# POVERTY AND INEQUALITY IN INDONESIA[*]

## Estimates, decomposition, and key issues

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**Abstract**  This article argues that the decline in the incidence of poverty in Indonesia during the past two decades, as shown by the official estimates, is statistically as well as practically significant. Decomposition results using the official estimates indicate that intra-sectoral effects, in particular the decline in rural poverty in the 1980s, were the largest contributor to the drop in aggregate poverty. The decomposition also shows an unexpected result that population shift did not have a positive impact on poverty reduction. Growth-equity decomposition proves that economic growth has been responsible for much of the poverty reduction. The official estimates of inequality in consumption distribution, measured by the Gini coefficient, do not show obvious changes in inequality, but an over-time pattern can still be detected. I discuss two key issues that concern the official poverty estimates: the poverty level and urban-rural poverty comparison. I also consider the usual expenditure inequality, provide estimates of income inequality, and address issues concerning the group price-specific index and different ways of looking at changes in equality.

**Keywords**  Indonesia, official estimates, poverty lines, inequality, decomposition.

## INTRODUCTION

Official estimates of the incidence of poverty in Indonesia indicate a significant decline from the mid-1970s. In this article we will turn to the 'official' poverty and inequality estimates prepared for the Indonesian government, to assess this decline. I examine trends and sectoral and growth-equity components of the changes revealed by these estimates, and discuss key issues arising from them. Official estimates have been called into question sharply by several analyses (e.g. Ravallion 1992; Ravallion and Bidani 1994; P.T. Insan Harapan Sejahtera 1997; White 1996). Nevertheless, I maintain that these estimates are significant since the government is undoubtedly the most important institution for poverty alleviation in Indonesia, and it is useful for us to understand the statistics that it has prepared and used for policy planning (Drewnowski 1977).

Because of the limitations on government estimates, however, I examine findings and views concerning poverty and inequality in Indonesia beyond those put forward in official discussion. This is to present a more comprehensive picture of developments and to enable us to discuss the official statistics in a broader context.

## HISTORICAL PERSPECTIVE

In August 1992 before the People's Consultative Council (DPR), Indonesian President Suharto formally announced figures that revealed the incidence of poverty in Indonesia: 27 million poor people, or about 15 per cent of the total population in 1990.[1]  The announcement itself, coming from the President, appears to have been instrumental in legitimizing public discussion of this issue. The nation's incidence of poverty for the

period 1976-81 had been estimated 'officially' by the Biro Pusat Statistik (BPS, the Central Bureau of Statistics) in 1984,[2] yet it was not until eight years later that the President opened the issue of poverty widely to public attention in his DPR announcement. The delay in making the official announcement is itself an interesting matter, and is possibly because political and economic circumstances made the President perceive that session of the DPR in August 1992 to be an appropriate time to raise the poverty issue for national attention. Whatever the reason, the August 1992 official disclosure became a trigger for broad public discussion of poverty in Indonesia and elevated the issue as a matter of public concern.

Two weeks after an April 1993 meeting on poverty alleviation between the President and fourteen government ministers, Minister Ginanjar, as Coordinating Minister for Economy and Finance, delivered to the President information on poverty pockets or poor districts *(kecamatan)* (*Berita Yudha*, 29 April 1993). This information is one of the critical elements in the design of the poverty alleviation programme. Yet the information about poverty pockets provided by the minister was replaced by information produced essentially by the BPS. Clearly, the political import of this information makes it a sensitive issue.

Yet, while formal acknowledgement of the extent of Indonesia's poverty has come only in the 1990s, the problems of income inequality, which might seem to link closely with poverty, have been aired openly in Indonesia for over two decades. A presidential speech to the People's Consultative Assembly (MPR) in August 1978 became a policy turning point on the issue of wealth distribution in the context of Indonesia's economic development. The 1978 speech indicated increasing concern by the government to create a more even distribution of income, with a shift in priority among the objectives of development policy to give equity highest priority.[3]

SIMPLE ANALYSIS BASED ON OFFICIAL ESTIMATES

**Economic growth**

The early years of the Suharto government from 1967 saw unprecedented and impressive economic growth. This was due largely to growing overseas demand for Indonesia's industrial raw materials. Oil and timber exports produced a windfall income. The availability of this income generated from resource-based exports led to increase capital formation in agriculture, substantial rises in production and productivity of rice, and improved capacity in both the domestic mining and forestry industries. An open-door policy made it easier for Indonesia to import raw materials, and the inflow of foreign capital also increased substantially (Booth 1992b; Garnaut 1980; McCawley 1979).

From the mid-1980s the economy experienced slower economic growth overall. Manufacturing maintained its upward trend, still with high growth rates in employment and in a rise in manufacturing GDP from 13 per cent in 1983 to 22 per cent in 1991, which surpassed the growth rate for agriculture (Hill 1992; Manning 1997; World Bank 1996). Agriculture lost some of the earlier momentum. The rise subsector decelerated (World Bank 1990), the growth rate of average income per hectare of wetland rice declines (BPS 1995) and by the end of the 1980s growth rates for employment opportunities in agriculture began to fall (Manning 1997).

