OFFICIAL POVERTY MEASUREMENT IN INDONESIA[1]

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ABSTRACT

The methodology of poverty statistics is based on basic needs approach and head count index is used.. Poverty line is calculated by food and non food expenditure per capita. Necessity of food is calculated by the amount of money spent for food to reach the minimum enegy of 2100 calorie per capita per day. Necessity of non food is calculated by the amount of money spent for the minimum necessity for housing, clothing, health, education, transportation and other basic needs. Data from socioeconomic surveys is used to calculate both food and non food expenditure. The estimate number of poverty population is calculated for both urban and rural areas.

1. Background

Poverty alleviation has always been the main agenda for the development of the Indonesian government from the Suharto administration (1965-1997), Habibie administration (1997-1998), Abdulrahman Wahid administration (1999) to the Megawati administration (2000-presents). Several government policies and programs on the poor were developed and implemented to address this problem. The government attention on this problem has been more serious after the economic crisis, beginning in the second half of 1997. Under the Law No. 25/2000 on National Development Program (called PROPENAS), it says that the target for poverty reduction in Indonesia for five (1999-2004) is the decrease in the poverty incidence from 19 % in 1999 to 14 % in 2004. The most recent effort by government of Indonesia is the establishment of Poverty Alleviation Committee by The Presidential Decree No. 124 in 2001 and the formulation of poverty reduction strategy paper (PRSP) in 2004.

To assess the impact of government policies and programs on the poor, it is important to have a good poverty monitoring system. Poverty monitoring also provides government planners, policy makers and local leaders with data to design and improve social and economic development policies and programs for poverty alleviation. Poverty monitoring as a tool guides them in making decisions based on evidence and facts.

Currently, the official method of measuring poverty incidences for poverty monitoring in Indonesia, they are “the basic needs approach” developed by Statistics Indonesia (BPS).

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The basic needs approach is a measurement on consumption–related aspects of poverty. This method is based on a poverty line, which is an average consumption (in Rupiahs) of basic essentials contained of a food bundle (52 items) and non-food bundle (46 items) as typically consumed by a reference group (a group of people whose expenditures lie just above the "expected poverty" line, i.e., previous poverty line deflated by inflation rate). An individual whose monthly expenditure is below poverty line is considered poor. This approach provides a macro indicator of poverty since it is based on small samples and intended primarily to provide output indicators of poverty for national and provincial level of government, not for district level. In other words, it is not operationally applicable for targeting purposes.

This paper reviews the official method of measuring poverty in Indonesia and presents its results.

2. Reviews on Official Method of Poverty Measurement in Indonesia

a. The Basic Needs Approach

The basic needs approach is an official method used by Government of Indonesia to estimate the number of poor population in Indonesia. This approach officially started by BPS in 1984 (BPS, 1984), with the data covering the period 1976-1981. This approach is originally used for national and provincial poverty monitoring system, but starting from 2001, the estimation has also been expanded to district level for budget allocation purpose. The estimation procedures of this approach and its developments are explained below.

b. Estimation Procedures

The basic needs approach is based on the consumption module of National Socio-Economic Survey (SUSENAS). The consumption module of SUSENAS collects data on more than 300 items of consumption expenditure (quantities and values) for a representative of 30 provinces. The sample size is about 65,000 households for every three years (since 1981), and 10,000 panel households (since 2003) between three years. In addition to the consumption module of SUSENAS, BPS also collect the core data of SUSENAS annually for 23 aggregated expenditure categories in a sample of 200.000 households as a representative of 340 districts.

With this approach a poverty line is obtained by specifying consumption bundle (food and non food) considered adequate for basic needs and then estimating the costs of

these specified basic needs. According to Ravallion and Bidani (1994:77), basic needs refer to “a socially determined normative minimum for avoiding poverty”, and “the cost of basic needs is then closely analogous to the idea of a statutory minimum wage rate”. Since income data is unreliable in Indonesia, BPS uses expenditure data as a proxy of income for defining a poverty line, a cut-off point of this minimum standard for food and non-food needs per capita per months. By applying the poverty line to data on population expenditures, the number of population living in poverty can be obtained. This method of estimating poverty is often called as head-count index method.

The minimum standard for food adequately required by an individual is based on the recommendation of the National Workshop on Food and Nutrition in 1978, which says that, in order for a person to stay healthy, one must consumed as much as 2,100 kilo calories per day. The food poverty line is defined as the total expenditure in Rupiahs required to purchase food needed to satisfy the 2100 calories energy requirement per capita per day. This standard is measured using the result of SUSENAS.

