 1

In this model, it employs the interaction independent variable between *Growth* and *PNPM*. The aim of this interaction variable is to analyze how the growth affects the poverty rate when the growth is influenced by the PNPM program. The comparison between θ_1 and θ_2 is expected to give a comprehensive analysis about the role of the PNPM program.

$$Povrate_{it} = \theta_0 + \theta_1 Growth_{it} + \theta_2 Growth_{it} * PNPM_{it} + \mu_i + \varepsilon_{it}$$

where:

- Povrate_{it} : Log rate of Head Count Index of province i year t
 Growth_{it} : Log of GDRP per capita of province i year t
 Growth_{it}*PNPM_{it} : Log of growth*Log of PNPM realization/population of province i year t
 μ_i : Fixed or random effect
 $\theta_0, \theta_1, \theta_2$: Coefficient
 ε_{it} : Error term

Model 2

In the second model, it involves the control variables to accommodate other factors which effect the poverty reduction, and also to examine the reliable result of model 1. The additional variables consist of gini coefficient, unemployment rate, agricultural sector and educational level. In this model, it will employ three different measurements of poverty, i.e: poverty rate, poverty gap and average income proportion of 40%of the poorest. Hence, the second model consist of three models

Model 2.1

$$Povrate_{it} = \theta_0 + \theta_1 Growth_{it} + \theta_2 Growth_{it} * PNPM_{it} + \theta_3 Gini_{it} + \theta_4 Unemp_{it} + \theta_5 Educ_{it} + \theta_6 Agri_{it} + \mu_i + \varepsilon_{it}$$

Model 2.2

$$Povgap_{it} = \theta_0 + \theta_1 Growth_{it} + \theta_2 Growth_{it} * PNPM_{it} + \theta_3 Gini_{it} + \theta_4 Unemp_{it} + \theta_5 Educ_{it} + \theta_6 Agri_{it} + \mu_i + \varepsilon_{it}$$

Model 2.3

$$Poorest_{it} = \theta_0 + \theta_1 Growth_{it} + \theta_2 Growth_{it} * PNPM_{it} + \theta_3 Gini_{it} + \theta_4 Unemp_{it} + \theta_5 Educ_{it} + \theta_6 Agri_{it} + \mu_i + \varepsilon_{it}$$

where:

- Povrate_{it} : Log rate of Head Count Index of province i year t
 Povgap_{it} : Log rate of Poverty Gap of province i year t
 Poorest_{it} : Average Income Proportion of 40% Poorest People of province i year t
 Gini_{it} : Gini Coefficient of province i year t
 Unemp_{it} : Unemployment Rate of province i year t
 Agri_{it} : Percentage of GRDP share in Agricultural Sector of province i year t
 Educ_{it} : Percentage of Secondary School Enrollment Rate of province i year t
 μ_i : Fixed or random effect
 $\theta_0, \theta_1, \theta_2, \theta_3, \theta_4, \theta_5, \theta_6$: Coefficient
 ε_{it} : Error term

Model 3

The third model is the extension of the second model, where the difference is in the dependent variable. In this model, it employs the change of the poverty measurement. It is based on the consideration that only by using the poverty level, the relationship between PNPM and poverty can be persistently negative. However, the reduction of the poverty may decrease, along with the increase in PNPM realization. Therefore, to know the effectiveness of PNPM to reduce the poverty, this model is built by using change of poverty measurement.

Model 3.1

$$Cpovrate_{it} = \theta_0 + \theta_1 Povratet_{1it} + \theta_2 Growth_{it} + \theta_3 Growth_{it} * PNPM_{it} + \theta_4 Gini_{it} + \theta_5 Unemp_{it} + \theta_6 Educ_{it} + \theta_7 Agri_{it} + \mu_i + \varepsilon_{it}$$

Model 3.2

$$Cpovgap_{it} = \theta_0 + \theta_1 Povgapt_{1it} + \theta_2 Growth_{it} + \theta_3 Growth_{it} * PNPM_{it} + \theta_4 Gini_{it} + \theta_5 Unemp_{it} + \theta_6 Educ_{it} + \theta_7 Agri_{it} + \mu_i + \varepsilon_{it}$$

Model 3.3

$$Cpoorest_{it} = \theta_0 + \theta_1 Poorestt_{1it} + \theta_2 Growth_{it} + \theta_3 Growth_{it} * PNPM_{it} + \theta_4 Gini_{it} + \theta_5 Unemp_{it} + \theta_6 Educ_{it} + \theta_7 Agri_{it} + \mu_i + \varepsilon_{it}$$

where:

$Cpovrate_{it}$: Change of Poverty Rate of province i year t

$Cpovgap_{it}$: Change of Poverty Gap of province i year t

$Cpoorest_{it}$: Change of Average Income Proportion of 40% Poorest People of province i year t

$Povratet_{1it}$: Initial Poverty Rate ($Povrate_{t-1}$) of province i year t

$Povgapt_{1it}$: Initial Poverty Gap ($Povgap_{t-1}$) of province i year t

$Poorestt_{1it}$: Initial Average Income Proportion ($Poorest_{t-1}$) of province i year t

Model 4

In the previous model, the PNPM program used is the aggregate PNPM program. It means that PNPM program is the sum of the each sub-program. In this model, each of the programs becomes the independent variables. Hence, there are 14 programs as an independent variable.

$$Povrate_{it} = \theta_0 + \theta_1 Growth_{it} + \theta_2 Growth_{it} * SubPNPM_{rit} + \theta_3 Gini_{it} + \theta_4 Unemp_{it} + \theta_5 Educ_{it} + \theta_6 Agri_{it} + \mu_i + \varepsilon_{it}$$

where:

$SubPNPM_{rit}$: Log of r subPNPM realization/population of province i year t

4.4 The Expected Sign

According to the literature review above, the expected sign of each variables as follows:

Table 4. Expected Sign of Variables

Variable	Expexted Sign	Mechanism	Reference
Growth	-	<ul style="list-style-type: none"> • Job opportunity • Investment both physical and human capital • Infrastructure 	Ravallion and Chen (2001)
Growth*PNPM	-	<ul style="list-style-type: none"> • Job opportunity • Infrastructure • Productivity 	Dongier (2003)
Gini	-	Rising inequality also reduced the impact of future economic growth on poverty reduction.	Ravallion (2001)
Unemp	+	<ul style="list-style-type: none"> • Loss opportunity to earn the money 	Osmani (2003), Islam (2004)
Agri	-	<ul style="list-style-type: none"> • Improve the rural income • Stabilize the food and non-food price • Create the economic opportunity on the non-farm sector 	Doward et al (2001), FAO (2004)
Educ	-	<ul style="list-style-type: none"> • Income • Productivity 	Bourguignon and Morrison (2000), Birdshall (2003)

Source: Author's summarize

Chapter 5

Empirical Result and Discussion

As a main purpose of this research, the empirical data tries to capture the impact of economic growth to the elasticity of the poverty. Specifically, it will be used to answer the question whether the economic growth, which is the result of the PNPM program, can minimize the poverty incidence. If the economic growth has proven to be able to release people from poverty, the constructed model is conducted to assess whether the poverty alleviation policy made by the government is pro-poor growth.

