Understanding the Determinants and Consequences of Income Inequality in Indonesia

Armida S. Alisjahbana*
Arief Anshory Yusuf*
Chotib***
Mohammad Yasin**
Tara B. Soeprobo***

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*Department of Economics and Development Studies, Faculty of Economics, Padjadjaran University, Bandung, Indonesia.
**Center for Policy and Implementation Studies, Jakarta, Indonesia.
***Demographic Institute, Faculty of Economics, University of Indonesia, Jakarta, Indonesia.

Abstract

Although Indonesia has succeeded in reducing poverty during its economic development course, income inequality remains a problem among the sub-groups of population. This paper presents trend in growth, and income inequality in Indonesia over the past 30 years with its ensuing poverty alleviation strategies. Methodology used in this paper is the inequality decomposition as developed by Fields. Overall income inequality has been in the moderate level with Gini ratio in the order of 0.32-0.34 over the past 25 years. However, if we decompose the inequality measure across sub-groups, wide differences have prevailed. Major inequality differences are observed within regional sub-groups, most notably within urban and rural areas. The results of inequality decomposition show that asset ownership is the most important contributing factor, especially more so in the rural areas. Education is the second most important contributing factor to inequality, and its importance is more pronounced in the urban area. Other socio-economic factors with significance importance are share of working household members and sectoral occupation. Location variable in terms of province is not an important factor in urban and rural area inequality which could simply reflect the fact of strong inequality that exists between the urban and rural regions. Several relevant policy implications are derived to lessen the widening impact of poverty and income inequality.

JEL classification: D31, O53

Understanding the Determinants and Consequences of Income Inequality In Indonesia [1]

1. Introduction

Recent economic crisis in East Asia has given rise to new thoughts on the ways in which a country develops its economy (Krongkaew, 2002). The line of thought is that despite the rapid economic growth experienced during the economic boom years, the crisis could result in a quick return of poverty if the crisis resulted in the collapse of the real sector and the ensuing extensive unemployment. These have been one of the rationale and background of undertanding the determinants and consequences of income inequality in Indonesia.

To understand the determinants and consequences of income inequality in Indonesia, the objectives of this paper are: (a) to decompose income inequality by its source, (b) to analyse past and present income inequalities as a way to find out the sources (and causes) of income inequality, and (c) To suggest ways in which government policy in itself or with cooperation with the private sector and civil society would bring about more equal income distribution in the economy, and hence sustainable economic development.

This paper begins with the discussion on the long run trend of poverty and inequality in Indonesia in which the development of Indonesian economic growth will also be highlighted. The experience of policy responses to inequality ever undertaken by the government of Indonesia will be discussed in section 3. Section 4 presents the analysis of income inequality decomposition in an attempt to explain more what is beyond income distribution. Last section concludes the paper with policy implication.

2. Growth and Equity in Indonesian Economic Development: Long Run Trend, Crisis, and Adjustment

Since the start of the "New Order" government up to and prior to the 1997 Indonesian economic crisis, it has brought about increase in income per capita by almost four times (see Figure 1). The period of rapid economic growth as one of many other remarkable macroeconomic performance has been seen as undeniable success story[2].

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[1] This paper is part of a larger study on "Income Distribution and Sustainable Economic Development: The East Asian Experience" under the leadership of Dr. Medhi Krongkaew of NIDA, Thailand. The study focuses on analysis obtained during the three phases of the study that deals with an overall analysis of growth patterns, income distribution, sources of income inequality before and after the crisis as well as its policy implications.

[2] The early part of Indonesian economic development actualy was marked by a successful rehabilitation and stabilization period (1966 – 1972). This created stability was followed by the period of "oil-boom" prosperity, with economic growth during the period of 1973 to 1981 of around 8% annually. The period 1982 to 1985 represents a transitional period from an economy based on oil sector resources and the dominant role of the government in 1970s, towards a market oriented economy by accelerating income from non-oil and natural gas sector in late 1980s and 1990s. Economic development from the mid 1980s to

The increasing income of the average Indonesian has also been accompanied by outstanding reduction in poverty. The government's efforts in dealing with poverty started to show results by the declining number of poor people from 54.2 million people in 1976 (40.1% of total population) to become 22.5 million people (11.3% of total population) in 1996 (see Figure 1). The decline in the number of poor people which was far faster in the rural areas than the urban areas, was related to the development program, particularly in the agricultural sector, that had been able to increase income and purchasing power of the farmers.

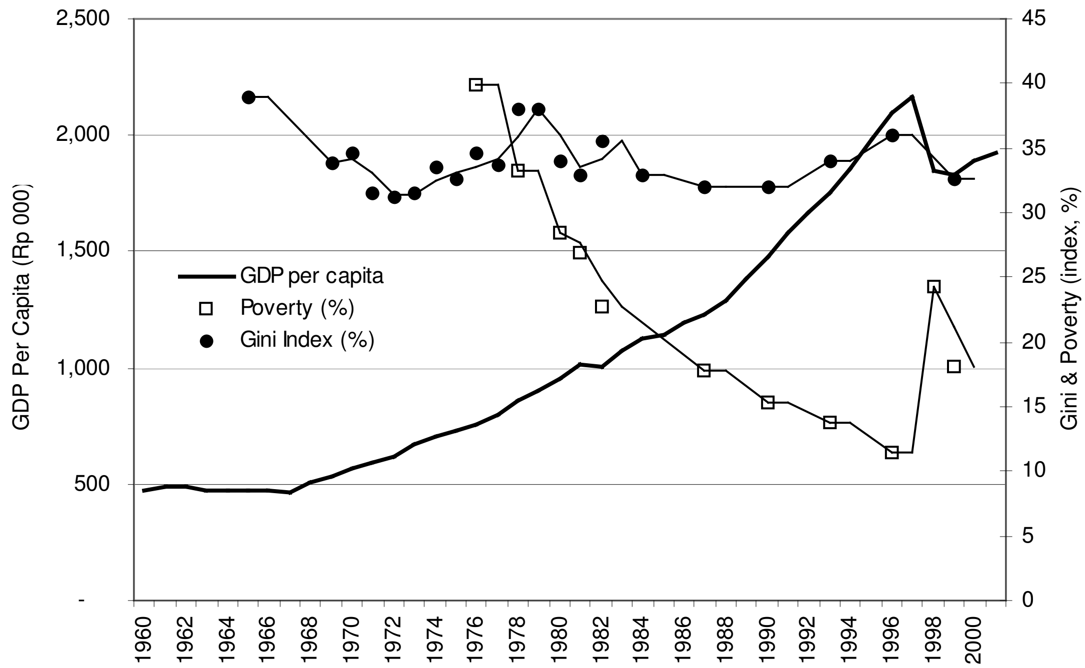
While absolute poverty in Indonesia has been greatly reduced, the story about relative poverty come out to be different. The trend on income inequality has been less clear. After the stabilisation period of the late 1960s, the Indonesian economy embarked on a series of five year economic plan beginning in early 1970s. The income inequality measure only slowly declining during the rehabilitation period and the initial economic development processes. Measured by Gini ratio, the inequality level stayed at about the same level from mid-1960s to the mid 1970s at a moderate level of inequality or Gini ratio of about 0.34.[3] There did not appear to be any difference in the inequality situation within the urban and rural area.

The oil boom and economic boom of the 1974-76 period had resulted in income inequality increase, overall as well as for urban and rural areas respectively. The urban area rising inequality was supported by income disparity that fastly growing in large urban areas surrounding cities such as Jakarta, Surabaya, Medan and the like. The inequality trend was reversed in the later years of 1980s overall as well as for urban and rural areas. The decline in income inequality had in fact persisted until the mid 1990s. The decline was more rapid and pronounced for the rural area, while in urban area the trend stabilised at around Gini ratio of 0.32-0.33. The pattern of economic growth and economic policies had clearly resulted in such a divergent trend, i.e. moderate inequality at the urban area, but lower level at the rural area.

