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## What Do We Really Know—or Don't Know—about Economic Inequality and Poverty in the Philippines?

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### Introduction

A number of themes have occupied the discussion on growth, income distribution, and poverty in the Philippines. First, the distribution of wealth and income is highly unequal vis-à-vis those in most East Asian countries, resembling closely those in Latin American countries (see, e.g., Hayami et al., 1990; Thorbecke, 1995). Second, recent episodes of economic growth have not benefited the poor, either absolutely or relatively. The quality of growth—as judged primarily from its poverty-alleviation impact—in the Philippines is inferior to that in most other Asian countries. Related to this is the rather high magnitude of poverty in the Philippines compared to other countries at similar stage of development.

Third, poverty in the Philippines is fast acquiring an “urban face,” suggesting that poverty is no longer just a rural phenomenon. Fourth, high income inequality mirrors the large disparity in living standards between regions or areas of the country (e.g., Metro Manila and neighboring regions vs. other regions of the country); the elimination of this disparity needs to be the central focus of poverty-reduction efforts. Fifth, the poor lose from trade liberalization and

globalization, implying that efficiency (i.e., growth) may come at the expense of local jobs and workers' well-being. Sixth, conventional prescriptions to poverty alleviation, such as giving primacy to the promotion of efficiency-led growth, would not work in the Philippines and thus have to be replaced by "new" ones. One popular call echoing in the halls of Congress and in the NGO community, for example, is the creation of special agencies and programs that will cater primarily to the needs of the poor.

Our aim in this paper is to reexamine these themes in light of measurement theory and practice in household-welfare comparison, available data, and lessons from recent development experience. We show that the bulk of these themes have no firm bases and that oft-cited income-distribution and poverty profiles are not robust to measurement practices and data. In the first section, we examine some measurement issues that have important bearing on what we know about income distribution and poverty in the Philippines. We then explore the sources of inequality, the proximate causes of poverty, and some policy issues relating to income distribution and poverty. We end the paper with conclusions learned from the reexamination and with remarks on policy challenges in the foreseeable future.

### Measurement Issues: How Should Inequality and Poverty Be Measured?

Partly reflecting what we know—wrongly or rightly—about inequality and poverty profiles in the Philippines are long-held measurement practices and data considerations. Some of these practices have not been well justified; comparability of the inequality and poverty profiles vis-à-vis the purpose of measurement has been questioned. Yet, it is these profiles that often inform policy discussions, including proposals for engendering "growth with equity," fostering "adjustment with a human face," and "empowering the poor." This section briefly discusses some measurement issues—choice of a broad indicator of well-being, choice of income scales for interhousehold comparison, construction of poverty standards, and procedure for summarizing household information on well-being into a single aggregate measure—that have important implication for inequality and poverty comparisons, as well as for policy design.<sup>1</sup>

### *What proxy indicator of well-being should be used to gauge inequality and poverty?*

If policy goals are in terms of well-being, or if what matters "at the end of the day" is well-being, then one has to find a broad proxy indicator of well-being since it is not in practice readily measurable. Total current income, usually defined for a year, is a popular choice in inequality and poverty studies. Current income may, however, overestimate or underestimate current well-being (hereafter loosely referred to also as living standards). This will be so even if current income is correctly measured for that year. If a person can borrow or use his savings, his level of living is not constrained by current income. Even in underdeveloped regions, households typically have some capability to buffer their welfare from temporary variations in income, such as by saving (money or goods), borrowing, or community-based risk-sharing. Current consumption would thus be a better indicator of welfare level than current income.<sup>2</sup> Indeed, using standard arguments in microeconomic theory, it can be claimed that since welfare level is determined by "life-cycle" or "permanent" income, and since current consumption is a good approximation of this income, current consumption can be justified as a better measure of not only current welfare level but also *long-term* average well-being.<sup>3</sup> This does not, of course, suggest that consumption does not vary over time. It does, and the change over the life cycle is sometimes large. This is especially true among the poor who do not have access to capital markets (or to interhousehold transfers) and whose current consumption is thus constrained by current, instead of life-cycle, income. But even in this case, current consumption is as good an approximation of life-cycle income as current income. In developing countries, with some opportunities for saving or borrowing, a consumption-based measure of living standards is bound to show less inequality than that based on income.