Considering that the PNPM program was run from 2007 to 2014, the panel data consists of cross section data of 33 provinces in Indonesia and annual time series data from 2007 to 2013. Thus, the total number of observations is 231 data. Before gathering the independent variables into the model, the data analysis begins with the relationship between poverty rate, economic growth, and economic growth which have been affected by the PNPM program. Then, it will be followed by the empirical analysis which includes all of the variables.

5.1 Model 1 (The Relationship among Poverty Rate, Economic Growth and Poverty Alleviation Policy)

The aim of this model is to measure how far the poverty rate can be explained by the growth and PNPM program. The result will provide an initial conclusion whether PNPM program is an appropriate policy which favors the poor people, by measuring the reduction in the head count index. It also provides the growth elasticity of poverty which assesses how much the change in the poverty rate occurs when the growth rate increases by one percent. Moreover, the interaction between growth and variables of PNPM realization is useful to analyze to what extent the growth participate in the poverty alleviation when the PNPM program is run.

According to Dollar and Kraay (2002), the growth is regarded pro-poor growth if the change in poverty is negatively correlated to the change in income (growth). Hence, the coefficient of growth variable is expected to have a negative sign. The negative sign is also expected to come up for the interaction variable between growth and PNPM program. The negative sign of interaction variable indicates that the growth triggered by the PNPM program will reduce the poverty more than the effects which solely come from the economic growth.

Table 5 The Linkage among Poverty, Growth and Policy

Methods	OLS		Fixed Effect		Random Effect	
	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error
Variable						
Growth	- 0.379***	0.105	- 1.238***	0.134	- 0.533***	0.134
Growth*PNPM	0.526***	0.189	- 0.319*	0.142	- 0.292**	0.175
Constant	2.335	0.291	9.133	0.480	5.851	0.448
Prob>F	0.000		0.000		0.000	
R ²	0.105		0.667		0.656	
Number of Ob-	130		130		130	

servation						
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Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; * significant at 10%

From the result table above, growth variable with proxy log natural GDRP per capita has a negative impact to the poverty in the three models using OLS, FEM and REM. It means that an increase in growth will reduce the poverty rate. A 1% increase in economic growth is estimated to reduce 0.38% (OLS), 1.24% (FEM) and 0.53% (REM) of people. Hence, it can also be stated that the poor gain benefits from the raising economic growth or the growth is called pro-poor growth.

The interesting finding is the coefficient of interaction variable Growth*PNPM using FEM and REM. The negative sign indicates that the implementation of PNPM program encourages the economic growth to perform better in order to alleviate the poverty. As a mention before that this paper employs the absolute terms, the measurement of pro-poor growth is calculated by growth elasticity of poverty. Using FEM, growth elasticity of poverty becomes:

$$\varepsilon_{PG} = \frac{dPov}{dGrowth} = -1.238 - (0.319 * pnpm)$$

Without interaction variable, growth elasticity of poverty is only affected by the growth. However, the implementation of PNPM program makes the growth elasticity of poverty is not only depends on the growth but also to PNPM fund. From the equation above, it shows that the increasing of PNPM realization fund would tend to alleviate the elasticity. This means that the more the PNPM fund, the lower the poverty rate. Therefore, it gives an initial conclusion that the PNPM program has been successful to alleviate the poverty.

5.2 Model 2 (The Estimation Result of Poverty Level, Growth, Growth*PNPM, Gini Coefficient, Unemployment, Agricultural Sector and Education)

To have an unbiased result of the estimated model, the control variables and other independent variables should be included in the model, considering that the poverty rate is not only influenced by the growth and policy, but also other factors. Hence, the estimated model involves the variable Gini coefficient, unemployment rate, education and agricultural sector. This model will be executed using pooled-OLS regression, FEM and REM. Thus, it will decide on the most appropriate model by using Chow test and the Hausman test. The Chow test is used to compare between OLS and FEM, while the comparison between FEM and REM can be conducted using Hausman test.

Table 6 Chow and Hausman Test

Test	Chi2	p-value	Result
Chow	68.89	0.000	Fixed Effect
Hausman	14.64	0.023	Fixed Effect

Source: Author's computation

The null hypothesis for the Chow test is that the individual effect of each province is not different from zero. It means that there is no different characteristic among provinces. From the table, the result shows that the p-value at 0.000 significantly rejects H_0 . Hence, it can be concluded that the individual effect among provinces is significantly different. Thus, the more appropriate model is FEM which can capture the individual effect.

After conducting the Chow test, the next model specification test is the Hausman test. The purpose of this test is to check whether the error term has a correlation to the explanatory variable. If it has proven the existence of correlation, the REM is better to employ than FEM. Using 5% significance, the p-value at 0.023 shows that the data has an adequate evidence to reject H_0 . Therefore, the FEM is expected to perform better than REM to analysis the model.

Based on the Model Specification test, the best model is the FEM. Hence, it will discuss the interpretation of each variable using the FEM. The basic principal is to measure the elasticity of each variable to the poverty rate.

5.2.1 Model 2.1 (Poverty Rate as a Dependent Variable)

In this section, it will provide the estimation result of the model 2.1 using OLS, Fixed Effect and Random Effect Model. Thus, the impact of each independent variable on dependent variable will be explained in the following part.

Table 7 Estimation Result of Poverty Rate, Growth, Growth*PNPM, Gini Coefficient, Unemployment, Agricultural Sector and Education

Methods	OLS		Fixed Effect		Random Effect	
	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error
Variable						
Growth	0.081	0.110	- 0.392***	0.164	0.288	0.110
Growth*PNPM	- 0.036	0.178	- 0.532***	0.118	- 0.432***	0.117
Gini	0.313	1.066	- 0.675***	0.281	- 0.864***	0.289
Unemp	0.056***	0.015	0.018***	0.006	0.238***	0.007
Agri	3.726***	0.488	- 0.808	0.903	1.525**	0.662
Educ	0.001	0.007	- 0.015***	0.002	- 0.014***	0.002
Constant	0.836**	0.477	6.631***	0.837	3.894***	0.535
Prob>F	0.000		0.000		0.000	
R ²	0.397		0.816		0.794	
Number of Observation	130		130		130	
Variable Definition						
Povrate	Log rate of Head Count Index (Poverty Level)					
Growth	Log of GDRP per capita					
Growth*PNPM	Log of growth*Log of PNPM realization					
Gini	Gini Coefficient					

Unemp	Unemployment Rate
Agri	Percentage of GRDP share in Agricultural Sector
Educ	Percentage of Secondary School Enrollment Rate

Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; *significant at 10%

5.2.1.1 The Effect of Economic Growth on Poverty

The statistical estimation reveals that the economic growth is negatively correlated to the poverty rate. The better the economics perform, the less the people who live below the poverty line. The p-value at 0.01 indicates that the negative coefficient is significantly and statistically different from zero. Since the growth and poverty rate variable are estimated in the logarithm terms, the coefficient value -0.392 means that a 1% increase in the economic growth will tend to reduce 0.392% in the poverty rate.

This result confirms the notion of Ravallion and Chen (2001) which states that the growth and poverty reduction should correlate in the opposite direction. The increase (reduction) of poverty will be followed by the reduction (increase) of the poverty.