Before 1993, the average price of calorie was computed by dividing the monthly expenditure for food with per capita calorie. By determining the 2100 calories-equivalent energy requirement, the amount of rupiahs needed to satisfy such requirement can be computed. The calculation was done separately for urban and for rural areas.

In 1993, the method of computing the value of the daily minimum standard for calorie intake was improved. The value of rupiahs for the 2,100 calories – equivalent energy requirement is computed from 52 selected commodities, by taking into account differences among provinces. Hence, the choice of food items may not necessarily the same among provinces. The selection of food commodity basket is determined on the basis of the volume of calories consumed and the frequency of consumption by household on average in particular region. The item selection was also considering the importance of several essential commodities in Indonesia and the number of commodities included in each group of food expenditures. The selection of food commodity basket does not distinguish between those in urban and rural areas. Therefore, the differences in values of expenditure spent for purchasing these food commodities between urban and rural population refers to differences in volume and prices of each selected food item, which also reflects differences in the values of minimum food need in both areas. Besides that, urban-rural price differential indirectly indicates different quality of each food item between both areas. Comparability between provinces is of course sacrificed. However, if one refers to the standard of 2,100 calories, comparability is maintained.

In 1996, the same 52 selected commodities in 1993 were also used in the calculation of the rupiah value of 2100 kilo calorie-equivalent food sufficiency. Two issues are involved in such a setting. First is the kinds of items considered as basic needs, and second relates to the standard being used, which is the standard as shown in the life style of people belonging to a class of population just above the expected poverty line (the reference population). The reference population is so chosen, so that a person who can afford such a lifestyle, should not be classified as poor. The reference population is updated to account for inflation rate, hence, maintaining more or less the same class of real income. For the selection of commodities in the bundle, the basic principal that is applied is that the commodities should be commonly consumed (by the reference population), and therefore constitute as an essential commodity. The commodity should also have reasonable budget share in the sub-group of commodities, so as not being negligible, and is strongly viewed as an essential commodity, when it does not meet other requirements. In 1999 and 2002, the selected food commodity basket also consists of 52 items but with some changes compared to 1996. (see Sutanto and Avenzora, 1999)**.**

For non-food consumption, before 1993, a certain mark-up was applied to the food poverty line to arrive at the final poverty line. A number of essential non-foods items, including clothing, housing, health, education, transportation, and other essential non-foods were selected as the mark-up. For each of the items, the amount considered as the minimum requirement was set arbitrarily based on value judgment. Urban and rural regions were treated differently, in terms of both the number of non-food items and the minimum requirement for each item. Similar to food standard, the non-food standard rests on the lifestyle of the reference population. The same criteria for selection of food items are also applied. For the year 1993 and 1996, however, the choice of non-food commodities was still very conservative, not to loose its comparability with the previous figures, which notably employed different approach of measurement. Method of measuring these minimum standard for non food items has also been improved significantly in 1999, when the list non-food items were completely revised based on the results of the 1995 Basic Commodity Basket Survey (*Survei Paket Komoditi Kebutuhan Dasar 1995*). Regional variations are also taken into account in setting the minimum non-food standard. Since lifestyle is believed to be different between urban and rural areas, urban-rural differences are taken into account. The non-food items selected consisted of 51 items for urban and 47 items for rural, covering expenditure for housing, clothing, education, transportation, durable goods and other essential goods and services. The

averaged values of expenditure for each of the selected non-food items per capita per month are added up to get the minimum standard for non-food sufficiency.

c. The Choice of Reference Population

Issues relating to the choice of reference population should be dealt with more carefully. The fact that the reference population is much higher in urban than in rural, may have led to the much higher poverty line in urban than that in rural. The official poverty line has been criticized for being much higher in urban than in rural, not representing the cost of living differential (Ravallion, 1993). However, using the 1999 SUSENAS data, Sutanto (1999) found that the choice of reference population did not contribute to the differences between rural and urban living standard.

It is important to not that the new approach of applying food and non-food bundle, which has started since 1993, were constrained so as to maintain comparability. Therefore, the reference population of 1993 was set on the basis of the 1990 poverty line, taking into account the inflation rate between 1990 and 1993. Other period applies similar procedure.

d. The Issue of Regional Representativeness

Analysis of poverty incidence across regions and between periods can be assured to be methodologically consistent, if the poverty line is held constant in terms of the living standard being used (Ravallion, 1992, 1993; Ravallion and Bidani, 1994). The poverty lines applied for different regions over time therefore should reflect the same purchasing power of the poor over basic consumption needs, regardless of place and time being considered. For that reason, since 1999 the poverty lines for different regions have been standardized to the Jakarta, using the relative prices of all comodities selected in the consumption bundle.