In short, throughout the period 1970-96, Indonesia's economic growth was impressive. Structural changes in the Indonesian economy were apparent during this period. And with growth and structural change in the Indonesian economy, we also observe that the poverty level declined noticeably.[4]

**Poverty**

Before 1993, the BPS defined the food poverty line as the total expenditure needed to satisfy an energy requirement of 2,100 calories per capita per day (see BPS 1984). In data computation, however, it used an 'imaginary' total expenditure that assumed all expenditure was spent on calories.[5]

Before 1990, the allowance for non-food items was derived by using expenditure on some 'essential' non-food items as a percentage of the total expenditure of those in the 'poor class', to mark-up the food poverty line and arrive at the total poverty line (BPS 1984: 18; 1987b:19). The essential non-food items differed slightly between urban and rural populations. In 1990 the calculation changed; the allowance for non-food items was derived by using the *absolute* amount of expenditure on twelve to thirteen essential non-food commodities of the 'poor class' (BPS 1992: 11).

Since 1993, Indonesia has adopted the basic needs approach for both food and non-food calculations. Fifty-two food items have been chosen (for both urban and rural areas). Their quantities have been determined after being scaled-up to satisfy the 2,100-calori requirement,[6] and the SUSENAS (National Socio-Economic Survey) implicit prices have been used to derive the poverty lines. This new methodology for deriving the food poverty line is easier to understand and simpler in terms of data requirements.[7]

The number of non-food items has been increased to forty-six, representing essential non-food needs such as housing, clothing, education, health, transportation, durable goods and essential miscellaneous items.[8] Non-food commodities are no longer exclusively those of 'the poor" and instead they are 'ideal' non-food commodities and are the same for both urban and rural populations. However, to compute the non-food allowance, the actual expenditure of the 'poor' classes has been used.[9] The total poverty line was then calculated by simple addition of the food poverty threshold and the non-food poverty allowance.

Table 1 shows very encouraging trends in the poverty level over the period 1976-96. We see that the percentage of the population below the poverty line dropped from 40 per cent to around 11 per cent, an overall reduction of almost 75 per cent in two decades. The biggest drop in poverty incidence took place during the period 1976-81. During these first five years of the period, the fall was 13 percentage points, while in the following twelve years (1981-93) the declined was only 16 percentage points. The decline occurred in both urban and rural areas. Before 1980, poverty incidence in urban areas was lower than in rural areas. However, from 1980 to 1993 (except in1984), the reverse was true. Since 1993, we see a return to the pre-1980 situation of lower poverty incidence in urban than in rural areas, with data from this time based on the new methodology.

Table 1: Trends in the Official Poverty Incidence[a]

| Year | Po = poverty incidence | | | t-Test for the difference[b] (for total) | P1 | | | P2 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | U | R | T | | U | R | T | U | R | T |
| 1976 | 38.8 | 40.4 | 40.1**[c] | | | | | | | |
| 1978 | 30.8 | 33.4 | 33.3** | | | | | | | |
| 1980 | 29.0 | 28.4 | 28.6** | | | | | | | |
| 1981 | 28.1 | 26.5 | 26.8** | - | - | - | - | - | - | - |
| 1984 | 21.2 | 23.1 | 21.6** | 13.3** | - | - | | - | - | - |
| 1987 | 20.1 | 16.4 | 17.4** | 16.8** | 3.15 | 2.83 | 2.92 | 0.95 | 0.76 | 0.81 |
| 1990 | 16.8 | 14.3 | 15.1** | 6.7** | 3.23 | 2.06 | 2.42 | 0.94 | 0.53 | 0.66 |
| | [16.1][e] | [15.7] | [15.8**] | | | | | | | |
| 1993 | [13.4] | [13.8] | [13.7**] | 8.1** | [2.28] | [1.99] | [1.73] | [0.61] | [0.50] | [0.54] |
| 1996 | [9.7] | [12.3] | [11.3**] | 22.5** | [1.59] | [1.80] | [1.72] | [0.41] | [0.43] | [0.42] |
| | | | | | | | | | | |
| 1970-81 | | | | 83.6** | | | | | | |
| 1981-90 | | | | 47.0*[d] | | | | | | |
| 1990-6 | | | | 22.9* | | | | | | |

Sources: BPS (1984, 1987b, 1989, 1992, 1994, 1995, 1997a).
Notes:
[a] $P_0$, $P_1$ and $P_2$ are FGT index with alpha = 0, alpha = 1 and alpha = 2 (see Foster et al. 1984).
[b] Author's calculations using the formula given by Kakwani (1993), assuming a random sample. The SUSENAS is obviously a complex cluster/multi-stage sample and standard errors of the estimates may differ from those based on a random sample (Frankel 1974). The tests are for the difference between the current poverty figure and the previous figure.
[c] **Significant at the 1% level.
[d] *Significant at the 5% level.
[e] Figures within square brackets are based on the new methodology.

The extent of the decline in poverty incidence over the twenty years highlighted here is not only practically significant, but also statistically significant. All t-statistics of the differences of poverty incidences during any two successive year points, using the approach proposed by Kakwani (1993), are significantly different from zero (statistically), indicating that the observed drop in the poverty incidence over these years is most likely not due to chance.[10]

What has brought about the rapid reduction in poverty in Indonesia, particularly in rural areas? The reasons have been well documented (see in particular World Bank 1990, 1994, 1996). Development in the agricultural sector, financed in part by oil revenue, has contributed significantly to the reduction in rural poverty. This has been due mostly to improved productivity in the rice sector, especially in the 1970s and 1980s. The end result was the increase, in real terms, of the profitability of rice production and rice farming incomes (World Bank 1990). Average incomes per hectare for wetland rice, for instance, grew significantly during the first three Pelita (five-year plans): by 18.6 per cent per year during Pelita I and II, and by 14.4 per cent between Pelita II and III. The growth rates for other food crops such as corn and soybean were even higher than those for wetland rice (BPS 1997a).