5.2.1.2 The Effect of Interaction between Growth and PNPM Program on Poverty

The result of this model is similar to the model 1. The negative coefficient is significant at the level 1% since the p-value is 0.000. The output estimation indicates that PNPM is an appropriate policy to alleviate the poverty. It is based on the interpretation of the interaction variable as follows:

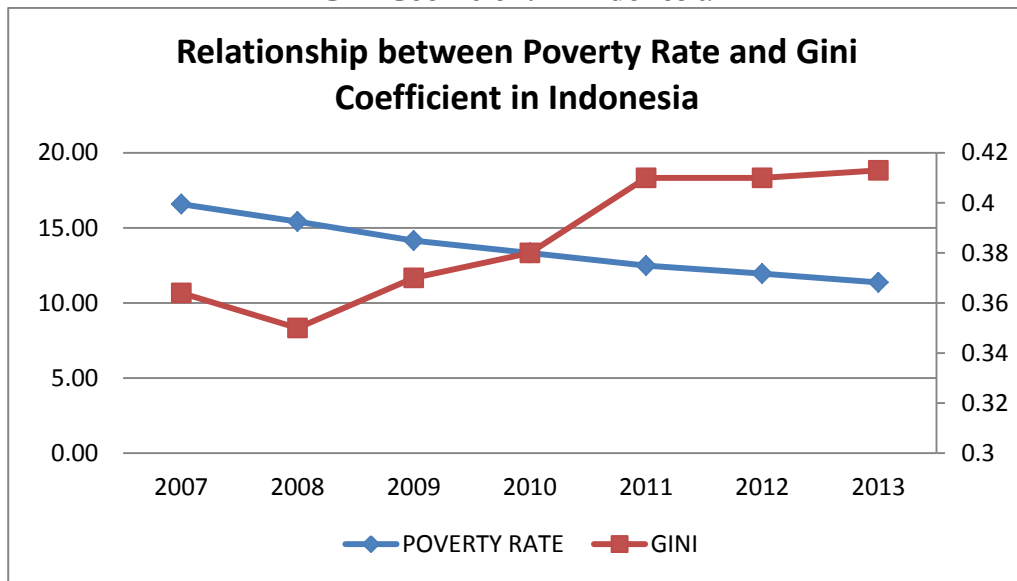
$$\varepsilon_{PG} = \frac{dPov}{dGrowth} = -0.392 - (0.532 * pnpm)$$

Since *Pov*, *Growth*, and *pnpm* variable in the form of logarithm, variable interpretations becomes percentage of growth. If the PNPM fund is 0, then the growth elasticity would be -0.392 which denotes that the increasing of 1% economic growth would reduce the poverty by 0.392%. However, if the growth of *pnpm* increase 1%, thus the increasing of 1% economic growth would tend to reduce more by 0.924%.

5.2.1.3 The Effect of Inequality on Poverty

The income inequality in this research is captured by the Gini coefficient per province. Theoretically, the Gini coefficient is expected to have a positive and significant coefficient which signifies that the widening income gap between the poor and the rich has the worse impact to the poor. However, empirical data show the opposite conclusion. The coefficient for Gini either FEM or REM yields negative and significant coefficient. It means that the more unequal the income distribution in the society, the lower the poverty rate.

Figure 11 Relationship between Poverty Rate and Gini Coefficient in Indonesia

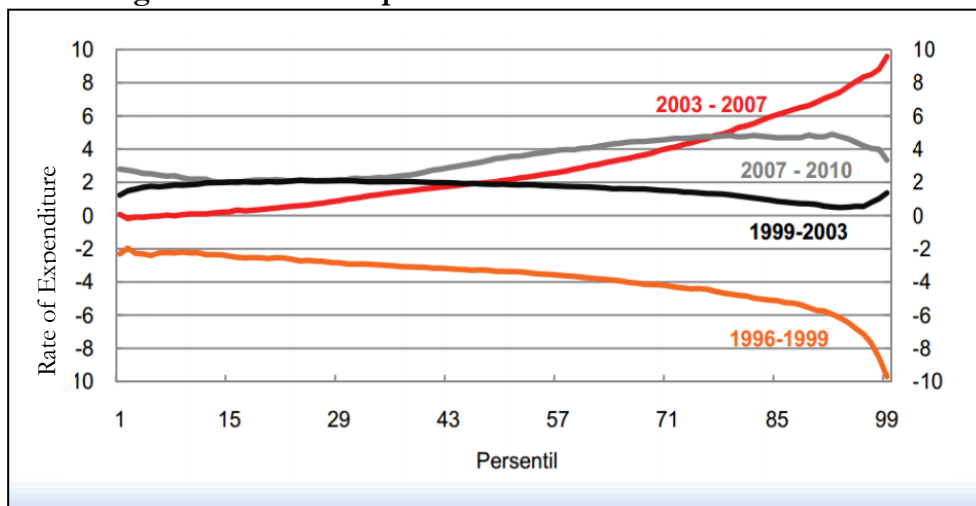


Source: Statistics Indonesia (2015), processed by author

From the figure 11 above, the descriptive data shows that the poverty rate and the income inequality in Indonesia have a negative correlation. The more the poverty reduces, the wider the gap between the rich and the poor. The decrease in the poverty rate accompanied by the alleviation of Gini index only happened in 2008. The negative correlation can be due to the fact that the welfare of both poor and rich people grows together. However, the well-being of the rich people increases faster than that of the poor people. Therefore, the income inequality remains high, even though the number of poor people decreases.

To reinforce the argument, below is shown the rate of the expenditure based on the deciles of income level.

Figure 12 Rate of Expenditure Based on the Income Level



Source: National Development Planning Board (2012)

Based on the National Development Planning Board's report, in the period 1996-1999 and 1999-2003, the welfare of poor people, which is described by the rate

of expenditure, increases faster than that of the rich people. However, in the period of 2003-2007 and 2007-2010, the figure shows the opposite conclusion. In the period of 2003-2007, the prosperity rate rose along with the increase in income level, and the highest income inequality occurred in this period. Meanwhile, in the period of 2007-2010, the welfare rate of 30% of people with the highest income grew faster than the rest. Consequently, the Gini index remains high. As cited in the National Development Planning Board (2012), Papanek (2011) reveals that the poverty reduction accompanied by high Gini index is likely due to the increase in commodity prices, particularly in natural resource sector, such as mining and large plantation sector, over years. Further, the benefits gained from the increase are mainly canalized to people of the middle - upper class. Hence, the well-being of those with high income level moves faster than that of people with low income.

5.2.1.4 The Effect of Unemployment on Poverty

The statistic result for the unemployment rate elasticity of poverty is in line with the previous study. The p-value below 0.01 gives a reasonable conclusion that the coefficient of unemployment rate variable is statistically significant. The elasticity of poverty following 1% increase in the economic growth will raise the unemployment rate by 0.02%. This is based on a consideration that the engagement in a job is the only way to get income, which is meant to meet the basic needs. Hence, the more people are jobless, the more people fail to live worthily, which later yields a high poverty rate. This result confirms the findings of Osmani (2003) and Islam (2004) which reveal that unemployment is one of the causes of poverty.