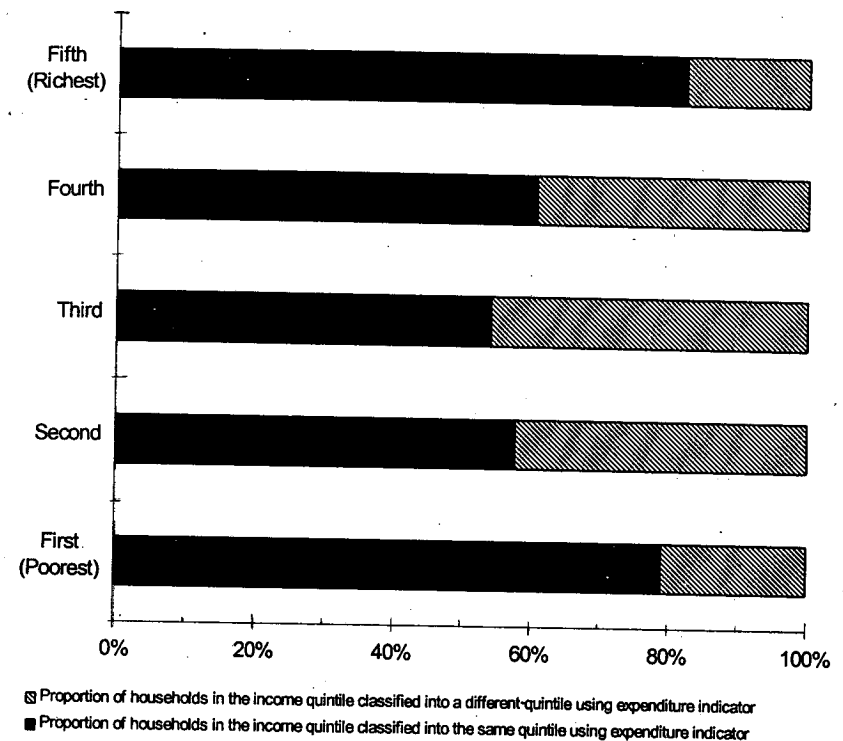
Also, from an operational viewpoint, the difficulty of acquiring accurate information proves to be more severe for current income than for current consumption (Ravallion and Chen, 1997; Lipton, 1997). Households may understate their incomes to avoid future problems with taxation agencies—a quite common practice among self-employed professionals. Worse, when kidnap-for-ransom activities by both big-time and small-time operators are rampant, certain household respondents may not provide full information on current incomes to survey enumerators, even if the latter introduce themselves

as government workers. The difficulty also extends to imputing "incomes" of households which consume part of their production, such as the case for the large majority of the farming population. Owing partly to cost considerations, the survey instrument used by statistical agencies to acquire information on households often employs shortcuts to estimating "net income" from own-production activities (e.g., lumping in just a few questions the respondent's estimate of total costs and gross revenues from entrepreneurial activities). The information acquired may not be as accurate as one could get from a detailed questionnaire on input costs and revenues for each major entrepreneurial activity. In short, measurement errors tend to be greater for income than for consumption.

The National Statistics Office's Family Income and Expenditures Survey (FIES), the main source of data for income distribution and poverty studies in the Philippines, captures a wide range of implicit expenditures such as use value of durable goods (including owner-occupied dwelling units), consumption of home-produced goods and services, and gifts and assistance or relief in goods and services received by the household from various sources. This makes these data valid even for welfare comparisons between urban and rural areas, as well as among socioeconomic groups. The data, however, exclude publicly provided goods and services (e.g., use value of public hospitals and infrastructure facilities) that also form part of household consumption (and hence welfare). A highly uneven distribution of these services across space and over time could have substantial influence on inequality profiles. On the other hand, imputing the use values of these services for different households of different circumstances is not a trivial exercise. Perhaps partly for this reason, the norm worldwide is the virtual exclusion of these goods and services in nationally representative household surveys on incomes and expenditures.

Thus, for reasons noted above, the relative position of households in the living-standard distribution could vary considerably for the two proxy indicators. This is the case for the Philippine data, as shown in Figure 1. Of the households tagged by the income indicator as the poorest 20 percent (first quintile) in the population, about 20 percent of them are not tagged as such by the consumption-expenditure indicator. The numbers are even more troublesome for the "middle class" (second to fourth quintiles): each income quintile has only about 60 percent of households identified by the corresponding consumption-expenditure quintile. At the topmost

**Figure 1.**  
**Matching of Households in Income and Expenditure Quintiles, 1994 FIES**

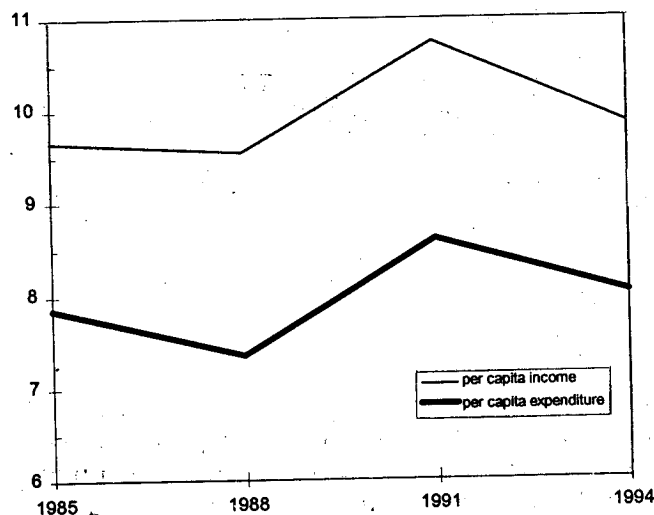


Source: Appendix Table 1.