1996 was a period long rapid growth started with recovery from early 1980's slow down and marked with economic liberalization[2].

[3] The Gini ratio used is based on the Indonesian Statistical Board figures which was calculated from household expenditures, and not income.

Figure 1: Trend in Poverty, Household Expenditure Inequality (Gini Index), and GDP per Capita



Prior to the economic crisis, with the on-going series of economic deregulation policies at the background and rapid growth since 1996, the ensuing picture of income inequality was that of an increasing one. The available data in 1996, just prior to the economic crisis, shows that the Gini ratio stood at 0.36 overall, it was 0.36 for urban area and much lowel in rural area (although increasing from previous years) at 0.27.

The economic crisis clearly has resulted in lowering of the income inequality. This is so, because the Gini ratio calculated in this case uses household per capita expenditure as the unit of measurement. The crisis reduced how much household spends per capita and this is reflected in the Gini numbers, and the picture may be different if we use household income per capita as the unit of measurement instead.

3. Indonesian Experience with Policy Responses to Income Inequality

This section is an attempt to identify and discuss any policies related to or intended to improve income distribution in Indonesia and how they are connected, if any, to the up and down of income inequality in general or poverty in particular since the beginning of the new order's government to the recent period of economic crisis. This section would begin with a short review of existing income redistributing policies typically adopted in practice and will be followed by the identification of what were actually taken by Indonesian government and their possible outcomes.

3.1. Typical Policy Responses to Income Inequality

Identifying income-redistributing policies is a difficult task, since government policy in any sort has its distributional consequences. For this reason, a review of typical distributive policies usually adopted, especially in developing countries, will hopefully be used as a guidance in the identification and make this task easier.

Todaro (2002:190-193) suggest four broad areas of possible policy intervention i.e. (1) functional distribution; (2) size distribution; (3) moderating (reducing) the size distribution at the upper levels – most possibly through progressive taxation; and (4) moderating (increasing) the size distribution at the lower level, through public expenditures. Those area of intervention then translate into the following policy options: altering the functional distribution of income through policy designed to change relative factor prices e.g. minimum wage policy, or doing it indirectly through increasing labor price through education. Progressive income tax is example of the third area of intervention, while direct transfer payments and public goods provision is example of the last.

In practice, policies adopted vary widely among countries as in many cases there is no perfect and uniform ways to achieve ideal distribution. Some countries focus on the bottom tier of the income distribution i.e. reducing absolute poverty, others have enforced highly progressive taxation focusing to the upper tier. Interestingly, many countries have also done it indirectly just through stimulating overall economic growth with a belief that trade-off between growth and equity is no longer existent (Gupta et al, 1999) – an area of intervention not mentioned previously by Todaro (2002). This belief is not without ground, as most recent literature (during 1970s to 1990s) on the relationship between growth and distribution suggest there need be no conflict between fast growth and distribution in both the short and long run (for example see Kanbur, 2000, or Bruno et al, 1996). In other words, many now see, and agree that economic growth is indeed a necessary condition for poverty reduction and in turn more equitable income distribution. In short, growth-promoting policies could also be seen as poverty-reducing. In this line of thinking, one would suggest that macroeconomic policy is also important in poverty alleviation strategies.

From this review, it is still not easy to find a good guidance to make a brief and straightforward category of distributive policy, but it could be suggested that distributive policies could be *direct* through what the four area Todaro (2002) suggests or *indirect* by promoting economic growth or improving macroeconomic performance. We will identify both type of policies in the following discussion.

3.2. Identification of Indonesian Experience in Distributive Policies

Needless to say, there has been hardly any good review of the taxation system in Indonesia that could be discussed in accordance to its explicit goals of income redistribution. Therefore, this section could not cover this type of distributive policy. From what will follow, most direct policy would be the Todaro's (2002) last type of intervention i.e. focus on the bottom tier of size distribution through spending side (not revenue side) of government expenditure, as well as policy that indirectly affect functional distribution of income through education and health (human resources) sectors.

Before going forward in to more detail, after carefully identifying many government policy, program, or strategy that is directly intended to reduce income inequality or poverty, in general the periods that mark the significant change in the way those policy adopted could be divided into three important period i.e. (1) First Long Term Development Plan (PJPT[4] I) from 1969/70 to 1993/94 (the important policy during this period is Inpres Program); (2) Second Long Term Development Plan (PJPT II) from 1994/95 up to the start of economic crisis (IDT program is considered the most important in this period); and (3) the period during economic crisis 1998 onward (important policy is Social Safety Net/SSN program).

3.2.1. The period of First Long Term Development Plan/PJPT I (1969/70 – 1993/94)

During this period, one important policy that is explicitly intended to directly reduce income disparities is Inpres (Presidential Instruction) program. Although there are many others programs that anyone could regard as also intended to redistribute income, Inpres is considered the most important one[5]. This is explicitly stated by Ravalion (1988:54) that this program is the most important (in those period) fiscal instrument capable of achieving a more equitable distribution of Income in Indonesia, especially regional income disparities.

Inpres are grants made to lower levels of government by the national level. It was initiated in 1970 as a way of allocating additional funds to lower level of government primarily for use in physical and social infrastructure projects (Prawiro, 1998:175). Inpres program include Inpres Dati I for province level development, Inpres Dati II which is a per capita grant for district level infrastructure projects, and Inpres Desa which provides funds for village development. Prawiro (1998:176) identify some important characteristics of the Inpres program i.e. labor intensive (especially for rural infrastructure program), stabilizing rural income during low productivity periods, equalizing development throughout country, and highly decentralized.

As noted by Sumodiningrat (1997), Inpres program had been focused on human resource development. With this priority, heavy investment was directed to build infrastructure for

[4] PJPT stands for Pembangunan Jangka Panjang Tahap, a long run period cover 25 years of development.

[5] In addition to Inpres program, others program that could be regarded as inequality-reducing during this period are among others Transmigration Program, Regional Development Program (PPW), Provincial Development Program (PDP), Integrated Housing and Environment Development (P2LDT), Water Facility Development Program (PSAB), Integrated Zone Development (PKT), and Credit Support Program (e.g. KUT = Credit for Farmers).

basic education[6], for example, in the effort, to support 6 year compulsory education, which had been very successful – one of the undeniable greatest achievement of the new order's government. Besides strong emphasis of Inpres on education, priority for health sector was also notable (Booth, 1987, in Ravallion 1988:55). From this perspective, we could infer that Inpres program could possibly affect (and perhaps intended to) improve income distribution through functional distribution of income by increasing the relative factor price of the less vulnerable through human resource development, given the notable emphasis on education and health sector.

However, good study that assessed the impact of Inpres program on overall income distribution (let alone functional distribution of income) is quite difficult to find. Good study existed so far is study focusing on the effect of Inpres on regional income inequality. One of them is Ravalion's (1988)[7]. As concluded by Booth (2000:98), this study suggest that there was little evidence that the allocation of Inpres program favored poorer provinces in the mid 1980s. It did favor poorer provinces only in the early 1990s, at the end of the PJPT I.

In terms of its effect on income distribution in general, Booth (2000:81) was a bit more skeptical because Inpres program was not specifically designed to alleviate poverty, but rather give lower level government more scope to carry out much needed infrastructure rehabilitation and development. However, caution should be taken, because Inpres program's emphasis on human resource development of the bottom tier of income distribution, longer term positive impact on income distribution should not be neglected.