During the 1980s and 1990s, output per person in manufacturing grew by 65 per cent and in services it grew by 42 per cent. Both sectors recorded growth much higher than the productivity growth in the agricultural sector. During this time there has been a

re-allocation of workers to these higher productivity jobs in manufacturing and services. Booth (1993) claims that this rapid decline in the poverty incidence, particularly in rural Java, is due mostly to rapid growth in both the wage income and expenditure or rural households, because of the increase availability of off-farm wage employment such as in agricultural processing, transport and trade. This growth has combined with growth in construction and manufacturing sectors in urban and rural areas. Employment growth in agriculture decline to the point where the sector shed labour at the rate of 2 per cent in 1990-3 (World Bank 1996; Manning 1997).

To summarize, when we consider developments on poverty in Indonesia during the past two decades, the Indonesian economy has undergone structural changes arising from labour-intensive industrialization and improvements in the rural sector (particularly in agriculture). The changes have occurred especially since the mid-1980s after the government introduced deregulation measures. Concomitantly, these forms of economic growth in industry and agriculture have induced a decline in the poverty incidence in Indonesia during this time period.[11]

*Sectoral decomposition (urban-rural)*

Table 2 presents the urban-rural decomposition of the change in aggregate poverty incidence by its intrasectoral and intersectoral effects.[12] Significant reduction in poverty incidence during the 1980s in both urban and rural areas led to significant intrasectoral effects, and in particular gains to the rural sector. At least 77 per cent of the drop in aggregate poverty is attributed to the decline in rural poverty. The contribution of the decline in rural poverty in relation to total poverty feel in the period 1990-6.[13] Population has also shifted over time: the share of population residing in the high-income, urban sector increased from 21.9 per cent in 1981 to 31.0 per cent in 1990 and further to 37.4 per cent in 1996, indicating the mobility of the population towards urban areas and higher incomes. We could expect this population movement to have a positive impact on poverty reduction. However, the decomposition results show that contrary to expectation, improvements in the poverty level in both urban and rural areas were dampened very slightly by the negative intersectoral effect. This is partly because the official urban-rural poverty lines (thus incidences) were not consistent (Ravallion 1992; Ravallion and Bidani 1994); the difference in the urban-rural poverty lines in far above any reasonable difference in the standard of living.[14] Such an outcome is one of the disturbing characteristics of the official poverty lines (in particular those based on the old methodology) and we will take up the issue later in this paper.

*Table 2:* Components of poverty alleviation, 1981-96 (percentage of total poverty reduction)

| Period | Intrasectoral effects | | Intersectoral population shifts | Interaction effect |
|---|---|---|---|---|
| | Urban | Rural | | |
| (a) 1981-90 | 23.7 | 76.7 | -1.3 | 0.9 |
| | (21.1) | (80.8) | (-1.2) | (-0.7) |
| (b) 1990-6 | 44.3 | 52.0 | -0.6 | 4.3 |
| | (58.3) | (37.4) | (-4.1 | (8.5) |

*Source:* Author's calculations from the estimates of poverty incidence given in Table 1. The results for FGT, $P_1$ and $P_2$ measures are not presented here as they lead to similar conclusions.
*Note:* Figures within parenthesis are based on the old 1990 poverty lines.

*Growth-equity decomposition*

Table 3 provides estimates of the relative contribution of growth and equity to poverty alleviation in urban and rural areas respectively.[15] Let us examine each area more carefully.

*Table 3:* Decomposition of changes in poverty measures into consumption and redistribution effects, 1981-90 and 1990-6

| Period | Higher mean consumption | Change in distribution | Residual | Consumption point elasticity of P at initial year |
|--------|------------------------|------------------------|----------|--------------------------------------------------|
| **Urban** | | Head-count index | | |
| 1981-90 | 105.73 | -10.57 | 4.84 | -2.12 |
| 1990-6 | 136.89 | -45.07 | 8.18 | -2.88 |
| | | Poverty gap index | | |
| 1981-90 | 97.97 | -3.45 | 5.48 | -3.03 |
| 1990-6 | 163.16 | -68.3 | 5.14 | -4.57 |
| | | Distributionally sensitive index | | |
| 1981-90 | 95.24 | 2.33 | 2.43 | -3.91 |
| 1990-6 | 200.03 | -103.86 | 3.83 | -6.27 |
| **Rural** | | Head-count index | | |
| 1981-90 | 58.54 | 41.31 | 0.15 | -2.51 |
| 1990-6 | 174.77 | -89.94 | 15.18 | -3.61 |
| | | Poverty gap index | | |
| 1981-90 | 55.11 | 53.54 | -8.66 | -3.50 |
| 1990-6 | 149.93 | -70.38 | 20.45 | -5.46 |
| | | Distributionally sensitive index | | |
| 1981-90 | 56.10 | 60.83 | -16.93 | -4.51 |
| 1990-6 | 137.66 | -62.05 | 24.39 | -7.37 |

*Sources:* Author's calculations based on the published consumption expenditure data of the National Socio-economic Surveys (SUSENAS). Estimates of FGT measures were derived using a POVCAL program. With one exception, the general quadratic Lorentz curve fits very slightly better than Kakwani's beta Lorenz curve.
*Notes:* The decomposition formulae used here are those used by Ravallion and Huppi (1991). The decomposition estimates were derived using current price consumption distributions and two possible Loretz curve specifications (general quadratic and beta Lorentz curves). Ideally, constant price consumption distributions should be used. However, group-specific price indices for urban and rural areas for the periods under study are not available. Nevertheless, using constant price consumption distributions based on a single price index from the consumer price index, the present conclusion remains, although the contribution of growth is somewhat less.