e. Method of Measuring Poverty Gap and Severity Indices

Analysis of poverty measures should not only be restricted to assessing the number of the poor, as indicated by head-count index. But it is also crucial to see the poverty gaps and its severity. As Sen (1976) pointed out, head-count index fails to explain the depth and severity of poverty. Head-count index can provide information on the proportion of population living below the poverty line. This measure, however, does not tell how poor

the poor are, since it remains unchanged if a poor person becomes poorer (Ravallion and Huppi, 1991; Foster, 1984). Poverty measures should rise as the living standard of a poor household decreases, hence satisfying "the monotonicity axiom" or when income is transferred from a poor to a less poor household, thus fulfilling "the transfer axiom" (Sen, 1976).

These criteria suggest that poverty measures should not simply indicate the incidence of absolute poverty, but they should also consider the distribution of income among the poor. One measure that can indicate shifting in the degree of poverty among the poor is the poverty gap index. This index is derived from a class of additively decomposable measures, as proposed by Foster, Greer, and Thorbecke (1984; hereafter FGT index), which provides some more sensitive poverty indices than head-count index, especially to indicate the depth and severity of poverty. The poverty gap index explains the average (of all households) of gaps between the income (living standard) of the poor and the poverty line, expressed as a ratio of the poverty line. The index indicates the depth of the poverty. The poverty gap index, however, is not sensitive to the distribution of income among the poor, thus it does not capture the severity of poverty. The FGT class of measures includes both measures of poverty depth and severity. It provides a distributionally sensitive measures – a parameter α, where the larger is α, the greater the weight applied by index to the severity of poverty.

The FGT index measurement considers poverty as dependent on poverty gap ratio, and assumes α as the power of that ratio. Let y_i represent the averaged consumption value per capita for the *i*-th person's household when households are ranked in ascending order of consumption. The poverty line is *z* and the poverty gap for individual *i* is $(z-y_i)$, total population is denoted as *n* and the number of poor population as *q*. The FGT formula is then written as follows:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{z-y_i}{z}\right]^\alpha$$

where $(z-y_i)/z$ is the poverty gap ratio. Three measures of α are:

1) $\alpha = 0$ is simply the head-count index, as indicated by the proportion of the population living below the poverty line $P_0 = q/n$. For instance, if 30% of the population are classified as poor, thus $P_0 = 0.3$.

2) $\alpha = 1$ is the averaged poverty gap in the population, expressed as a proportion of the poverty line, $P_1 = 1/n \sum (z-y_i)/z$. $P_1 = 0.2$ means that the aggregate deficit of the

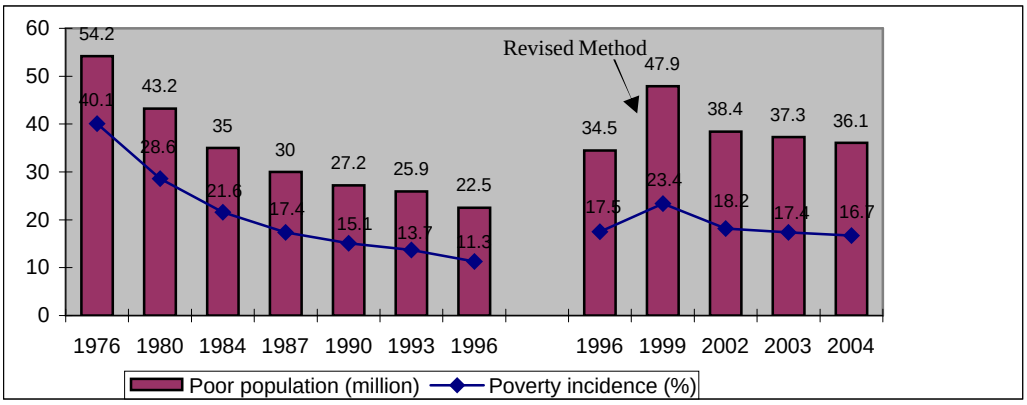
poor relative to the poverty line, when averaged over all households (whether poor or not), representing 20% of the poverty line. $P_1/P_0 = 1/q \sum (z-y_i)/z$ is the mean poverty gap of the poor as a proportion of the poverty line.