3.2.2. The period of Second Long Term Development Plan/PJPT II (1994/95 – 1997/1998)

We could consider the start of PJPT II i.e. Repelita VI was a important phase in the development of redistributive policy in Indonesia as it was the first time that the issue of "income redistribution and poverty alleviation" was devoted in a specific chapter in the planning document (Booth, 1994:36). The background was obvious i.e. the concern that rate of decline in absolute poverty had been slowing. One of the cause was that there were some group of people who were isolated from enjoying the fruit of economic growth. Those groups who were still under absolute poverty were located in an area called "pocket of poverty/*kantong kemiskinan*" and these raised the need for specific program i.e. Inpres Desa Tertinggal (IDT). Although, those people had also been the target of the program during the previous period (such as Inpres Desa Program), it was argued that those earlier program had not reached the "residual poor' that IDT program needed to be tried (Booth, 1994:37).

Daly and Fane (2002) observed that between 1994/95 and 1997/98, Indonesia's spending on anti-poverty program grew from 0.1% to 0.3% of GDP. Two big categories of

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[6] Prawiro (1998:176) also explicitly states that "none benefited more dramatically than education" from the Inpres program.

[7] Another good review is Azis (1990).

program of poverty alleviation are identified i.e. benefit in kinds and job creation program. Benefit in kind program covered health care & nutrition (9.7% of total spending on anti poverty program) and education (13.2%), whereas job creation program covered IDT program (29.9%), Village & urban infrastructure program (22%), and loan scheme (25.3%). As can be seen from the percentage of fund involved in those program, IDT is the most important anti poverty program during this period (see table 1).

3.2.3. Anti-poverty Program During the Economic Crisis

Daly and Fane (2002) provide good and recent review about anti poverty program in Indonesia, especially during economic crisis starting in 1998. Table 1 below summarize type of anti poverty program undertaken by Indonesian government as a response to the economic crisis. Detail anti poverty program prior to the crisis (1994/95 to 1997/98) is also listed and compared.

Table 1: Shares of Individual Programs in Total Anti-Poverty Spending

(percent)

	1994/95 – 1997/98	1998/99 – 1999/2000	2000	1994/95 – 2000
Cash transfers	**0.0**	**0.0**	**1.9**	**0.5**
Benefit in kind	**22.8**	**66.2**	**52.4**	**57.9**
Subsidized rice (OPK)	0.0	41.5	21.6	32.0
Health care & nutrition	9.7	13.3	17.6	13.9
Education	13.2	11.4	13.2	12.1
Job creation	**77.2**	**33.8**	**45.6**	**41.6**
IDT (Inpres Desa Tertinggal)	29.9	0.0	0.0	3.4
KDP (Kecamatan Development Program)	0.0	3.4	5.1	3.4
UPP (Urban Poverty Program)	0.0	0.3	4.9	1.4
PDM-DKE	0.0	8.8	4.2	6.7
Village & urban infrastructure	22.0	6.7	7.7	8.7
Labor intensive (PK)	0.0	5.3	4.0	4.4
Loan schemes	25.3	5.8	16.3	10.5
Other	0.0	3.4	3.5	3.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: Table 2 in Daly and Fane (2002:315

As can be seen from the table, in general there were three categories of anti poverty program undertaken both before the crisis and during the crisis i.e. cash transfer, benefit in kind, and job creation. The last two program were present in both period but in very different composition. While cash transfer was only present during crisis period.

Anti poverty program during the crisis had been known as Social Safety Net (SSN) program. This policy responses had increased spending on anti-poverty program to 1.4%

of GDP in 1998/99 (compared to only 0.3% in 1997/98). The composition of anti poverty program during economic crisis was dominated by benefit in kinds (66.2%), while job creation dominated (77.2%) the program prior to the crisis (mainly IDT as previously discussed, infrastructure project, and loan schemes). Thus, there had been reorientation in the focus of anti poverty program from job creation into in-kind transfers. In fact, the big share of benefit in kind program was due to subsidized rice program that had never been taken before. Health and education sector were consistently in the list in both period, without much different fund share. In fact, Daly and Fane (2002) argue that program on health care is the most effectively-targeted program.

3.3. Less Direct Policy Measures to Income Redistribution

This sub-section is an attempt to identify any policy that is directly or indirectly affect income distribution in Indonesia. Considering there are many policy that could be related to income distribution, what would be included and discussed would be limited to those that are considered very important in term of its impact on the up and down of income inequality in Indonesia. Those are stabilization policy in 1960s, government policy during oil boom period, and deregulation or structural adjustment policies during 1980s to early 1990s.

Stabilization policy in 1960s

In the very early of development i.e. 1960s, Indonesia run a stabilization policy of which its main objectives is to reduce inflation to single digit inflation and to return economy to its sustained growth. This of course, especially inflation-reduction policy would be expected to have significant distributional consequences. However, as Booth (2000:74) suggest, this stabilization policy did not have a clear impact on distribution. But it was surprisingly identified that during this period, inequality in urban area is lower than in rural area. Booth (2000:74) further, put forward explanation. Inflation and economic stagnation had more severe impact on urban worker, and this had been restored by stabilization policy resulting in reduced inequality in urban area. Whereas in rural area, better-off farmer with food surplus experienced significant income rise relative to both poor farmer and urban workers.

Government policy during oil boom period of 1970s

As previously mentioned in the introduction of this section, economic growth has been agreed to be the necessary conditions for poverty reduction, and empirical evidence supports that the trade-off between economic growth and equity has been no longer a norm. Interestingly enough, Indonesian experience has also been mentioned as one of clear examples (compared for example with contradictory conclusion from the experience in Latin America). One of the supporting empirical evidence was an analysis done by Asra (2000) which concludes that the decline in the incidence of poverty in Indonesia during the past two decades is statistically as well as practically significant. He further pointed out that analysis of growth-equity decomposition proves that economic growth has been responsible for much of the poverty reduction.

Oil boom in 1970s had led to rapid growth in government expenditure, the impact of which on distribution of income had much been debated (Booth, 2000:77). In term of expenditure policy, oil boom had made possible the financing of massive infrastructure development that would permanently altered the basic structure of Indonesian economy, let alone that between 1970 to 1980, income per capita of Indonesians rose from $80 to $490 (Prawiro, 1998:123-124).

During 1970s, it was observed that this is the period during which the highest Gini coefficient was recorded i.e. 0.38 in 1978. The connection of economic situation during oil boom period and income distribution had been analyzed by Booth (2000). Despite the tendency of growing inequality during this period, the impact on urban and rural inequality was not similar: comparing Gini coefficient in 1970 with that in 1980, we can conclude that urban inequality increase, while interestingly, rural inequality decrease. Higher economic growth, then, could be seen as urban-biased (Booth, 2000:77) and this was not shared equally within urban people, this could explain increasing inequality in urban area. However, Booth (2000:80) did not believe that decreasing rural inequality was due to government policy, despite massive increase in government expenditure during this period. This increase, simply, was not explicitly targeted to the poor. If there was impact of government policy, it was the successful *stabilization of food price* (Booth, 2000:81).

Some remainders, however, should not be neglected. First, oil wind fall has increased the capacity of government to carry out their Inpres program with the possibility of improving rural distribution of income, and secondly (although there has not been any specific evidence on this), it could not be denied that this period, investment in agricultural sector such as the irrigation project and dissemination of new technology had possibly increased the productivity of rural agricultural sector.

Structural adjustment policy in 1980s to the mid 1990s

Deregulation policy which started in 1983 had been seen to only benefited a few of those already fortunate. Despite that during this period (1984 – 1996) index of poverty sharply dropped from 21.4% to 11.2% (Ikhsan, 2001:5), the impact of deregulation on distribution of income could be different. Comparing Gini coefficient in 1984 (the start of deregulation) and 1996 suggested that income inequality sharply increased in urban area (from 0.32 to 0.36) but decreased in rural area (0.28 to 0.27), with overall inequality increase from 0.33 to 0.36. Similar observation also addressed by Ikhsan (2001: 25)[8].