**Urban areas**

During the period 1981-90, poverty incidence dropped from about 28 per cent to 17 per cent. Most of this reduction in poverty can be attributed to higher mean consumption at a given consumption distribution.[16] This growth impact was more prevalent during the period 1990-6. The decomposition shows that the change in consumption distribution has had an adverse effect on poverty alleviation. Indeed, the period 1990-6 experienced a slight increase in inequality of consumption as measured by the Gini coefficient.

The estimates of the elasticity of poverty with respect to the distributionally neutral growth for these three FGT measures show that poverty is highly sensitive to economic growth. Poverty decreases faster than the rate of increase in mean per capita consumption.[17]

## Rural Areas

Unlike in urban areas, in rural areas the positive impact of both higher mean consumption and change in consumption distribution are more or less about the same during the period 1981-90. A positive percentage of the distribution component suggests that an improvement in the equity of consumption, holding the mean per capita consumption level constant, will result in poverty decline. The impact of the change in consumption distribution, as expected, is greater for the poverty gap and distributionally sensitive indexes.[18]

## Inequality

Table 4 provides the official estimates of the two 'traditional' inequality measures (the Gini coefficient index and the percentage expenditure share of the bottom 40 per cent). The values of the two indicators have changed very slightly, but a certain trend can still be identified. Until the late 1970s, inequality worsened in consumption distribution, though we see an improvement in the 1980s.[19] However, in the 1990s we see a clear trend towards greater inequality in consumption, a trend that was evident in both urban and rural areas. But while both areas experienced greater consumption inequality, this inequality remained higher in urban areas than in rural areas throughout the period.

*Table 4:* Trends in inequality of expenditure, 1969/70-1996

| Indicator | 1969/70 | 1976 | 1978 | 1980 | 1981 | 1984 | 1987 | 1990 | 1993 | 1996 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Gini index** | | | | | | | | | | |
| Total | 0.35 | 0.34 | 0.38 | 0.34 | 0.33 | 0.33 | 0.32 | 0.32 | 0.34 | 0.36 |
| Urban | - | 0.35 | 0.38 | 0.36 | 0.33 | 0.32 | 0.32 | 0.34 | 0.33 | 0.37 |
| Rural | - | 0.31 | 0.34 | 0.31 | 0.29 | 0.28 | 0.26 | 0.25 | 0.26 | 0.28 |
| **Percentage share of bottom 40%** | | | | | | | | | | |
| Total | 18.62 | 19.56 | 18.13 | 19.55 | 20.44 | 20.75 | 20.87 | 21.31 | 20.34 | 20.28 |
| Urban | 19.48 | 19.56 | 17.40 | 18.66 | 20.83 | 20.63 | 21.48 | 19.67 | 20.48 | 19.03 |
| Rural | 19.56 | 21.22 | 19.88 | 21.16 | 22.81 | 22.35 | 24.30 | 24.41 | 25.12 | 23.24 |

*Sources:* Various issues of Statistik Indonesia produced by BPS. The 1996 figures were provided by the staff of the BPS's Division of Household Statistics.

## PROBLEMS WITH THE OFFICIAL ESTIMATES

## Poverty

At least two important concerns make the official poverty line (and thus the official measurement of poverty incidence) problematical. One is the accusation that the official estimates of poverty levels are much lower than could reasonably be expected given Indonesia's stage of economic development over the period.[20] It suggests that the official estimates are too low, hence incomparable with the countries' poverty lines. The second questions the comparability of poverty incidence in urban and rural areas.

*Why the official poverty line is too low*

One significant reason why the official poverty line can be considered too low is that its non-food allowance to the (total) poverty line could reasonably be recognized as too stringent. In the Philippines, for instance, the percentage adjustment to the food poverty lines to derive the (total) poverty line has always been between 40 and 90 per cent. In Indonesia, the non-food component of the (total) poverty line for the years 1981 to 1996, for example, ranges from about 14 to 22 per cent in urban areas and from 3 to 16 per cent in rural areas (see various issues of BPS publications; Asra and Virola 1992; Booth 1993). The Indonesian non-food component is clearly dramatically lower than the Philippines example.

It is a valid argument that the components of food and non-food in the poverty line should ideally be close to the observed consumption pattern.[21] The SUSENAS results shows that the share of the non-food component in the average per capita monthly expenditure for the period 1984-96 varies between 46 per cent and 52 per cent in urban areas and between 31 per cent and 37 per cent in rural areas (BPS 1997b: 520). Meanwhile, in 1993 for example, the non-food shares used in the poverty line were only 16.5 per cent and 14.6 per cent for urban and rural areas respectively. Thus, the non-food share in (total) poverty lines has been much lower than the non-food share observed in the consumption patterns of Indonesian society. Even if the consumption pattern of the so-called 'poor class' is used, the non-food shares used to construct the official poverty line are still lower than the non-food shares in the expenditure of the poor.[22]

Assuming the (observed) average per capita monthly non-food expenditure is the 'ideal' non-food expenditure, the official data indicate that in the 1980s and early 1990s most of the non-food allowance accounted for less than 20 per cent of the 'ideal' non-food expenditure. Hence, regardless of whether the allowance for non-food goods is anchored to the consumption behavior of the poor or to the consumption behavior of the whole population, the non-food share in Indonesia's poverty line can be considered as too low.[23]