5.2.1.5 The Effect of Education on Poverty

Education, as a proxy for human capital, describes the types of people's jobs in certain regions. The higher the average education level of people, the more the people who work in the formal sector, which tends to pay a higher salary. Hence, the coefficient of education variable is expected to have a negative sign. According to the estimation result, the coefficient is significant in the level of 1%. The coefficient indicates that if the number of people who graduate from the secondary school increases by 1%, the welfare of the certain people will raise and reduce the poverty rate by 0.015%

5.2.1.6 The Effect of Agricultural Sector on Poverty

Considering that Indonesia is an agricultural country, the model tries to accommodate the effects of agricultural sector on the poverty rate. Nevertheless, the empirical model using FEM shows that the agricultural sector does not have a significant effect on the poverty reduction. It is supported by the research of Kuncoro (2006) which analyzes the effects of agricultural sector on the poverty reduction in East Java, Indonesia. The reason behind the finding is that because the productivity of the agricultural sector is still low. Hence, the proportion of this sector in GDP has not been able to reduce the poverty. The benefit from the agriculture is insufficient to increase the income of farmers. The low productivity can be due to the fact that most of the Indonesia farmers still rely on the traditional methods.

Moreover, the estimation model using REM is noted that it is significant but appears in the opposite sign. Based on the REM result, the increasing percentage of GDRP on agriculture will boost the poverty rate to increase. Indeed, this result is contrary to our expectation.

5.2.1.7 Individual Effect

Due to this model employ Fixed Effect Model (FEM), there are ($i-1$) dummy variables which capture unobserved heterogeneity variable. Since the data has 33 categorical provinces, then it provides 32 dummy variables. Province 1, which describes Aceh Province, becomes base of dummy variable. Province 14 (Yogyakarta) and Province 32 (West Papua) have been automatically omitted from the estimation result because of the collinearity issues.

From the estimation result, which can be seen in the **Appendix 8**, most of the dummy variables are statistically significant difference from the dummy base. Compare to the dummy base (Aceh province), poverty rate of other provinces mostly lower than Aceh rate. Province 33 (Papua) has the highest coefficient of dummy individual effect. It means that the poverty rate of Papua is basically higher than others because of unobserved variables (variables which are not included in the model).

5.2.2 Comparison between Model 2.1 (Poverty Rate as a Dependent Variable), Model 2.2 (Poverty Gap as Dependent Variable) and Model 2.3 (Average Income Distribution of 40% Poorest People as Dependent Variable)

In the previous section, the model utilizes the poverty rate as a dependent variable. In this section, the model will be extended by employing the different measurement of poverty, namely head count per population (poverty rate), poverty gap and the average income proportion of 40% poorest people. Thus, the results of the three models will be compared..

Based on Table 7 below, the estimation result of model 2.1 concludes that the economic growth has a negative impact on the poverty rate. The higher the economic growth performs, the lower the poverty rate is. On the other hand, in model 2.2, the coefficient of the Poverty Gap shows a positive sign, which means that the increase of the economic growth will trigger a high poverty gap. In the other words, the increase of the economic growth will both diminish the poverty rate and widen the poverty gap.

Table 8 Comparison between Model 2.1 and Model 2.2

Methods	Model 2.1 Poverty Rate		Model 2.2 Poverty Gap	
	Coefficient	Std Error	Coefficient	Std Error
Variable				
Growth	- 0.392***	0.164	0.003	0.013
Growth*PNPM	- 0.532***	0.118	- 0.019**	0.010
Gini	- 0.675***	0.281	- 0.011	0.022
Unemp	0.018***	0.006	0.000	0.000
Agri	- 0.808	0.903	0.107	0.072
Educ	- 0.015***	0.002	- 0.000*	0.000
Constant	6.631***	0.837	0.058	0.067
Prob>F	0.000		0.000	

R ²	0.816		0.373	
Number of Observation	130		130	
Variable Definition				
Povrate	Log rate of Head Count Index (Poverty Level)			
Povgap	Log rate of Poverty Gap (Poverty Level)			
Growth	Log of GDRP per capita			
Growth*PNPM	Log of growth*Log of PNPM realization			
Gini	Gini Coefficient			
Unemp	Unemployment Rate			
Agri	Percentage of GRDP share in Agricultural Sector			
Educ	Percentage of Secondary School Enrollment Rate			

Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; * significant at 10%

The contradicting impact of the economic growth on the poverty rate and the poverty gap is probably due to the fact that the advantages of the economic growth are not equally distributed to the poor, as a whole. Some of the poor people may have succeeded to free themselves from the poverty, and consequently reduces the poverty rate. On the other hand, the well-being of some other poor people may have deteriorated. Hence, the average income of the poor people moves further away from the poverty line. As a result, the poverty gap will increase. Therefore, the imbalance in development still helps alleviate the poverty rate, but, at the same time, also increases the poverty gap.

In the model 2.3, this study also employs the average income distribution of 40% of the poorest people to capture the poor people's condition. Indeed, the 40% of the poorest people actually do not purely refer to the real poor people, as it might have included those of middle income class. Hence, the author has tried to find data of distribution of 10% of the poorest people, by contacting the Statistics Indonesia. However, the Statistics Indonesia could not provide it. Therefore, this paper keeps using data of distribution of 40% of the poorest people as a dependent variable. The estimation result, which shows that neither variable growth nor interaction variable Growth*PNPM significantly reduce the poverty rate, can be seen in the **Appendix 6**.

5.3 Model 3 (Change of the Poverty Measurement as a Dependent Variable)

The model comparison above compares the models by using different poverty measurements in the poverty level. In this following part, it compares the models based on the change of poverty i.e

- $cpovrate = Povrate_t - Povrate_{t-1}$
- $cpovgap = Povgap_t - Povgap_{t-1}$
- $cpoorest = Poorest_t - Poorest_{t-1}$

Table 9 Comparison between Model 3.1 and Model 3.2

Methods	Model 3.1		Model 3.2	
	Change of Poverty Rate		Change of Poverty Gap	
	Coefficient	Std Error	Coefficient	Std Error
Variable				
Povratet_1	-0.688	1.551		
Povgapt_1			-0.614***	0.227
Growth	0.930**	0.415	0.020	0.016
Growth*PNPM	- 0.163	0.306	-0.016***	0.006
Gini	- 0.069	0.698	-0.027	0.019
Unemp	- 0.011	0.017	-0.000	0.000
Agri	4.356**	2.282	0.107	0.097
Educ	- 0.000	0.007	-0.000	0.000
Constant	- 4.304**	2.210	-0.030	0.082
Prob>F	0.236		0.017	
R ²	0.09		0.294	
Number of Observation	130		130	
Variable Definition				
Cpovrate	Change of Poverty Rate			
Cpovgap	Change of Poverty Gap			
Povratett_1	Initial Poverty Rate (Povrate _{t-1})			
Pocgapt_1	Initial Poverty Gap (Povgap _{t-1})			
Growth	Log of GDRP per capita			
Growth*PNPM	Log of growth*Log of PNPM realization			
Gini	Gini Coefficient			
Unemp	Unemployment Rate			
Agri	Percentage of GRDP share in Agricultural Sector			
Educ	Percentage of Secondary School Enrollment Rate			

Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; *significant at 10%

In the model 3, the expected sign of the coefficient must be different from the previous model because it employs the change of the poverty as a dependent variable. The growth variable is expected to have a positive sign. Meanwhile, the interaction variable Growth*PNPM is also expected positive. the increase in the economic growth can reduce the poverty rate. Like the growth, the existence of the PNPM program will increase the alleviation poverty rate more.