Some possible explanation of why income distribution had been worsening in urban area but not in rural area had been put forward in Ikhsan (2001). Increasing inequality in urban area was mentioned to be the impact stagnant real urban wage (blue collar worker) but increasing professional salary (white collar worker) and as long as urbanization of rural

[8] For a good theoretical review of how deregulation policy could affect income distribution, see Ikhsan (2000:3-7).

labor to urban area continued, this gap would also persist. In Minimum wage policy (UMR) could be seen then as a means to prevent this widening gap. Meanwhile, improving income distribution in rural area has been seen as indication of more perfectly working of market mechanism as well as improved infrastructure development that had reduced profit margin of agricultural sector (Ikhsan, 2001:10).

Interestingly, Ikhsan (2001:12) mentioned explicitly some government policy that could be the causes of deteriorating income distribution during deregulation period. Those are regressive subsidy policy of which among others are subsidy to higher education, and fuel subsidy that had been enjoyed by a few of richer group of people.

From the discussion so far it could concluded that the objects of notable income redistribution policy in Indonesia had been those people that belonged to the bottom tier of distribution, especially in the form of anti-poverty programs with continued priority on social sector infrastructure. However, its final impact on income distribution i.e. expected reduction in income inequality was difficult to conclude. The past two decades of development had indeed remarkably reduced poverty, but relative poverty remains. Sign of decreasing inequality (despite less marked) was only observed in rural area.

More specifically, the following policy that did or potentially could improve income distribution in Indonesia could be noted: (1) Policies that was intended to equalize regional income disparities in the form of Inpres program during PJPT II. Its heavy emphasis on human resources development (education and health infrastructure) could also potentially improve income distribution at least in the long run; (2) More general government expenditure policy especially during oil boom period that result in massive investment in agricultural infrastructure; (3) Job creation program that continued in PJPT II with priority given to the "pocket of poverty" (IDT); and (4) Special Social Safety Net (SSN) program during the economic crisis with emphasis on direct transfer to the poor (mainly in the form of subsidized rice).

Some policies that are not specially discussed but could also important in redistribution of income in Indonesia are among other progressive taxation policy, and perhaps minimum wage policy. Meanwhile, less direct policy that could be considered important are also worth to be mentioned i.e. (1) growth-promoting policy in the form of macroeconomic policy that has been proven to be the main sources of poverty reduction (Asra, 2000) and (2) price stabilization policy especially focusing on the price of commodities mostly consumed by the poor.

4. Analysis of Income Inequality Decomposition

In this section, we report our analysis of income inequality decompositon as suggested by Peter Warr (2002). This is an attempt to give us more understanding about the nature of income inequality and if possible to emphasize its underlying causes. Three common method of inequality decomposition exist so far in current literature i.e. (a) decomposition of inequality into between and within major groups, (b) decomposition of inequality into components of total income, and (c) decomposition of inequality based on income-generating function.[9]

For regression-based decomposition analysis, Dataset from IFLS[10] 1997 is used instead of SUSENAS data, because no-information on asset ownership (which potentially could be very important income-determining factor) available from the latter. We don't discuss the methodology in more detail[11], what follows is the discussion of the results.

4.1. Decomposition by Regions

Using Income Module from SUSENAS data for 1996 and 1999, income inequality is decomposed by within and between regional categories and presented in table 2[12]. We use income per capita i.e. total annual household income divided by number of household members for measurement of income.

As can be seen from the table, it suggests that inequality between regions, either between provinces, districts, or urban-rural regions, do not contribute significantly (it ranges from 8% of between provinces GE(-1) to 32% of between districts GE(0)) to total income inequality in Indonesia in both 1996 (before economic crisis) and 1999 (after economic crisis). Most proportion, inevitably, come from within-region inequality. Among the three regional sub-groups, however, inequality between districts is found to have the highest contribution in explaining total income inequality.

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[9] Readers may see Peter Warr (2002) for detail methodology of (a) and (b), and Fields (2002) for (c).

[10] Indonesia Family Life Survey (IFLS) is a continuing longitudinal socioeconomic and health survey. The first wave was conducted in 1993 (IFLS1) and the second wave was conducted in 1997 with additional supplement for capturing economic crisis in 1998 (IFLS2+). The third survey was conducted in 2000 and still in the process of completion. IFLS was addressed to a sample representing about 83% of the Indonesian population living in 13 of the nation's 26 provinces. IFLS sampling scheme stratified on provinces, then randomly sampled within provinces. Provinces were selected to represent the population and capture the cultural and socio-economic diversity of Indonesia. However, due to huge cost of the survey considering the size and terrain of the country, only 13 provinces were surveyed.

[11] Readers may see Peter Warr (2002) for detail methodology of (a) and (b), and Fields (2002) for (c).

[12] We take advantage of STATA command "ineqdeco" to estimates a range of inequality and related indices commonly used by economists, plus decompositions of a subset of these indices by population subgroup. Inequality indices estimated are: members of the single parameter Generalized Entropy class GE(a) for a = -1, 0, 1, 2 and the Atkinson class A(e) for e = 0.5, 1, 2.

Table 2: Inequality Decomposition by Regions

Group	Index	1996					1999				
		Total	Within group	pct	Between group	pct	Total	Within group	pct	Between group	pct
Provinces	GE(-1)	0.23	0.20	87.0	0.03	13.0	0.25	0.23	92.0	0.02	8.0
	GE(0)	0.22	0.18	81.8	0.04	18.2	0.24	0.21	87.5	0.03	12.5
	GE(1)	0.26	0.22	84.6	0.04	15.4	0.28	0.25	89.3	0.03	10.7
	A(0.5)	0.12	0.10	83.3	0.02	16.7	0.12	0.11	91.7	0.01	8.3
	A(1)	0.20	0.17	85.0	0.03	15.0	0.21	0.19	90.5	0.02	9.5
	A(2)	0.32	0.27	84.4	0.05	15.6	0.35	0.31	88.6	0.04	11.4
Districts	GE(-1)	0.23	0.16	69.6	0.07	30.4	0.25	0.20	80.0	0.05	20.0
	GE(0)	0.22	0.15	68.2	0.07	31.8	0.24	0.18	75.0	0.06	25.0
	GE(1)	0.26	0.19	73.1	0.07	26.9	0.28	0.22	78.6	0.06	21.4
	A(0.5)	0.11	0.08	72.7	0.03	27.3	0.13	0.10	76.9	0.03	23.1
	A(1)	0.21	0.15	71.4	0.06	28.6	0.22	0.17	77.3	0.05	22.7
	A(2)	0.33	0.24	72.7	0.09	27.3	0.36	0.28	77.8	0.08	22.2
Urban-Rural	GE(-1)	0.23	0.19	82.6	0.04	17.4	0.25	0.22	88.0	0.03	12.0
	GE(0)	0.21	0.17	81.0	0.04	19.0	0.23	0.20	87.0	0.03	13.0
	GE(1)	0.26	0.22	84.6	0.04	15.4	0.28	0.25	89.3	0.03	10.7
	A(0.5)	0.11	0.09	82.6	0.02	17.4	0.12	0.11	91.7	0.01	8.3
	A(1)	0.20	0.17	85.0	0.03	15.0	0.21	0.19	90.5	0.02	9.5
	A(2)	0.33	0.28	84.8	0.05	15.2	0.35	0.31	88.6	0.04	11.4

Comparing the results before and after economic crisis present some interesting points. Proportion of income equality explained by inequality between regions tend to consistently lower in 1999 or after economic crisis. In 1996, for example, the proportion of between districts GE(-1) is 30% and in 1999 it declined to only 20%. In general, both the calculated GE and Atkinson Class inequality indices suggest that income inequality tend to slightly increase from 1996 to 1999. Within regions inequality is found to be increasing as well. Consequently, then, we will find that inequality between regions declined. Although further careful analysis is necessary to explain this, it seems that economic crisis occured in the intervening period seems to increase overall income inequality and inequality within region, but reduces inequality among or between regions. Akita and Alisjahbana (2002) also found that inequality between regions declined after economic crisis. However, as Akita and Alisjahbana (2002) explained the trend has actually occured long before the crisis.