*Urban-rural poverty lines and incidence*

Estimates from non-official sources (except those by Sayogyo and Wiradi), reveal that the poverty incidence in rural areas was always higher than in urban areas throughout the period. The official estimates, however, which use the old methodology, showed that between 1980 and 1993, urban poverty incidence was higher than rural poverty incidence. This official calculation has been criticized particularly by Ravallion (1992) and Ravallion and Bidani (1994) who have argued that the urban-rural differential of the poverty lines (at about 70 per cent for the period 1984 to 1987) is far above the urban-rural cost of living differences. Ravallion and Bidani (1994) have also dealt extensively with these regionally inconsistent poverty lines, which these authors claim have resulted in misleading poverty measures. Crucial to appreciating this issue is the question of 'consistency' which is necessary to enable a meaningful urban-rural comparison of the poverty profile. Ravallion and Bidani (1994) show that the implied urban and rural food bundles yielding 2,100 calories per person per day for 1990 differ considerably from

each other, which suggests that standard of living also differs between urban and rural areas.

The issue of urban-rural comparability was also raised by Booth (1993) and Asra and Virola (1992). These studies argue that using the cost-of-calorie method (a variant of food-energy-intake method of FEI) to derive poverty lines, the BPS estimates produced poverty lines that were incomparable between urban and rural areas on standard of living. The official poverty lines indicate that except for 1996, for the years since 1976, the ratios of urban to urban poverty lines have always been between 1.50 and 1.77. Asra and Virola (1992) also found that in calculations for 1976 and 1981 the quality of food consumed in urban areas was higher than the quality of food consumed in rural areas. This was indicated by the lower percentage of calories derived from less nutritious food items such as cereals, roots and tuber, and sugar, in rural areas.[24] In sum, by indicating that poverty incidence was higher in urban areas than in rural areas, the BPS calculations for the decade 1980-90 might have shown a ranking that is misleading.[25]

In Table 5 we see simulation results that show the effects of the 10 per cent difference in urban-rural poverty lines on analysis of components of the change in total (aggregate) poverty incidence.[26] These results can be compared with the decomposition results derived using the official poverty lines contained in Table 2. As we might suspect, the simulation results, unlike the results of decomposition using the official estimates, confirm the findings of Ravallion and Happi (1991) that population shift had a significant and positive role in alleviating poverty. The decomposition results using official poverty lines depict the insignificance and negative inter-sectoral effect of population shifts from rural to urban areas. However, the simulation results in Table 5 show quite the opposite – that the intersectoral effect was considerable and positive. In fact, Asra (1999) showed that the urban-rural food price differential during 1987-96 was 13-16 per cent, and the components of change in simulated (food) poverty estimates supported the view that the intersectoral effect (migration from rural to urban areas) accounted for a significant part of the observed decline in food poverty. Thus, the implications for policy differ depending upon which urban and rural poverty lines (and incidences) are used. On this basis we recognize that the government needs to look closely at the issue of urban-rural poverty lines in its poverty estimation procedure, as the estimates will have significant policy implications (see suggestions given by Booth 1993).

*Table 5*: Simulation results of components of the change in poverty incidence (percentage of total poverty reduction), 1981-96

| | | Intrasectoral effects | | Intersectoral | Interaction |
|---|---|---|---|---|---|
| | | Urban | Rural | population shifts | effect |
| I. | Z urban = 110% * Z rural | | | | |
| | 1981-90 | 9.2 | 83.0 | 13.7 | -5.9 |
| | 1990-6 | 9.2 | 42.2 | 50.6 | -2.0 |
| | | | | | |
| II. | Z rural = 0.95 * Z urban | | | | |
| | 1981-90 | 11.5 | 79.5 | 13.4 | -4.5 |
| | 1990-6 | 20.9 | 68.4 | 12.6 | -2.0 |

*Source:* Author's calculations. The simulation is also conducted for FGT, $P_1$ and $P_2$ measures, but the results are not given here as they lead to more or less similar conclusions.

# Inequality

Five issues are particularly pertinent to our discussion of inequality in Indonesia

## 1. Expenditure inequality versus income inequality

BPS has provided not only estimates of expenditure inequality, but also estimates of income inequality. These are measured by the Gini coefficient for the period 1976-82 and appear in Table 6. Unfortunately, less attention has been paid to the income inequality estimates than to the expenditure inequality estimates.[27]

Three salient observations can be drawn from these estimates of income inequality. First, the trend in income inequality for the period 1976-82 for all areas in general is the same as the trend in expenditure inequality for roughly the same period (1976-81). Inequality increased during the two-year period 1976 to 1978, then declined during the four years from 1978 to 1982. Second, as expected, in all areas the estimates of Gini coefficients using income are higher than estimates of Gini coefficients using expenditure. Third, unlike the expenditure data, the income data show that urban areas have lower inequality than rural areas.

*Table 6:* Trends in the inequality of income measured by the Gini coefficient index, 1976-82

| Area | 1976 | 1977 | 1978 | 1982 |
|------|------|------|------|------|
| Total | 0.47 (0.49) | 0.50 (0.52)+ | 0.47 (0.50)- | 0.44 (0.45)- |
| Urban | 0.42 (0.43) | 0.44 (0.44)+ | 0.41 (0.44)- | 0.38 (0.39)- |
| Rural | 0.46 (0.47) | 0.50 (0.51)+ | 0.48 (0.50)- | 0.44 (0.43)- |

*Sources:* BPS (1979, 1983, 1987a) using households by per capita income.
*Notes:*
1+ = higher than in the previous year.
2 - = lower than in the previous year.
3 Figures within parentheses are based on distribution of households by household income. BPS (1987a) also presents data for 1984. However, it warns clearly that the 1984 figures may not be directly comparable with the figures for the previous years.
4 The income shares of the bottom 40 per cent of the population are not presented as they lead to similar conclusions.