3) $\alpha = 2$ is a measure of distributionally sensitive index that can detect the income (or expenditure as a proxy of income) distribution among the poor. This measure satisfies most welfare axioms, namely "the monotonicity axiom" (given other things, a drop in the income of a poor household must increase the poverty measure) and "the transfer axiom" (given other things, a pure transfer of income from a poor to a less poor household must increase the poverty measure).

f. Poverty Incidence in Indonesia, 1976-2004

The trend of poor population and poverty incidence in Indonesia from 1976-2004 can be seen from the following Figure 1. Prior to the economic crisis in 1997, the poverty incidence in Indonesia showing a steep decline between 1976 and 1996 from 40.1 per cent to 11.3 per cent respectively. With the onslaught of the economic crisis, beginning in the second half of 1997 and reaching its peak by 1998, many of Indonesia's genuine achievements in social development appeared to be threatened. Poverty reduction trends were reversed and by 1998 almost 50 million people were living in absolute poverty, nearly as many as twenty years ago. Economic recovery is slow, and poverty incidence still amounts to some 16.7 per cent in 2004.

Figure 1: Poverty Trends in Indonesia (1976 – 2004)



Source: SUSENAS based poverty line computation

The majority of poor people live in rural areas. In absolute value, Table 1 shows that the number of poor people is about two time of that of in urban areas during 1990-2004.

Table 1.

Number & Percentage of Poor People by Urban-Rural Areas, 1990-2004

Year	% Poor People (Headcount Index)			Number of Poor People (in million)		
	Urban	Rural	Urban+Rural	Urban	Rural	Urban+Rural
1990	16.8	14.3	15.1	9.4	17.8	27.2
1993	13.4	13.8	13.7	8.7	17.2	15.3
1996	9.7	12.3	11.3	7.2	15.3	22.5
1999	19.4	26.0	23.4	15.6	32.3	47.9
2002	14.5	21.1	18.2	13.3	25.1	38.4
2003	13.6	20.2	17.4	12.2	25.1	37.3
2004	12.1	20.0	16.7	11.4	24.7	36.1

Based on regional estimates (by province level) in 2004, Table 2 shows the high percentage of poor people in the province of West Irian Jaya (27.76 Papua (30.74), Central Sulawesi (24.89 %), Southeast Sulawesi (24.22 %), and Gorontalo (32.12 %).

Table 2
Number and Percentage of Poor Population, 2004

Province	Poor population (in thousand)	% of Poor Population
Nanggroe Aceh Darussalam	1,157.2	28.47
North Sumatra	1,800.1	14.93
West Sumatra	472.4	10.46
Riau	658.7	14.67
Riau Islands	85.7	7.24
Jambi	325.1	12.45
South Sumatra	1,379.3	20.92
Bengkulu	345.1	22.39
Lampung	1,561.7	22.22
Bangka Belitung	91.8	9.07
Jakarta	277.1	3.18
West Java	4,654.2	12.10
Central Java	6,843.8	21.11
Yogyakarta	616.2	19.14
East Java	7,312.5	20.08
Banten	779.2	8.58
Bali	231.9	6.85
West Nusa Tenggara	1,031.6	25.38
East Nusa Tenggara	1,152.1	27.86
West Kalimantan	558.2	13.91
Central Kalimantan	194.1	10.44
South Kalimantan	231.0	7.19
East Kalimantan	318.2	11.57
North Sulawesi	192.2	8.93
Central Sulawesi	486.3	21.69
South Sulawesi	1,241.5	14.90
Southeast Sulawesi	418.4	21.89
Gorontalo	259.1	29.00
Maluku	397.6	32.13
North Maluku	107.8	12.42
West Irian Jaya	256.5	40.20
Papua	710.3	37.92
INDONESIA	**36,146.7**	**16.66**

g. Depth and Severity of Poverty

After the period of the 1997 economic crisis, both indices of poverty gap (P1) and severity (P2) have worsened quite drastically in Indonesia both in Urban and Rural as shown in the following Table 3. In urban areas, the poverty gap and severity index in 1999 reached 3.52 % and 0.98 % respectively. Similarly in rural areas, the poverty gap and severity index drastically increase in 1999 reached 4.84 % and 1.39 % respectively. The figures mean that the gap between the average living standard of the poor in urban

and rural areas in 1999 from the poverty line has widened as much two and half times as the previous condition in 1996.

Table 3.

Indices of Poverty Gap (P1) and Severity (P2), Urban and Rural Indonesia, 1996-2004

Year		Urban	Rural
P1:	1996	1.59	1.80
	1999	3.52	4.84
	2002	2.59	3.34
	2003	2.55	3.53
	2004	2.18	3.43
P2:	1996	0.50	0.43
	1999	0.98	1.39
	2002	0.71	0.85
	2003	0.74	0.93
	2004	0.58	0.90

However, since 2002 the indices of poverty gap and severity has decreased slightly both in urban and rural compared to 1999.

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