4.2. Decomposition by Socio-economic Characteristics

In this decomposition, population (household) is sub-grouped by some socio-economic characteristics of its household head. The socioeconomic characteristics of the household head include gender, highest level of education attended, occupation type, and sector of employment[13].

Table 3: Inequality Decomposition by Socio-economic Characteristics

Group	Index	1996					1999				
		Total	Within group	pct	Between group	pct	Total	Within group	pct	Between group	pct
Gender	GE(-1)	0.23	0.23	100.0	0.00	0.00	0.25	0.25	100.0	0.00	0.0
	GE(0)	0.22	0.22	100.0	0.00	0.00	0.24	0.24	100.0	0.00	0.0
	GE(1)	0.26	0.26	100.0	0.00	0.00	0.28	0.28	100.0	0.00	0.0
	A(0.5)	0.11	0.11	100.0	0.00	0.00	0.12	0.12	100.0	0.00	0.0
	A(1)	0.20	0.20	100.0	0.00	0.00	0.21	0.21	100.0	0.00	0.0
	A(2)	0.32	0.32	100.0	0.00	0.00	0.33	0.33	100.0	0.00	0.0
Education	GE(-1)	0.24	0.18	75.0	0.06	25.0	0.25	0.20	80.0	0.05	20.0
	GE(0)	0.22	0.16	72.7	0.06	27.3	0.24	0.19	79.2	0.05	20.8
	GE(1)	0.27	0.20	74.1	0.07	25.9	0.29	0.23	79.3	0.06	20.7
	A(0.5)	0.12	0.09	75.0	0.03	25.0	0.12	0.10	83.3	0.02	16.7
	A(1)	0.21	0.16	76.2	0.05	23.8	0.22	0.18	81.8	0.04	18.2
	A(2)	0.33	0.26	78.8	0.07	21.2	0.36	0.29	80.6	0.07	19.4
Occupation	GE(-1)	0.23	0.17	73.9	0.06	26.1	0.25	0.20	80.0	0.05	20.0
	GE(0)	0.22	0.16	72.7	0.06	27.3	0.23	0.18	78.3	0.05	21.7
	GE(1)	0.26	0.20	76.9	0.06	23.1	0.29	0.23	79.3	0.06	20.7
	A(0.5)	0.11	0.09	81.8	0.02	18.2	0.12	0.10	83.3	0.02	16.7
	A(1)	0.20	0.16	80.0	0.04	20.0	0.22	0.18	81.8	0.04	18.2
	A(2)	0.32	0.26	81.3	0.06	18.8	0.35	0.29	82.9	0.06	17.1
Sectors	GE(-1)	0.23	0.18	78.3	0.05	21.7	0.24	0.20	83.3	0.04	16.7
	GE(0)	0.22	0.17	77.3	0.05	22.7	0.23	0.19	82.6	0.04	17.4
	GE(1)	0.27	0.22	81.5	0.05	18.5	0.28	0.24	85.7	0.04	14.3
	A(0.5)	0.11	0.09	81.8	0.02	18.2	0.12	0.10	83.3	0.02	16.7
	A(1)	0.20	0.17	85.0	0.03	15.0	0.21	0.18	85.7	0.03	14.3
	A(2)	0.32	0.27	84.4	0.05	15.6	0.34	0.29	85.3	0.05	14.7

From the result of inequality decomposition as presented in Table 3, it could be seen that the proportion of between-groups inequality is zero when the population is sub-grouped by gender of household head. It simply says that inequality between gender, (in this case gender of head of the household) do not contribute at all in explaining total inequality.

Again, within group inequality, in this case within gender, education level, occupation type, and sector of employment, is significant (73% and more) in explaining total inequality, whereas inequality between these socio-economic categories do not explain much (less than 27%). Apart from gender, inequality in the three socio-economic characteristics i.e. education level, occupation type, and sector of employment, seems to explain or contribute 18 to 27% of total inequality (The exact proportion depend on the

[13] There are 9 categories of education level i.e. not completed, primary, junior secondary, junior high, vocational junior high, senior high, vocational junior high school, diploma III, bachelor, and master/PhD. Ten categories of sector of employment include Agriculture, Mining & quarrying, Industry, Electricity, gas, & water, Construction, Trade, Transport & communication, Financing, Services, and Others.

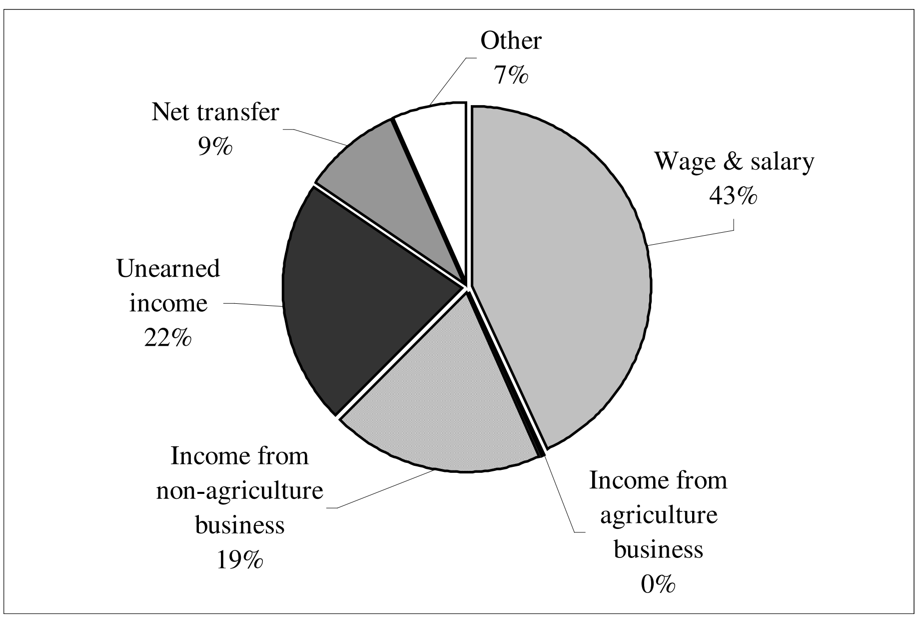
parameter of GE and Atkinson Class included). The results also suggest that inequality between occupation type contribute a bit more to total income equality than what is contributed by inequality within sectors of employment. Contribution of within-groups inequality seems to decline slightly from 1996 to 1999.

4.3. Decomposition by Income Components

Analyzing income inequality decomposition by income components requires disaggregating household income into its income sources[14]. Decomposing inequality into its separate income sources could reveals how much inequality in each component of income contributes to total income inequality. The result of this decomposition is presented in figure 2.[15]

As can be seen from the figure, the source of overall income inequality in Indonesia in 1996 is mostly inequality in wage & salary (43%), followed, by inequality in un-earned income (22%). It also suggested that inequality in income from agriculture business only produce negligible contribution to total income inequality.