## 2. Current versus constant price inequality

Most studies that investigate inequality levels observe trends in income, or the expenditure share of the bottom 40 per cent of the population, and the Gini coefficient, on the basis of current prices. The current prices may not be the same as the constant prices used for trend in the income share. These studies ignore that there may be differences in the consumption baskets of various groups of the population and thus price changes may also be differed. Hence, the improvement in income distribution as shown by the increase income share of the poorest 40 per cent of the population, and the lower of the Gini coefficient at current prices, may not reflect actual trends in economic equality.[28]

## 3. Aggregate measure of inequality

The conventional overall measures of expenditure or income distribution (like the Gini coefficient or decile-based measures) may fail to capture changes in distribution within

the economy, for both upward and downward movement. Indeed, the aggregate inequality measures, such as the Gini coefficient, are 'too' aggregate to accurately examine the inequality of either income or consumption. Studies investigating distribution have been overwhelmed by using a (single) aggregate index when use of disaggregate data would have been more appropriate. The obvious question here is how can the distribution of income or expenditure of at least 40 million households in Indonesia be measured accurately by a single index? We need more than an aggregate measure to estimate inequality with some degree of accuracy. We need to use the 'disaggregate' data.[29]

## 4. Increase relative inequality versus absolute improvement

Over a specified period, a decline in the expenditure share of the bottom 40 per cent of the population may occur at the same time as an increase in the average expenditure of this same segment of the population. In fact, inequality may increase when the (mean) expenditure or income of high expenditure/income classes grows at higher rates than the rates of the lower expenditure/income classes. Let us consider two ways to interpret this phenomenon.

First, such an increase in inequality may not pose serious problems, because the lower classes will also experience improvement in their average standard of living (see, for instance, Ahluwalia 1996). Increases in relative inequality may also occur at the same times as upward mobility, which is positive.[30] An increase in inequality, as shown by the traditional inequality measures, may not be a problem. It may simply reflect a movement of people from low- to high-income groups or sectors if no one is made worse off, total income is allowed to increase, and some of the poor become better off (Knight 1976).

However, one could argue that these different rates of increase in mean (real) consumption may be a real cause for concern. This is because the lower classes see neither the overall changed in inequality (as measured by Gini coefficient, for instance) nor the absolute increase in their mean (real) expenditure or income. They compare their own position relative to the so-called 'reference group' or higher expenditure classes. Once they find that the gap is increasing, their feelings of discontent strengthen and they will start questioning the distributional impact of the development.

## 5. Concern over constant or small change in relative inequality

The Gini coefficient and expenditure data by decile group may suggest that there has been little change in relative inequality. Thus, official assessments are that economic growth in Indonesia has been following the right path in the sense that it has not been accompanied by increasing inequality. It is argued in this light that the inequality issue is not a concern, However, the same data could also be interpreted differently, that the gap remains more or less the same is the real cause of social discontent, as society has been expecting a lowering gap alongside the nation's economic growth. In other words, members of society have felt a sense of not making progress when it ought to have been possible.[31] In contrast to the view expressed by Fields (1980: 28-9), the relative position of those left behind in the development process may be more important when judged from the perspective of inequality.

## CONCLUDING REMARKS

Assuming that the SUSENAS data are reliable and representative, during the two decades from 1976 to 1996 Indonesia experienced a significant increase in real average consumption, a consistent decline in poverty incidence and a relatively insignificant change in inequality of consumption. Reduction of rural poverty has contributed significantly to the overall poverty decline and economic growth has been the most significant component of poverty reduction.

Shifts in the labour force and improved employment opportunities in the urban sector have played a greater role in reducing aggregate poverty as shown by the results of decomposition simulation (which confirm the findings of Ravallion and Huppi 1991). Although the poverty level has undoubtedly declined over time, the official poverty lines might have been too low, leading to an underestimation of poverty incidence and an overestimation of its rate of decline.

On the issue of inequality, it is appropriate to re-emphasize here the pressing need to produce appropriate price indices for different groups over time and space at a provincial level, to enable better evaluation of the distributional impact of development. Examining the distribution of the results of the economic development requires more disaggregate data than aggregate data. Overall assessment of the impact of growth on distribution – of income and of consumption – should be complemented by examining the relative position of those who are left behind in the development process.

The recent currency crisis in East Asia (in addition to economic stagnation in Japan and Korea's financial crisis) has certainly hit Indonesia, with inevitable impact on the poor. In earlier years, economic growth in Indonesia has had a significant impact on poverty alleviation. So with growth halted or slowed considerably by the crisis, poverty is likely to worsen. During 1997, inflation overall rose to 11 per cent and for food the rate was about 18 per cent (the official figures). This was the first time during the 1980s and 1990s that these figures had hit double-digits (*Bulletin Ringkas*, December 1997). Noticeable price increases began in October 1997. Exports will decelerate and formal sector employment will also be significantly affected, while for those in informal employment the crisis will translate into lower wages and income.