From table 9 above, the coefficient of growth variable in the model 3.1 shows a positive and significant sign at 5%. It indicates that a one percent increase in the

economic growth will tend to raise 0.93% of poverty reduction rate. For example, if the one percent increase in the growth will reduce the poverty rate by $x\%$, then the next one percent increase will diminish $(x+0.93)\%$ of the poverty rate. It is in line with the result of model 2, which works in the poverty level. In that model, the one percent increase in the economic growth will have an offset to reduce 0.392% of poverty rate.

In the model 3.2, the coefficient of interaction variable between growth and PNPM shows a significant and negative sign. It means that the existence of PNPM, which effects the growth, has a negative impact on the poverty reduction rate. The growth itself does not significantly affect the poverty alleviation, while the implementation of PNPM will reduce the rate of poverty gap. In line with model 2.3, model 3.3 also employs the change of 40% of the poorest's income proportion as dependent variable. However, there is no one significant variable for model 3.3 which is documented in the **Appendix 7**.

5.4 Model 4 (Each of the Sub-Program as an Independent Variable)

In this model, each of the independent variable will be regress as an independent variable which is separate from other sub-programs. After involving fourteen sub-programs, only eight of them can be engaged in the model. It is due to the fact that the remaining sub programs are only implemented in certain regions and within certain time periods. Therefore, the observation is very limited, and the data cannot be analyzed. The sub-programs, which can be regressed, consists of such Sub-programs as Accelerating the Development of Disadvantaged and Special Areas, Smart and Healthy Generation PNPM, Regional Development of Socio-economic Infrastructure, Participatory Development System Program (P2SPP), Tourism PNPM-Mandiri, Rural PNPM Mandiri, Rural Neighbourhood Independence and Urban PNPM Mandiri.

From the table 9 below, it can be viewed that only Smart and Healthy Generation, Tourism, Rural and Urban sub-programs significantly reduce the poverty when they are engaged in the economic growth. The table shows that the increase in PNPM realization in those sub-programs will likely reduce the number of poor people. Without the involvement of PNPM in the Tourism sector, the growth will tend to reduce 0.44% of the poverty rate. However, the implementation of PNPM will likely reduce the poverty rate more, at 0.63%.

The essence of the PNPM program lies in urban and rural sub-programs. It is due to the sharply different structures of the Indonesian population, between those who live in rural and urban areas. Hence, these two sub-programs have become the pioneer for other sub-programs. Further, the programs are applied in almost all regions in Indonesia. From the estimation result, it is seen that the statistical method supports the statement that those two sub-programs have a fairly significant role in the poverty alleviation.

Table 10 Comparison of Models 4 (Each Sub-Program as a Independent Variable)

	Sub-program a		Sub-program b		Sub-program d		Sub-program e		Sub-program f		Sub-program i		Sub-program l		Sub-program m	
	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error	Coefficient	Std Error
growth	-0.800**	0.391	-0.588	0.379	-1.418**	0.583	-0.512***	0.199	-0.444	0.302	-0.238*	0.130	-0.022	1.712	-0.082	0.096
growth_a	0.611	0.399														
growth_b			0.178*	0.098												
growth_d					0.236	0.139										
growth_e							-0.066	0.080								
growth_f									-0.199***	0.076						
growth_i											-0.109**	0.052				
growth_l													-0.194	0.638		
growth_m															-0.193***	0.044
gini	-2.768***	0.732	-0.438	0.373	-0.381	0.484	-0.252	0.378	-0.029	0.356	-0.904***	0.265	-0.139	1.931	-1.065***	0.232
unemp	0.013	0.020	0.032	0.018	-0.014	0.025	0.036***	0.011	0.010	0.008	0.034***	0.006	0.012	0.124	0.031***	0.006
educ	-0.016	0.016	0.017	0.013	0.002	0.010	-0.013***	0.005	-0.011*	0.006	-0.016***	0.002	-0.018	0.031	-0.017***	0.002
agri	-0.255	1.361	3.254	2.055	2.169*	1.151	1.369	0.943	-1.370	0.952	-0.553	0.580	0.658	3.596	-0.664	0.494
_cons	5.331***	2.024	4.002*	2.235	7.453***	2.414	4.822***	1.091	5.527***	1.383	4.451***	0.644	3.267	8.450	4.180***	0.493
Prob>F	0.030		0.000		0.000		0.000		0.000		0.000		0.214		0.000	
R ²	0.443		0.799		0.890		0.597		0.466		0.501		0.922		0.448	
Number of Observation	38		25		24		78		92		197		12		213	

Variable Definition

Sub-program a	Accelerating the Development of Disadvantaged and Special Areas
Sub-program b	Smart and Healthy Generation PNPM
Sub-program d	Regional Development of Socio-economic Infrastructure
Sub-program e	Participatory Development System Program (P2SPP)
Sub-program f	Tourism PNPM-Mandiri
Sub-program i	Rural PNPM Mandiri
Sub-program l	Rural Neighbourhood Independence
Sub-program m	Urban PNPM Mandiri

Source: Author's computation

Note: * significant at 1%; ** significant at 5%;

***significant at 10%

Chapter 6

Conclusion

This research investigates the effectiveness of the poverty alleviation program. As one of the major programs to reduce poverty, community driven development (PNPM-program) is considerably capable to move the people out of poverty. Using the qualitative method, the research from Syukri et al. (2013) reveals the fruitfulness of the PNPM-rural program in East Java, West Sumatra and South East Sulawesi. Even though the previous study concludes that PNPM is effective and efficient, the program started in 2007 was stopped by the government in 2015. Therefore, this research examines whether the economic growth which is influenced by the PNPM program is a pro-poor growth.

To achieve that goal, the study employs six independent variables namely economic growth, interaction variable between growth and PNPM program, Gini Coefficient, education, agricultural sector and unemployment. Using those variables, four models are employed: first, the model includes growth and interaction variable growth and PNPM program. Second, the model involves all independent variables, where the poverty measurement is examined at the poverty level. Third, the model employs the change of poverty as a dependent variable. Last, the model treats each of the sub-programs PNPM as an independent variable.

From the first model, using the Fixed Effect Model, it can be concluded that the one percent growth increase would be able to reduce poverty to nearly 1.24 percent. Further, accompanied by the PNPM program, the growth would reduce poverty more. It would result in the same conclusion if the model uses the Random Effect Model. Since the implementation of the PNPM program could reduce poverty more, it indicates that the poverty reduction strategy with empowerment based is an appropriate policy to reduce poverty.

In the second model, the effect of PNPM to the poverty reduction also shows the same estimation sign. However, the effect is slightly smaller than the first model. For the other independent variables, the agricultural sector variable does not have a significant effect to the poverty alleviation. Meanwhile, the unemployment rate, Gini coefficient and education play important roles to the poverty reduction. The extended model involving changing the dependent variable using the poverty gap and the average income distribution of 40% poorest people shows that the economic growth accompanied by the PNPM would reduce the poverty rate but increase the poverty gap.

Besides working at the poverty measurement level, this paper also build a model with change of poverty as the dependent variable. The statistical estimation shows that the growth is categorized as a pro-poor growth because the better the economic growth performs, the higher the reduction of the poverty is. Nevertheless, it is not offset by the improvement of the poverty gap. The reason behind the contradicting result is probably because the benefit of the economic growth is not proportionately distributed to the poor. Part of the poor enjoys the development more than the rest. Therefore, the poverty rate is going down but the poverty gap is rising.