Figure 2: Income Inequality Decomposition by Sources of Income (1996)



[14] SUSENAS data on household income could be disaggregated into (1) income from wage and salary in both cash and in-kind; (2) income from agricultural business; (3) income from non-agricultural business; (4) Unearned income, i.e. income outside wage/salary and business e.g. estimated house rent, pension, scholarship, etc; (5) Net-transfer received; and (6) other source of income e.g. assets sold and saving withdrawal.

[15] We use "ineqfac" command in STATA to calculate Shorrock income inequality decomposition by sources of income or equation. The command "ineqfac" provides an exact decomposition of the inequality of total income into inequality contributions from each of the factor components of total income.

4.4. Regression-based Inequality Decomposition

The two previous decomposition techniques show how much of total inequality can be explained by the fact that mean income differs across categories. If for example, inequality is decomposed by regional categories, it does not take into account other factor that could explain other than regional aspects. Regression based inequality decomposition is an attempt to correct this. In general, this decomposition bridge the divide between statistical analysis of inequality and economic theories of its causes. In other words, the regression-based technique could be used to answer such question as: how much do various factors contribute to inequality?

This type of decomposition require us to estimate an income generating equation. In this analysis, two models are estimated i.e. one using log household expenditure percapita (model 1) and another one using log household income per capita (model 2). As inequality in urban and rural area differs quite significantly, the focus in this analysis is on urban-rural comparison. Hence, for each model, three equations are estimated, i.e. total sample, urban sample, and rural sample regression.

Choice of explanatory variables was based on Mincerian human capital approach, and past empirical studies. Data availability is also used in considering feasible choice of explanatory variables. Mincerian human capital theory suggests that education (measured as average years of schooling) and experience (measured as average age and its squared) of working household member are chosen as explanatory variables. Other socio-economic variables used are share of working household member, household size, household's female labor ratio, and whether there is farmer in the family. Asset ownership variable which is included in the model are log of asset percapita and share of those asset devoted to household business activity. To account for locational variation, provincial dummy variable, as well as, urban-rural location are included. Table 4 lists those variables together with their descriptive statistics.

Table 4: Descriptive Statistics of the Variables in the Income Generating Equation

Variables	**Total**		**Urban**		**Rural**	
Income per capita (Rp 000)	962	(2,765)	1,251	(214,752)	716	(3,177)
Expenditure per capita (Rp 000)	1,198	(1,952)	1,578	(2,307)	877	(1,523)
Average age	38.72	(11)	37.82	(9.96)	39.47	(11.64)
Average year of schooling	6.50	(4)	8.04	(3.73)	5.24	(3.53)
Asset per capita (Rp 000)	14,200	(690,000)	26,800	(1,020,000)	3,584	(788,857)
Share of asset devoted to business	0.18	(0.26)	0.09	(0.19)	0.26	(0.29)
Whether there is farmer in the family (1,0)	0.34	(0.47)	0.11	(0.31)	0.54	(0.50)

Table 4: Descriptive Statistics of the Variables in the Income Generating Equation

Variables	Total		Urban		Rural	
Share of working household member	0.41	(0.24)	0.40	(0.23)	0.42	(0.24)
Share of female household member	0.52	(0.20)	0.52	(0.20)	0.52	(0.19)
Household size	5.19	(2.44)	5.40	(2.58)	5.02	(2.29)
Whether located in urban area (1,0)	0.46	(0.50)				
North Sumatera (1,0)	0.07	(0.26)	0.09	(0.28)	0.06	(0.23)
West Sumatera (1,0)	0.05	(0.22)	0.04	(0.18)	0.06	(0.24)
South Sumatera (1,0)	0.05	(0.22)	0.04	(0.20)	0.05	(0.23)
Lampung (1,0)	0.04	(0.19)	0.01	(0.12)	0.06	(0.23)
Jakarta (1,0)	0.09	(0.28)	0.19	(0.39)		
West Java (1,0)	0.16	(0.37)	0.17	(0.38)	0.16	(0.37)
Central Java (1,0)	0.13	(0.34)	0.11	(0.31)	0.15	(0.35)
Yogyakarta (1,0)	0.06	(0.24)	0.08	(0.28)	0.05	(0.21)
East Java (1,0)	0.15	(0.35)	0.12	(0.33)	0.17	(0.37)
Bali (1,0)	0.05	(0.21)	0.04	(0.19)	0.05	(0.23)
West Nusa Tenggara (1,0)	0.06	(0.24)	0.03	(0.16)	0.09	(0.28)
South Kalimantan (1,0)	0.04	(0.21)	0.04	(0.19)	0.05	(0.22)
South Sulawesi (1,0)	0.05	(0.22)	0.04	(0.21)	0.06	(0.23)

Notes: Figure in parantheses is standard deviation

Regression results for the two models are reported in table 5 and table 6. Model 1, which use log expenditure percapita as dependent variable, produce better goodness of fit compared to Model 2. Hence, further analysis will use model 1 estimation more extensively. Another reason of preference of using expenditure data is that Income data is also widely known to be under-reported and more problematic. Model 1's total sample regression, for example, produce R-squared of 0.43, which is relatively high, for a model using cross-sectional data.

All significant coefficient in all of the 6 equations have correct expected sign. One of variables do not significantly associated with dependent variable is household's female labor ratio. This more or less could be seen as an evidence of no gender differences in income generation.

Inequality decomposition based on a new method devised by G. S. Fields (2002) was conducted. This decomposition enable us to answer question such as how strong does asset ownership contribute to inequality? In short, this regression based decomposition could explain more what forces are behind inequality.

Table 5: Regression Result of Income Generating Equations Dependent variable: Log Household Income Per Capita

Variable	Total sample	Urban sample	Rural sample
Average age	0.034 (0.006)**	0.046 (0.010)**	0.030 (0.008)**
Average age squared	-0.000 (0.000)**	-0.001 (0.000)**	-0.000 (0.000)**
Average year of schooling	0.071 (0.004)**	0.059 (0.005)**	0.081 (0.005)**
Log of assets per capita	0.228 (0.008)**	0.190 (0.010)**	0.284 (0.013)**
Share of asset devoted to business	0.393 (0.061)**	0.810 (0.100)**	0.128 (0.077)*
Whether there is farmer in the family (1,0)	-0.350 (0.036)**	-0.381 (0.062)**	-0.287 (0.045)**
Share of working household member	0.903 (0.061)**	1.248 (0.088)**	0.636 (0.084)**
Share of female household member	-0.034 (0.066)	0.018 (0.092)	-0.041 (0.093)
Household size	-0.043 (0.006)**	-0.030 (0.007)**	-0.052 (0.009)**
Whether located in urban area (1,0)	0.305 (0.030)**	- -	- -
North Sumatera (1,0)	0.061 (0.063)	0.005 (0.071)	0.131 (0.080)
West Sumatera (1,0)	-0.097 (0.072)	-0.086 (0.102)	-0.102 (0.082)
South Sumatera (1,0)	-0.374 (0.073)**	-0.091 (0.095)	-0.493 (0.086)**
Lampung (1,0)	-0.206 (0.076)**	0.099 (0.146)	-0.235 (0.079)**
West Java (1,0)	-0.046 (0.053)	-0.076 (0.058)	- -
Central Java (1,0)	-0.200 (0.056)**	-0.289 (0.065)**	-0.131 (0.061)**
Yogyakarta (1,0)	-0.319 (0.066)**	-0.356 (0.075)**	-0.316 (0.090)**
East Java (1,0)	-0.294 (0.055)**	-0.388 (0.064)**	-0.232 (0.058)**
Bali (1,0)	-0.040 (0.070)	-0.286 (0.094)**	0.077 (0.081)
West Nusa Tenggara (1,0)	-0.047 (0.067)	-0.067 (0.109)	-0.005 (0.069)
South Kalimantan (1,0)	0.113 (0.073)	0.099 (0.099)	0.130 (0.083)
South Sulawesi (1,0)	-0.268 (0.070)**	-0.371 (0.092)**	-0.214 (0.081)**
Constant	8.730 (0.178)**	9.159 (0.255)**	8.133 (0.245)**
Number of observations	6,726	2,995	3,731
R-Squared	0.35	0.29	0.31

Note: Number in parantheses is standard error; **) significant at 5%; *) significant at 10%

Inevitably, residuals "accounts for" the largest share of inequality. This could reflect unobserved factor such as skills, or other unsystematic random factor. After the residuals (58%), for model 1 with total sample, the factors attributed to inequality are (from the most to the least important) log of asset per capita (15%), average years of schooling (10%), and household size (4%). Other variables are somewhat important, such as urban-rural location (3.5%), and other do not contribute to inequality. The ranking of those variables in term of its share in equality, is more or less, similar for both separate urban and rural estimation.