It is safe to say that as a result of the Asian crisis, at least 20 million people in Indonesia are expected to become jobless in a real sense, and there will be crowding in employment in the informal sector, including the agricultural sector. Reduction in aggregate demand, due mostly to decline in real wages, will likely induce a lower level of consumption by wage earners in both formal and informal sectors of the economy. All of these outcomes will undoubtedly lead to a much higher poverty incidence, with probably at least 25 per cent of the population in 1998 (or about 50 million people) recognized as poor.[32] Given the positive achievements in reducing poverty and inducing more economic equality in Indonesian society over most of the last quarter of the twentieth century, there will be lessons from this earlier period to inform policy as it aims to return to economic growth, poverty alleviation and greater equality in the wake of the crisis. The task ahead is surely a challenge, where both international precedents and sensitive policy planning may make a visible, lasting difference to the economic well-being of all Indonesians.

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ACKNOWLEDGEMENTS

NOTES

[1] This figure was prepared by the Biro Pusat Statistik (BPS, the Central Bureau of Statistics) and was later published in the BPS 1992 publication, *Kemiskinan dan Pemerataan Pendapatan di Indonesia*, 1976-1990.

[2] Indikator Pendapatan: *Jumlah dan Persentase Penduduk Miskin di Indonesia 1976-1981.*

[3] For the first time, eight channels for achieving equity were identified (*see The Third Five-Year Development Plan 1979-1984, Summary,* p. 4). Since then equity aspects of development, in particular in the distribution of development efforts through the various regions, distribution of access to business opportunities and distribution of access to education and health services, have been paid more attention.

[4] Regression analysis has supported the view that growth is negatively correlated with poverty incidence (Huppi and Ravallion 1991; Asra 1989a, 1995).

[5] The computation was based on data provided by the SUSENAS (National Socio-economic Survey) in the form of population distribution by monthly per capita expenditure with corresponding monthly per capita food expenditure and per capita calorie consumption per day. For each of the monthly per capita expenditure classes (in most cases eleven classes), the average price of a calorie was computed by dividing monthly per capita food expenditure by daily per capita calorie intake. In addition, for all per capita expenditure classes, assuming that all rupiah acquired are spent to satisfy calorie requirements, the total expenditure in calorie terms (TEC), or potential level of calorie, was computed by dividing total expenditure by average calorie price. Finally, by using the TECs and applying the recommended daily dietary allowance (RDA) of 2,100 calories, the total expenditure needed to satisfy this RDA, which is the food poverty line, is obtained by interpolation (see Asra and Virola 1992).

[6] This is done by multiplying each of the quantities of the reference food bundle by the required-to-actual calorie ratio, i.e. 2,100/actual calories of the food bundle. The criteria used for selecting the commodities in the food bundle are the calories consumed, the number of households consuming the commodity, and other factors such as the importance of the commodity and the representativeness of each food group (BPS 1994: 5). The quantities consumed and the prices of those fifty-two items of course differed between urban and rural areas.

[7] In 1996, a new set of food commodities was derived from the results of the 1996 SUSENAS to consider a possible shift in consumption pattern (BPS 1997b: 1). However, the resulting fifty-two food items (Table 3 of BPS 1997b) are very similar to the ones used in 1993.

[8] Moreover, the data used for determining the non-food commodities were based on the 1993 SUSENAS calculations and a special survey called *Survei Paket Komoditi Kebutuhan Dasar (Survey of the Basic Needs Commodity Basket)* conducted in ten provinces and covering 800 households. The criteria used for selecting the commodities in the non-food bundle are, among others, the expenditure share in each subgroup of non-food items and the number of households consuming the commodity (BPS 1994: 9).

[9] The classes with monthly per capita expenditure in the RP15,000-19,999 band and Rp20,000-29,000 band in rural and urban areas, respectively. In 1996 the non-food component was re-estimated to take into account the change in the consumption pattern by undertaking a similar survey, but at a larger scale in twenty-seven provinces covering about 5,000 households. Correspondingly, the 'poor' households from where the non-food allowance was calculated changed into the Rp25,000-35,000 band and Rp35,000-50,000 bands.

[10] Although the difference in the point estimates of poverty incidence during any two successive year points has been shown to differ significantly from zero, it is important to see whether their confidence intervals overlap. Thus, to see whether there was a 'statistically true' declining trend in poverty incidence during the period 1981-96, the 95 per cent confidence interval of those poverty incidence figures should be estimated. The estimates indicate that even the estimated confidence intervals of poverty incidences during any two periods during 1981-96 did not overlap at all, supporting the view that there has been a significant decline in the poverty level in Indonesia over the period 1976-96. BPS (1994, 1995) also provides the FGT, $P_1$ and $P_2$ measures over the 1987-96 period which also indicate a reduction in the poverty level (see Asra 1999).

[11] The decline occurred regardless of the poverty lines that were used for assessment, and the poverty incidence is sensitive to the choice of poverty line. For instance, for 1981, using poverty lines about 10 per cent above or below the official ones, the poverty incidence in urban and rural areas would have changed by 6 percentage points higher or lower than the official poverty incidence in the respective area. However, the sensitivity of poverty incidence to poverty line declined over time. A 10 per cent increase in the urban poverty line in 1996 led to less than a 4 percentage point increase in poverty incidence for that year.

[12] The former is the relative gains to the poor within specific sectors (in this case urban and rural), while the latter is the contribution of changes in the distribution of the population across those sectors (for the formula used, see Ravallion and Huppi 1991). The second effect is expected to be small given the insignificant shifts in the population from rural to urban areas.

[13] While in the former period the contribution of poverty reduction in rural areas was higher than that of urban areas, in the latter the comparison depends on whether decomposition uses the old 1990 poverty lines or the new 1990 poverty lines.