In the last model, each of the sub-programs is treated as the independent variable. Not all of the sub-programs could be regressed in the model because some of them are only relevant in specific regions. Thus, there are only eight sub-programs which can be examined. Furthermore, the sub-programs which play a big role to reduce poverty more consist of Tourism program, Rural program and Urban program.

The increase in funding in those three sub-programs accompanied by the economic growth would likely to press the poverty rate at the lower level.

Based on the empirical result, the government should continue the program. The empirical evidence shows a convincing result: the policy is categorized as a pro-poor policy. Further, the implementation of PNPM program which collaborates with the economic growth plays a major role in the poverty alleviation program. Therefore, it is suggested that the government should continue the PNPM program. It is expected that the poverty alleviation will be more successful if the PNPM is resumed.

Reference

- Bourguignon, F. and C. Morrison. (2000). Income Distribution, Development and Foreign Trade: a Cross–Sectional Analysis. *European Economic Review*, 34 (11), 606-708.
- Birdsall, N. (2003) 'Social Development in Economic Development', *World Bank Policy Research Working Papers, WPS 1123*. Washington DC: World Bank.
- BPS (2003) *Statistics Indonesia*. Jakarta: Badan Pusat Statistik.
- Dollar, D. and A. Kraay (2000) 'Trade, Growth, dan Poverty', *World Bank Policy Research Department Working Paper No.2587*. Washington, DC: World Bank.
- Dollar, D. and A. Kraay (2002) 'Growth is Good for the Poor', *Journal of Economic Growth* 7(3): 195-225.
- Dongier, P., et al (2003) 'Community Driven Development', World Bank Poverty Reduction Strategy Paper No.1. Washington DC: World Bank.
- Dorward, A., J. Kydd, et al. (2001). 'A Policy Agenda for Pro-Poor Agricultural Growth.' Kent, Imperial College of Science, Technology and Medicine.
- Ernst, C., & J. Berg (2009) 'The Role of Employment and Labour Markets in the Fight Against Poverty', *Promoting Pro-poor Growth: Employment*. Geneva: International Labour Organization.
- Food and Agriculture Organization (FAO) (2004) 'Socio-economic Analysis and Policy Implications of the Roles of Agriculture in Developing Countries: Summary Report of Agriculture Project'. Rome, Italy: FAO
- Grootaert, C. and D. Narayan (2000) 'Local Institutions, Poverty, and Household Welfare in Bolivia', *Local Level Institutions Working Paper No. 9*. Washington, D.C: Social Development Department World Bank.
- Hanmer, L., & F. Nashchold (2000). 'Attaining the International Development Targets: Will growth be Enough?' *ODI Working Paper*. ODI, London.
- Hasan, R. and M. G. Quibria (2002) 'Poverty and Patterns of Growth', *ERD Working Paper No.18*. Manila: Asian Development Bank
- Islam, R. (2004). The Nexus of Economic Growth, Employment and Poverty Reduction: An Empirical Analysis. Geneva, Recovery and Reconstruction Department, International Labour Office.
- Kakwani, N. and E.M. Pernia (2000) 'What is Pro-Poor Growth?', *Asian Development Review* 18(1):1-16.
- Kuncoro, M (2006) *Ekonomika Pembangunan: Teori, Masalah dan Kebijakan*. Yogyakarta: UPP STIM YKPN

- Lam, W. F (1998) *Governing Irrigation Systems in Nepal: Institutions, Infrastructure and Collective Action*. Oakland, Cal.: ICS Press.
- Nallari, R., B. Griffith and World Bank (2011) *Understanding Growth and Poverty: Theory, Policy, and Empirics*. Washington, D.C: World Bank.
- National Development Planning Board (2012) 'Rasio Gini di Indonesia dalam 5 Tahun Terakhir'. Jakarta: National Development Planning Board. Accessed 20 May 2015 <http://www.bappenas.go.id/files/3913/5022/6047/rasio-gini-di-indonesia-1_20121217143142_3712_1.pdf>
- Osmani, S. R. (2003). *Exploring the Employment Nexus: Topics in Employment and Poverty*. New York & Geneva, ILO-UNDP Programme.
- PNPM Support Facilities (2014) 'Block Grant Cycle' Accessed 1 July 2015 <http://psflibrary.org/catalog/repository/final_How%20it%20Works_English.pdf>
- Priyarsono, D.S. and A. Hajiji (2009) 'Economic Growth, Income Inequality, and Poverty Reduction in Riau Province 2002-2008', *International Conference on Business and Economics (ICBE)* 1(1).
- Rahim, A and B.S Handoko (2014) 'Pengaruh Program PNPM Mandiri Pedesaan, Pengeluaran Pemerintah (Belanja Modal) dan PDRB terhadap Tingkat Kemiskinan di Provinsi Maluku, 2008-2012', PhD thesis. Indonesia: Gadjah Mada University.
- Ravallion, M. and S. Chen (1997) 'What Can New Survey Data Tell us about Recent Changes in Distribution and Poverty?', *The World Bank Economic Review* 11(2): 357-382.
- Ravallion, M (1999) 'Is More Targeting Consistent with Less Spending?', *International Tax and Public Finance* 6(3): 411-19.
- Ravallion, M and S. Chen (2001) *Measuring Pro-Poor Growth*. Development Research Group. World Bank.
- Ravallion, M. (2004) 'Pro-Poor Growth: A Primer', *World Bank Policy Research Working Paper No.3242*
- Sara, Jennifer, and T. Katz (1997) 'Making Rural Water Sustainable: Report on the Impact of Project Rules'. Washington, D.C, United Nations Development Program (UNDP)-World Bank Water and Sanitation Program.
- Simpadu (2015) 'PNPM Realization Data' Accessed 15 May 2015 <<http://simpadu-pk.bappenas.go.id/profilprogram.html>>
- Soubbotina, Tatyana P. (2000) 'Beyond economic growth: meeting the challenges of global development' WBI learning resources series. World Bank. Washington DC. Accessed 14 June 2015

- <http://www.worldbank.org/depweb/beyond/beyondbw/begbw_all.pdf>
- Statistics Indonesia (2010) 'Gross Domestic Product' Accessed 5 May 2015
<<http://www.bps.go.id/Subjek/view/id/169#subjekViewTab3|accordion-daftar-subjek2>>
- Statistics Indonesia (2011) 'Penjelasan Data Kemiskinan'. Jakarta: BPS (press release, 27 January)
- Statistics Indonesia (2013) 'Poverty' Accessed 10 May 2015
<<http://www.bps.go.id/Subjek/view/id/23#subjekViewTab3|accordion-daftar-subjek1>>
- Statistics Indonesia (2014) 'Employment' Accessed 12 May 2015
<<http://www.bps.go.id/linkTabelStatis/view/id/971>>
- Statistics Indonesia (2014) 'Poverty' Accessed 10 May 2015
<<http://www.bps.go.id/Subjek/view/id/23#subjekViewTab3|accordion-daftar-subjek1>>
- Statistics Indonesia (2015) 'Poverty' Accessed 30 May 2015
<<http://www.bps.go.id/Subjek/view/id/23#subjekViewTab3|accordion-daftar-subjek1>>
- Sukidjo, S. (2009) 'Strategi Pemberdayaan Pengentasan Kemiskinan pada PNPM Mandiri', *Cakrawala Pendidikan* 2(2):155-164
- Sumodiningrat, G (1999) *Pemberdayaan Masyarakat dan Jaring Pengaman Sosial*. Jakarta: Gramedia Pustaka Utama.
- Suryahadi, A., D. Suryadarma and S. Sumarto (2009) 'The Effects of Location and Sectoral Components of Economic Growth on Poverty: Evidence from Indonesia', *Journal of Development Economics* 89(1): 109-117.
- Syukri, M., S. Mawardi and Akhmadi (2013) 'Studi Kualitatif Dampak PNPM-Pedesaan di Provinsi Jawa Timur, Sumatra Barat, dan Sulawesi Tenggara, Smeru Research Institute.
- Tang, S. Y (1992) *Institutions and Collective Action: Self-Governance in Irrigation*. Oakland, Cal.: ICS Press.
- Timmer, C.P. (2004) 'The Road to Pro-Poor Growth: The Indonesian Experience in Regional Perspective', *Bulletin of Indonesian Economic Studies* 40(2): 177-207.
- Venkatamaran, A and J. Falconer (1999) 'Rejuvenating India's Decimated Forests through Joint Action: Lessons from Andhra Pradesh'. Washington, D.C: World Bank.
- Warr, P. (2005) 'Pro-poor Growth', *Asian-Pacific Economic Literature* 19(2): 1-17