part of the distribution, of the households tagged by the income measure as the richest 20 percent in the population, about 20 percent of them are not identified as such by the expenditure indicator. Clearly, the choice of proxy indicator of household welfare could influence significantly interhousehold welfare comparison. This could have important implication not only for distributional comparison but also for the design of policy intervention measures aimed at maximizing the reach of poverty programs to identified high-priority groups. For example, very limited funds for direct poverty alleviation necessitate targeting these funds to the most "needy" groups. But the set of households qualified as "needy" may well depend on whether income or expenditure is used as the gauge for neediness.

As would be also expected, the choice of well-being indicator influences the received picture about the *level* of inequality in the society. Figure 2 shows the picture that emerges from one popularly employed indicator: the quintile ratio, defined as the ratio of the income share of the top 20 percent of the population to that of the bottom 20 percent. The income-based ratios are consistently higher than the expenditure-based measures. Note, in particular, that the 1994 quintile ratio for current income indicates that the living standards of the richest 20 percent of the population was about 10 times that of the poorest 20 percent, while the comparable figure for the consumption-expenditure was just 8 times. The *pattern* during the 1985-1994 period is, however, similar. But, as shown below, this is not always the case for all inequality measures, as well as other inequality profiles (e.g., urban vs. rural areas).

**Figure 2.**  
**Quintile Ratios\***



\*Quintile ratio is the ratio of the income (expenditure) share of the top 20% of the population to that of the bottom 20%.

### Should inequality be measured for households or individuals?

The chosen indicator of living standards has to be adjusted for differences in household needs, as well as scale economies in

consumption. This adjustment is not possible in some cases: the available data may pertain to total for households, not individuals. In this case, any inference about relative household welfare is likely biased: the use of such indicator completely ignores the differential needs of households with different characteristics, as well as potential scale economies in producing and consuming household goods and services. In other (more typical) cases, the data are expressed in per capita terms. While this is an improvement, the use of such data still ignores scale economies, as well as differences in household needs with different characteristics (other than family size). It is likely that such data over-represent large households among the poor. Since poor countries tend to have disproportionately large households, the use of such data may overestimate poverty and exaggerate the extent of inequality in the distribution of living standards.

Conceptually, the use of properly constructed household equivalence scales takes care of the problem. An equivalence scale indicates at reference prices the cost differential for a household, due to demographic composition and other relevant household attributes, to reach the welfare level of the reference household. Viewed as a true-cost-of-living index, it represents in one summary measure the changing needs of a family, as well as any economies in consumption, as it expands and/or changes attributes. It has thus been a concept central to theoretical and empirical studies concerning poverty, income distribution, and social security payments in a welfare state.

Recent research shows that the choice of equivalence scales matter strongly for measurement results, including the ranking of periods, states, or population groups in terms of income distribution and poverty (Buhmann et al., 1988; Coulter et al., 1992; Johnson and Shipp, 1997). The unfortunate thing, however, is that there is no single, widely accepted approach to estimating equivalence scales.<sup>4</sup> Invariably, any particular scale incorporates cardinal assumptions about which there may not be general agreement. Thus, comparisons using the full range of plausible equivalence scales will be necessary so as to get unambiguous rankings of living-standard distributions (Coulter et al., 1992). Certain dominance conditions, as those suggested by Jenkins and Lambert (1993), may also be employed to establish the robustness of distributional rankings.

A simple form of the adjustment to be made on observed household income (expenditure) in order to take account of differences in family needs is:  $y^* = y/n^e$ , where  $y^*$  is the adjusted

welfare indicator,  $y$  is observed indicator,  $n$  is family size, and  $\epsilon$  is the scale elasticity of need. Notice that if  $\epsilon$  equals zero, then there is no adjustment for family size; the measure of welfare is household income (expenditure). Alternatively, if  $\epsilon$  equals one, then the measure of welfare is per capita income (expenditure). Note that this scale, while it accounts for family size, ignores differences in the needs of individual members of the household, which may vary according to their ages and other characteristics.