[14] Ravallion (1992) indicated that migration of someone just above the poverty line in the rural sector, to the urban sector, with an increase in the standard of living less than the difference in poverty lines across sectors, will not necessarily lead to an increase in the aggregate measure of poverty across the sectors as the migrant will now be considered poor in the urban sector.

[15] The decomposition formulae used here are those used by Ravallion and Huppi (1991). The estimates of poverty measures were derived using current price consumption distributions and two possible Lorentz curve specifications (general quadratic and beta Lorentz curves).

[16]  This positive contribution of higher consumption decreases with alpha (the sensitivity parameter: the larger the alpha, the greater the weight given by the index to the severity of poverty), while the positive contribution of greater equity (change in consumption distribution) increases with alpha.

[17]  The fact that the absolute value of growth elasticity increases as alpha rises, reflects that economic growth has benefited the 'ultra' poor more than the 'moderate' poor, assuming there was no change in the consumption distribution. The fact that the depth of poverty in urban Indonesia, as measured by the poverty gap index, is more responsive to growth than is the poverty incidence, confirms the findings of Ravallion and Chen (1997).

[18]  The estimates of the elasticity of poverty with respect to the distributionally neutral growth for these three FGT measures were higher in rural areas than in urban areas, indicating that in rural areas poverty is more elastic to growth. For the same rate of increase in mean per capita consumption, poverty decreases faster in rural than in urban areas. As in urban areas, the absolute value of the growth elasticity increases as alpha rises, reflecting that economic growth in rural areas, holding the consumption distribution constant, has benefited the 'ultra' poor more than the 'moderate' poor.

[19]  It is interesting to note that, as mentioned earlier in this article, August 1978 is a turning point in Indonesian development policy, at which concern to create a more even distribution began to intensify.

[20]  That there has been a drop in the poverty level in Indonesia in the past two decades has been accepted widely (see, for example, White 1996). However, White doubts that the poverty decline in Indonesia has declined at the rate indicated by the official figures and holds that poverty and inequality measurements are politically oriented. A twin suggestion put forward to give more accurate assessment involves making the poverty measure dynamic: allow for inevitable change in society's needs over time and ensure that the poverty measure reflects a decent standard of living. In fact, refining the non-food component in the 1993 (and 1996) official poverty lines was an attempt to reflect more closely the people's basic social needs. Thus, in essence, the BPS has implicitly adopted this view of the dynamics of poverty, or at least to some extent. However, recognizing the dynamism in this way leads us to another basic difficulty in measuring poverty over time, since changing the basket of items for each poverty line automatically lessens the comparability of these poverty lines (and thus the incidence of poverty that they reflect).

[21]  The author is grateful to Dr. I.P. David of the Asian Development Bank for this argument.

[22]  For the Rp20,000-30,000 band in urban areas it was about 36 per cent and for the Rp15,000-20,000 band in rural areas it was around 30 per cent.

[23]  This appears to have been realized implicitly by the BPS, as shown by the increasing share of the non-food component in its poverty lines (except in 1987), that reached about 22 per cent and 15 per cent for urban and rural areas respectively in 1996. The use of a higher non-food share or more non-food items would, of course, inflate the poverty lines and lead to assessment indicating a higher incidence of poverty. This

would render achievements in poverty reduction less impressive than those shown in the official figures.

[24]  Indeed, the old methodology used in Indonesia to derive the poverty lines in heavily dependent upon 'price of calorie', and inherently (and unduly) produces a much higher poverty line for urban areas than for rural areas.

[25]  For 1990, Bidani and Ravallion (1992) indicate the reverse, regardless of the poverty line or measure that is used. This issue is very important and deserves more attention, particularly since different results may, of course, lead to different policy implications.

[26]  This is assuming that the urban poverty line is about 10 per cent higher than the official rural poverty line (or that the rural poverty line is 10 per cent lower than the official urban poverty line).  A 10 per cent difference has also been used by Ravallion and Huppi (1991) and is considered, for valid reasons, to reflect more closely the urban-rural price differential. I am now computing the actual price differentials for these periods and expect to publish these findings soon.

[27]  However, unlike expenditure inequality where distribution of individuals by per capita expenditure is used in the calculation, these estimates of income inequality are computed using distribution of households per capita income. Thus, strictly speaking the two estimates of inequality are not comparable. The differences between them are due not only to difference in the type of data used (expenditure or income) but also to difference in the way these estimates were calculated.

[28]  Mathematically, the Gini coefficient will, if the consumer price index increase or decreases monotonically with expenditure, cause the current price distribution for a later period to show greater or lesser inequality than the corresponding constant price distribution (Iyengar and Bhattacharyay 1965). For Indonesia's experience, see Asra (1989b, 1992).

[29]  Indonesia's social accounting matrix, for instance, shows the distribution of income by various household groups (which is more useful for decision-making).

[30]  In fact, transfers of individuals into higher-income classes through rural to urban migrations will generate a more unequal distribution (as measured by the Gini coefficient) up to a certain point (see Robinson 1976; Robinson and Dervis 1977).

[31]  The author is grateful to Ms. Lisa Kulp of the Asian Development Bank for this argument.

[32]  For 1996, for instance, if the official poverty line was raised by 25 per cent, the poverty incidence would increase to about 21 per cent in urban areas and 27 per cent in rural areas. The most recent publication of BPS (BPS 1999) shows that estimates of the poverty incidence in Indonesia for 1996-8 are 11.34 per cent (1996), 24.23 per cent (December 1998) and 18.17 per cent (August 1999).

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