- Woodon, Q.T. (1999) 'Growth, Poverty, and Inequality: A Regional Panel for Bangladesh', *Policy Research Working Paper* No.2072. Washington, DC: World Bank.
- World Bank (2005) *World Development Report 2006: Equity and Development / World Bank*. Vol. 28. Washington, D.C: Oxford University Press.
- World Bank (2013) 'Indonesia : Evaluation of the Urban Community Driven Development Program, Program Nasional Pemberdayaan Masyarakat Mandiri Perkotaan'. Washington, DC.

APPENDICES

Appendix 1. Legal Basis Specific of PNPM Program

- Government
Government laws and regulations used are:
 - Act Number 22 of 1999 in conjunction to Act No 32 of 2004 on Regional Government.
 - Government Regulation Number 72 of 2005 concerning Village Government.
 - Government Regulation Number 73 of 2005 concerning Village.
 - Presidential Regulation Number 54 of 2005 concerning Poverty Alleviation Coordination Team.
- Planning System
Laws and regulations on planning system are:
 - Act Number 25 of 2004 on National Development Planning Systems (SPPN).
 - Act Number 17 of 2007 on National Long-Term Development Plans (2005-2025).
 - Presidential Regulation Number 7 of 2005 on National Medium-Term Development Plans (RPJM) (2004-2009).
 - Government Regulation Number 39 of 2006 on Controlling and Evaluating Development Plans.
 - Government Regulation Number 40 of 2007 on the Procedures for Drafting Nation Development Plans.
 - Presidential Instruction Number 9 of 2000 on Gender Mainstreaming in National Development.
- State Financial System
Laws and regulations on the state financial system are:
 - Act Number 17 of 2003 on the State Finance (State Gazette of Republic of Indonesia of 2003 Number 47, Supplement to State Gazette of Republic of Indonesia Number 4286).
 - Act Number 1 of 2004 on the State Treasury (State Gazette of Republic of Indonesia of 2004 Number 5, Supplement to State Gazette of Republic of Indonesia Number 4455).
 - Act Number 33 of 2004 on Financial Balancing between the Central Government and Regional Governments (State Gazette of Republic of Indonesia of 2004 Number 126, Supplement to State Gazette of Republic of Indonesia Number 4438).
 - Government Regulation Number 57 of 2005 on Grants to Regions (State Gazette of Republic of Indonesia of 2005 Number 139, Supplement to State Gazette of Republic of Indonesia Number 4577).
 - Government Regulation Number 2 of 2006 on the Procedures of Loan Procurement and/or Grant Acceptance and Forwarding Foreign Loans and/or Grants (State Gazette of Republic of Indonesia of 2006 Number 3, Supplement to State Gazette of Republic of Indonesia Number 4597).
 - Presidential Decree Number 80 of 2003 on the Guidelines for Government Goods/Services Implementation.

- Regulation of Minister of National Development Plan/Chairperson of National Development Planning Agency Number 005/MPPN/06/2006 on the Procedures for Planning and Proposal Submission and Activity Assessment Financed by Foreign Loans/Grants.
- Regulation of Minister of Finance Number 52/PMK.010/2006 on the Procedures for Awarding Grants to Regions.
- Regulation of Minister of Home Affairs Number 13 of 2006 on the Guidelines for Regional Financial Management.

Appendix 2. Sub-program PNPM:

1. **Rural PNPM Mandiri**
Encourage the participation of local community in the rural area.
2. **R2PN Rural PNPM (Rehabilitation and Reconstruction of Nias Island)**
R2PN PNPM facilitates the empowerment of communities, local institutions, community assistance, community training and Direct Assistance to Communities (BLM) in support of proposed and planned rehabilitation and reconstruction activities that are planned, agreed and managed by communities.
3. **Agribusiness PNPM Mandiri/Smallholder Agribusiness Development Initiative (SADI)**
Program that accelerates poverty alleviation in rural areas by raising the income among poor farmer households by raising the productivity and market access of selected groups of farmers
4. **Smart and Healthy Generation PNPM**
program that facilitates communities in planning and implementing activities that improve the health of mothers and children, as well as increase access to elementary and middle school.
5. **Rural Neighbourhood Independence (PNPM- LMP)**
Program that works towards integrating environmental and natural resource management with community development activities in rural areas
6. **Participatory Development System Program (P2SPP)**
Program that integrates PNPM-MP participatory development management into regular development systems (Musrenbang), and encourages the alignment of technocratic and political planning with participatory planning
7. **Strategic Village Development Planning (PNPM Mandiri Respek) for the People of Papua**
Program helps to restore the dignity of the people of Papua by building individual and village development
8. **Urban PNPM Mandiri**
Government effort to boost the independence of communities and local governments in tackling urban poverty independently
9. **Rural Infrastructure PNPM Mandiri**
Raise the well-being of rural communities. In the medium-terms, it aims to boost access of the poor and near-poor to basic infrastructure in rural areas
10. **Regional Development of Socio-economic Infrastructure (PISEW)**
PISEW aims to lessen disparities between regions, eradicate poverty and decrease unemployment
11. **Supplying Drinking Water to Communities (PAMSIMAS)**
Improving access to drinking water and sanitation for the poor, particularly those in rural villages and remote suburban communities
12. **Accelerating the Development of Disadvantaged and Special Areas (P2DTK)**

To help local governments to accelerate socio-economic growth and recovery in disadvantaged and special areas

13. **Marine and Fisheries PNPM Mandiri**

Program that empowers communities in coastal and fishing areas that are involved with the marine or fisheries industry

14. **Tourism PNPM-Mandiri**

Program that helps poor communities live in and around tourist areas.