Aggregating all variables into sub-group could explain the result more conveniently. Table 8 shows decomposition of inequality by its source which is subgrouped into some important categories. This decomposition has been already adjusted to R-squared i.e. excluding residuals factor.

Table 6: Regression Result of Income Generationg Equation Dependent variable: Log Household Expenditure Per Capita

Variable	Total sample	Urban sample	Rural sample
Average age	0.015 (0.004)**	0.011 (0.006)*	0.016 (0.005)**
Average age squared	-0.000 (0.000)**	-0.000 (0.000)	-0.000 (0.000)**
Average year of schooling	0.050 (0.002)**	0.054 (0.004)**	0.048 (0.003)**
Log of asset per capita	0.168 (0.005)**	0.150 (0.007)**	0.193 (0.007)**
Share of asset devoted to business	0.080 (0.038)**	0.370 (0.065)**	-0.086 (0.046)*
Whether there is farmer in the family (1,0)	-0.263 (0.022)**	-0.309 (0.041)**	-0.212 (0.027)**
Share of working household member	0.229 (0.037)**	0.326 (0.058)**	0.146 (0.049)**
Share of female household member	-0.028 (0.041)	-0.058 (0.061)	0.002 (0.055)
Household size	-0.072 (0.004)**	-0.065 (0.005)**	-0.079 (0.005)**
Whether located in urban area (1,0)	0.186 (0.019)**	- -	- -
North Sumatera (1,0)	-0.333 (0.039)**	-0.310 (0.046)**	-0.215 (0.048)**
West Sumatera (1,0)	-0.136 (0.044)**	-0.082 (0.067)	-0.013 (0.048)
South Sumatera (1,0)	-0.286 (0.044)**	-0.053 (0.062)	-0.257 (0.050)**
Lampung (1,0)	-0.230 (0.047)**	-0.015 (0.095)	-0.120 (0.047)**
West Java (1,0)	-0.202 (0.033)**	-0.265 (0.038)**	- -
Central Java (1,0)	-0.313 (0.035)**	-0.382 (0.043)**	-0.125 (0.036)**
Yogyakarta (1,0)	-0.505 (0.041)**	-0.581 (0.050)**	-0.267 (0.053)**
East Java (1,0)	-0.618 (0.034)**	-0.647 (0.042)**	-0.459 (0.034)**
Bali (1,0)	-0.413 (0.044)**	-0.378 (0.062)**	-0.296 (0.049)**
West Nusa Tenggara (1,0)	-0.325 (0.042)**	-0.265 (0.073)**	-0.181 (0.041)**
South Kalimantan (1,0)	-0.128 (0.045)**	-0.149 (0.066)**	0.026 (0.050)
South Sulawesi (1,0)	-0.606 (0.043)**	-0.618 (0.060)**	-0.457 (0.048)**
Constant	11.148 (0.109)**	11.545 (0.167)**	10.687 (0.143)**
Number of observation	6,953	3,092	3,861
R-squared	0.43	0.40	0.36

Note: Number in parantheses is standard error; **) significant at 5%; *) significant at 10%

The result shows that the most important contributing factor to inequality is asset ownership. For overall inequality, its share is 35%. However, urban-rural comparison suggest that asset ownership is more important in rural area. In rural area inequality its share in inequality is 45% whereas in urban area, it only contributes 33%.

Table 7: Decomposition of Inequality by Individual Regressor

(percent)

Factor inequality share (s_i)	Income per capita			Expenditure per capita		
	Total	Urban	Rural	Total	Urban	Rural
I. Demographics						
Education						
Average year of schooling	8.92	7.49	10.22	9.83	10.66	9.49
Experience						
Average age	-3.04	-4.12	-2.64	-0.82	-0.61	-0.91
Average age squared	3.93	5.09	3.44	0.86	0.56	1.00
Other demographics						
Whether there is farmer in the family (1,0)	2.30	2.50	1.88	3.47	4.08	2.80
Share of working household member	3.31	4.58	2.33	0.56	0.80	0.36
Share of female household member	0.02	-0.01	0.03	0.02	0.03	0.00
Household size	0.70	0.49	0.85	4.10	3.68	4.47
Asset ownership						
Log of asset per capita	13.09	10.95	16.32	15.07	13.45	17.33
Share of asset devoted to business	-0.38	-0.79	-0.12	-0.31	-1.45	0.34
Location						
Urban-rural						
Whether located in urban area (1,0)	3.37			3.54		
Province						
North Sumatera (1,0)	0.05	0.00	0.12	-0.05	-0.05	-0.03
West Sumatera (1,0)	0.02	0.02	0.03	-0.12	-0.07	-0.01
South Sumatera (1,0)	0.53	0.13	0.70	0.27	0.05	0.24
Lampung (1,0)	0.25	-0.12	0.28	0.25	0.02	0.13
West Java (1,0)	-0.06	-0.10		-0.75	-0.99	
Central Java (1,0)	0.09	0.13	0.06	0.07	0.09	-0.10
Yogyakarta (1,0)	-0.01	-0.02	-0.01	-0.19	-0.22	2.82
East Java (1,0)	0.54	0.71	0.42	3.80	3.97	-0.01
Bali (1,0)	-0.03	-0.23	0.06	-0.01	-0.01	0.35
West Nusa Tenggara (1,0)	0.03	0.04	0.00	0.62	0.51	0.01
South Kalimantan (1,0)	0.04	0.04	0.05	-0.07	-0.09	0.01
South Sulawesi (1,0)	0.28	0.38	0.22	1.78	1.81	1.34
Residual	66.06	72.84	65.77	58.08	63.78	60.36
Total	100.00	100.00	100.00	100.00	100.00	100.00

Education (as measured by years of schooling) is the second most contributing factor to inequality. For total sample, it account for 23%. However, compared to its contribution to inequality in rural area, education is found to be much more important factor in urban area (Education's share is higher i.e. 29% compared to its share in rural area of 24%). Other demographic factor is also important contributor to inequality (19% for total sample, 24% for urban sample, and 19% for rural sample).