Appendix 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
growth	231	4.315849	1.091466	1.7315	7.062
pnpm_per_pop	134	4.57e+07	3.82e+07	175042.4	1.89e+08
uemp	231	6.569697	2.76647	1.79	15.75
educ	231	10.85694	.4191025	9.688809	11.79789
agri	231	.2410649	.1099401	.001	.536
gini	231	.3540606	.0421633	.259	.46

Appendix 4. Correlation

	povrate	growth	growt~pm	unemp	agri	educ	gini
povrate	1.0000						
growth	-0.2261	1.0000					
growth_pnpm	-0.1189	0.9226	1.0000				
unemp	-0.0987	0.2284	0.1633	1.0000			
agri	0.5659	-0.5265	-0.3500	-0.5486	1.0000		
educ	0.1257	-0.1130	-0.0299	-0.0113	0.1509	1.0000	
gini	-0.0615	0.1153	0.0770	-0.0006	-0.1314	0.4133	1.0000

Appendix 5. Variables

Povrate	Log rate of Head Count Index (Poverty Level)
Povgap	Log rate of Poverty Gap (Poverty Level)
Poorest	Average Income Proportion of 40% Poorest People (Poverty Level)
Cpovrate	Change of Poverty Rate
Cpovgap	Change of Poverty Gap
Cpoorest	Change of Average Income Proportion of 40% Poorest People
Povratett_1	Initial Poverty Rate (Povrate _{t-1})
Pocgapt_1	Initial Poverty Gap (Povgap _{t-1})
Poorestt_1	Initial Average Income Proportion (Poorest _{t-1})
Growth	Log of GDRP per capita
Growth*PNPM	Log of growth*Log of PNPM realization
Gini	Gini Coefficient
Unemp	Unemployment Rate
Agri	Percentage of GRDP share in Agricultural Sector
Educ	Percentage of Secondary School Enrollment Rate

Appendix 6. Estimation Result of Model 2.3

Methods	Model 2.3 40% Poorest People	
	Coefficient	Std Error
Variable		
Growth	- 0.007	0.006
Growth*PNPM	0.010	0.010
Gini	- 0.150***	0.055
Unemp	- 0.000	0.001
Agri	- 0.016	0.034
Educ	0.000	0.000
Constant	0.257***	0.035
Prob>F	0.047	
R ²	0.264	
Number of Observation	130	
Variable Definition		
Poorest	Average Income Proportion of 40% Poorest People (Poverty Level)	
Growth	Log of GDRP per capita	
Growth*PNPM	Log of growth*Log of PNPM realization	
Gini	Gini Coefficient	
Unemp	Unemployment Rate	
Agri	Percentage of GRDP share in Agricultural Sector	
Educ	Percentage of Secondary School Enrollment Rate	

Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; * significant at 10%

Appendix 7. Estimation Result of Model 3.3

Methods	Model 3.3 Change of 40% Poorest	
	Coefficient	Std Error
Variable		
Poorestt_1	- 0.047	0.117
Growth	0.148	0.077
Growth*PNPM	- 0.017	0.055
Gini	- 0.122	0.132
Unemp	0.005	0.003
Agri	0.131	0.421
Educ	- 0.001	0.001
Constant	- 0.609	0.394
Prob>F	0.181	
R ²	0.101	
Number of Observation	130	
Variable Definition		
Cpoorest	Change of Average Income Proportion of 40% Poorest People	
Poorestt_1	Initial Average Income Proportion (Poorest _{t-1})	
Growth	Log of GDRP per capita	
Growth*PNPM	Log of growth*Log of PNPM realization	
Gini	Gini Coefficient	
Unemp	Unemployment Rate	
Agri	Percentage of GRDP share in Agricultural Sector	
Educ	Percentage of Secondary School Enrollment Rate	

Source: Author's computation

Note: *** significant at 1%; ** significant at 5%; *significant at 10%

Appendix 8. Individual Effect of Fixed Effect Model

Source	SS	df	MS	Number of obs =	130
Model	34.4306399	36	.956406664	F(36, 93) =	290.00
Residual	.306714956	93	.00329801	Prob > F =	0.0000
Total	34.7373549	129	.269281821	R-squared =	0.9912
				Adj R-squared =	0.9878
				Root MSE =	.05743

povrate	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
growth	-.3924827	.1649518	-2.38	0.019	-.7200444	-.064921
growth_pnpm	-.5320814	.1189954	-4.47	0.000	-.7683826	-.2957802
agri	-.8087057	.9032525	-0.90	0.373	-2.602386	.9849748
educ	-.0152359	.0027185	-5.60	0.000	-.0206343	-.0098376
unemp	.0181408	.0069096	2.63	0.010	.0044196	.031862
gini	-.6751941	.2814953	-2.40	0.018	-1.234188	-.1162002
_Iprovince_2	-.5899581	.0689587	-8.56	0.000	-.7268964	-.4530198
_Iprovince_3	-.7556172	.0523619	-14.43	0.000	-.8595976	-.6516368
_Iprovince_4	-.5164415	.136293	-3.79	0.000	-.7870924	-.2457906
_Iprovince_5	-1.153321	.0665976	-17.32	0.000	-1.285571	-1.021071
_Iprovince_6	-.4160275	.0958573	-4.34	0.000	-.6063811	-.2256739
_Iprovince_7	-.0694997	.1026759	-0.68	0.500	-.2733937	.1343943
_Iprovince_8	.4947598	.2554376	1.94	0.056	-.0124886	1.002008
_Iprovince_9	-2.945171	.3089826	-9.53	0.000	-3.558749	-2.331593
_Iprovince_10	-.6267676	.2227809	-2.81	0.006	-1.069166	-.1843689
_Iprovince_11	-1.170926	.2756889	-4.25	0.000	-1.71839	-.6234625
_Iprovince_12	-.1023655	.2140271	-0.48	0.634	-.5273808	.3226499
_Iprovince_13	-.8455822	.1710587	-4.94	0.000	-1.185271	-.5058936
_Iprovince_14	0	(omitted)				
_Iprovince_15	.9778299	.3645954	2.68	0.009	.2538157	1.701844
_Iprovince_16	-2.376638	.3307514	-7.19	0.000	-3.033445	-1.719831
_Iprovince_17	-1.450397	.10411	-13.93	0.000	-1.657139	-1.243655
_Iprovince_18	-.4670014	.124847	-3.74	0.000	-.7149228	-.2190799
_Iprovince_19	-.5929318	.1393332	-4.26	0.000	-.8696199	-.3162436
_Iprovince_20	-.9835506	.0771081	-12.76	0.000	-1.136672	-.8304291
_Iprovince_21	-1.091427	.0842315	-12.96	0.000	-1.258694	-.9241598
_Iprovince_22	-1.384537	.0820056	-16.88	0.000	-1.547384	-1.22169
_Iprovince_23	-.4587155	.2128315	-2.16	0.034	-.8813566	-.0360744
_Iprovince_24	-.5218494	.1456792	-3.58	0.001	-.8111395	-.2325592
_Iprovince_25	-.0448087	.1293224	-0.35	0.730	-.3016173	.212
_Iprovince_26	.0071031	.1582269	0.04	0.964	-.3071041	.3213103
_Iprovince_27	-1.530166	.2463672	-6.21	0.000	-2.019402	-1.040929
_Iprovince_28	-1.550968	.2794346	-5.55	0.000	-2.10587	-.9960668
_Iprovince_29	-.6537889	.1468349	-4.45	0.000	-.9453739	-.362204
_Iprovince_30	-.4509448	.1285084	-3.51	0.001	-.706137	-.1957525
_Iprovince_31	-1.418647	.1249397	-11.35	0.000	-1.666752	-1.170541
_Iprovince_32	0	(omitted)				
_Iprovince_33	.6646523	.1190451	5.58	0.000	.4282523	.9010523
_cons	7.340296	.854657	8.59	0.000	5.643116	9.037475