Table 8: Decomposition of Inequality by Individual Regressor,Corrected for R-squared

(percent)

Factor inequality share (s_i*)	Income per capita			Expenditure per capita		
	Total	**Urban**	**Rural**	**Total**	**Urban**	**Rural**
Demographics						
Education						
Average year of schooling	26.28	27.58	29.86	23.45	29.43	23.94
Experience						
Average age	-8.96	-15.17	-7.71	-1.96	-1.68	-2.30
Average age squared	11.58	18.74	10.05	2.05	1.55	2.52
Other demographics						
Whether there is farmer in the family (1,0)	6.78	9.20	5.49	8.28	11.26	7.06
Share of working household member	9.75	16.86	6.81	1.34	2.21	0.91
Share of female household member	0.06	-0.04	0.09	0.05	0.08	0.00
Household size	2.06	1.80	2.48	9.78	10.16	11.28
Asset ownership						
Log of asset per capita	38.57	40.32	47.68	35.95	37.13	43.72
Share of asset devoted to business	-1.12	-2.91	-0.35	-0.74	-4.00	0.86
Location						
Urban-rural						
Whether located in urban area (1,0)	9.93			8.44		
Province						
North Sumatera (1,0)	0.15	0.00	0.35	-0.12	-0.14	-0.08
West Sumatera (1,0)	0.06	0.07	0.09	-0.29	-0.19	-0.03
South Sumatera (1,0)	1.56	0.48	2.04	0.64	0.14	0.61
Lampung (1,0)	0.74	-0.44	0.82	0.60	0.06	0.33
West Java (1,0)	-0.18	-0.37		-1.79	-2.73	
Central Java (1,0)	0.27	0.48	0.18	0.17	0.25	-0.25
Yogyakarta (1,0)	-0.03	-0.07	-0.03	-0.45	-0.61	7.11
East Java (1,0)	1.59	2.61	1.23	9.06	10.96	-0.03
Bali (1,0)	-0.09	-0.85	0.18	-0.02	-0.03	0.88
West Nusa Tenggara (1,0)	0.09	0.15	0.00	1.48	1.41	0.03
South Kalimantan (1,0)	0.12	0.15	0.15	-0.17	-0.25	0.03
South Sulawesi (1,0)	0.82	1.40	0.64	4.25	5.00	3.38
Total	100.00	100.00	100.00	100.00	100.00	100.00

Table 9. Decomposition of Inequality by Sub-group Regressor

(percent)

Factor inequality share	Income per capita			Expenditure per capita		
	Total	Urban	Rural	Total	Urban	Rural
Demographics	16.14	16.02	16.11	18.02	19.20	17.21
Education	8.92	7.49	10.22	9.83	10.66	9.49
Experience	0.89	0.97	0.80	0.04	-0.05	0.09
Other demographics	6.33	7.56	5.09	8.15	8.59	7.63
Asset ownership	12.71	10.16	16.20	14.76	12.00	17.67
Location	5.10	0.98	1.93	9.14	5.02	4.72
Urban-rural	3.37			3.54		
Province	1.73	0.98	1.93	5.60	5.02	4.75
Residual	66.06	72.84	65.77	58.08	63.78	60.36
Total	100.00	100.00	100.00	100.00	100.00	100.00

Table 10: Decomposition of Inequality by Sub-group Regressor,Adjusted to R-squared

(percent)

Factor inequality share	Income per capita			Expenditure per capita		
	Total	Urban	Rural	Total	Urban	Rural
Demographics	47.55	58.98	47.06	42.99	53.01	43.42
Education	26.28	27.58	29.86	23.45	29.43	23.94
Experience	2.62	3.57	2.34	0.10	-0.14	0.23
Other demographics	18.65	27.84	14.87	19.44	23.72	19.25
Asset ownership	37.45	37.41	47.33	35.21	33.13	44.58
Location	15.03	3.61	5.64	21.80	13.86	11.91
Urban-rural	9.93			8.44		
Province	5.10	3.61	5.64	13.36	13.86	11.98
Total	100.00	100.00	100.00	100.00	100.00	100.00

The result also suggests that the importance of location in explaining the inequality depend on whether the question is on overall inequality, or inequality in urban and rural area. Location is quite imporant contributor to overall inequality (22%). These are shared between urban-rural (8%) and provincial (13%) location. Location, i.e. province (without urban-rural location), however, is not important contributor to inequality in urban and rural area separately. This could simply reflect strong inequality between rural and urban region.

5. Concluding Remarks

Results on income inequality measurement and decomposition have shown us, there is a clear link between economic development, poverty alleviation strategies and income inequality. It is true that poverty and income inequality vary across regions and socioeconomic characteristics as well as the causes of such differences. The question then is how to best devise policies that would reduce poverty and at the same lessen the income inequality within as well as between the sub-groups of population. As Indonesia has been embarking on a very ambitious regional autonomy and fiscal decentralisation since January 2001, any comprehensive poverty alleviation strategy has to consider the roles among levels of government (central, provincial and local), and the communities in effectively combating poverty.

There are macro- and microeconomic aspects inherent in poverty alleviation strategies from macroeconomic stabilisation, growth, stable and conducive business environment, provision of public services to the more micro aspects of financing, production technical capacity and capability, marketing, and the like.

Macroeconomic stability and growth are clearly one of the most important contribution to reduction in proverty rates. This is especially true by looking at the remarkable reduction in poverty rates experienced by Indonesia during the 1985-1995 period and after the crisis, during the 1999-2001 period.

At the microeconomic levels, the main impetus to growth is on the economic environment within which economic agents interact with each other and contribute to the economy. Fair economic and business environment is a pre-requisite in which case competition policy and deregulation of the economy with sufficient attention paid to enhance the competitiveness of the poor or economically disadvantage. In this regard, regulation such as competition policy to ensure free and fair trade (domestic) and deregulation of the economy is considered to be necessary to lay the framework for fair economic and business environment.

To empower the poor, it is necessary to have policies that would enable them to have access to factors of production such as labor, land and capital. For example, in the case of the development of small and medium enterprises (SMEs) that could empower the poor economically, some of the general obstacles often mentioned on them are in terms of access to: capital (credit), technology (skilled level of the labor), and land (especially in the case of agriculture for landless farmer).

All levels of government (central and local) have its own role in poverty alleviation. In terms of policy this is implemented through the budget. Public expenditures are part of fiscal policy that could specifically be targeted for poverty alleviation through government programs and projects. The choices are in terms of instruments such as subsidies, in terms of direct provision of the public goods in question or the combination of subsidies and direct provision with specific attention given to targeting problems.

Within the economy as a whole, main problems to be addressed are in targeting public expenditures to lessen regional disparity which in this case is taken to be regional poverty variation. It is the role of central government, and in a more limited sense provincial government as well, in targeting poverty alleviation programs within the regional setting.

Education and health are two pillars in human resources development, in which case the poor people do not have adequate access to sometimes even to the basic minimum requirement of both. In terms of education, the government of Indonesia has required mandatory basic education for children in the primary and junior secondary level age groups. Both the question of access and improvement to basic education are at the center of any poverty alleviation strategy. There are regional and income groups variation with regard to education accessibility. It is the role of government to ensure that all children in the primary and junior secondary level age groups are enrolled in school and to ensure that minimum service standard in eduation service provision within each region/local area is being provided. The same acessibility and quality issues are relevant in health services.

It is well understood that the poor itself can be categorised further into those who are "transient poor" and those who are "ultra poor" or poorest of the poor. The transient poor are those people who economically poor on the margin. This is especially prevalent during the crisis, as evidenced from the Indonesian data. When the crisis hits, those people then become "the poor", but when the economy picks up, they move out of the poverty status. On the other hand, there are people who are really the poorest of the poor regardless of the socio-economic condition. The number of people considered to be ultra poor in this regard also varies by region (Smeru, 2002).

The question posed in relation to targeting the poor people by their category is on how to devise a policy to deal with this issue effectively, more specifically on roles should be played by each level of governments in this regard. Policies to lessen the impact of the crisis for both transient and ultra poor will best be dealt with by central government with the help of local governments especially in the needs assessment and targeting aspect of the policy. The more targeted policy towards to the ultra poor may be best left to each local government as they have the means to design and implement policies better suited to each specific needs of the region. Role of central government is still needed especially with regard to narrowing the regional poverty disparity. Certain region with high incidence of poverty, especially the ultra poor may need special assistance from the center to better cope with the problem. This should be prioritized for economically less well off regions.

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