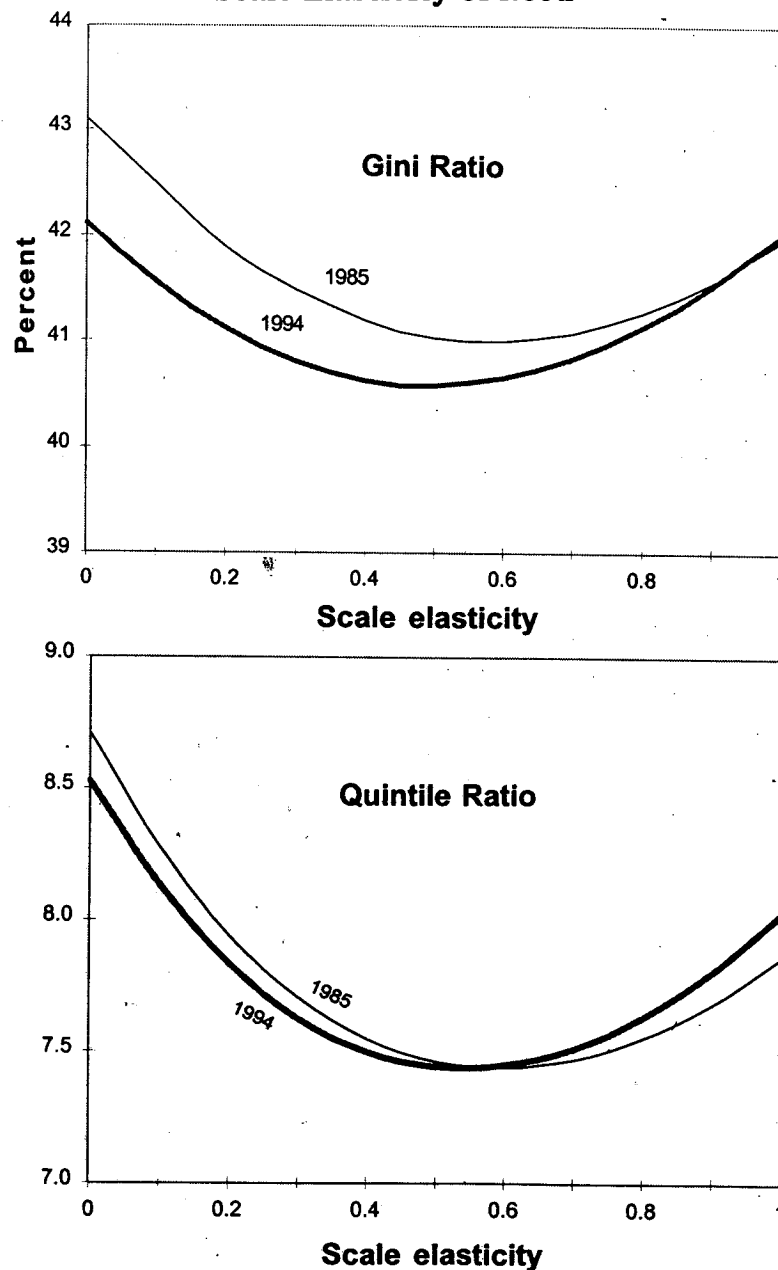
Scales of this form have an interesting effect on inequality comparison, as demonstrated in Figure 3. The two commonly employed indices, the Gini ratio and the quintile ratio, rank the 1985 and 1994 distributions differently, depending on the scale elasticity employed.<sup>5</sup> A scale elasticity equal to zero (i.e., using household expenditure as the unit for construction of welfare distribution) indicates a decrease in inequality between 1985 and 1994, while a scale elasticity equal to one (i.e., using per capita expenditure) indicates virtually no change in inequality. In the case of the quintile ratio, the use of alternative scales even reverses the ranking of the 1985 and 1994 distributions. Interestingly, both inequality indices have a U-shaped relationship with the scale elasticity.

What do we know about the magnitude of the scale elasticity of need in the Philippines? Using parameter estimates from simple Engel share equations, Balisacan (1992) obtained a scale elasticity for the Philippines of about 17-20 percent, depending on whether the household is located in an urban or rural area. These estimates are slightly lower than those typically reported for developed countries (Buhmann et al., 1988; de Vos and Zaidi, 1997), although somewhat comparable with those reported for some developing countries (Deaton et al., 1989).

#### ***What aggregation procedure should be employed in summarizing the distribution of living standards?***

Put differently, do all inequality measures popularly used in the literature tell the same story about distributional rankings? Not necessarily, as the foregoing discussion suggests. The implicit welfare functions and associated weighing schemes vary across the commonly employed inequality measures. As such, they vary in their sensitiveness to changes in the various parts of the distribution. The commonly employed Gini index, for example, is sensitive to changes in inequality around the median but not to simultaneous changes within the extreme

**Figure 3.**  
**Sensitivity of Gini and Quintile Ratios to**  
**Scale Elasticity of Need**



ranges of the distribution.<sup>6</sup> On the other hand, the coefficient of variation is responsive to changes in the upper end of the distribution, while the mean logarithmic deviation (also known as Theil L index) is responsive to the lower end. Hence, an increase in inequality arising from greater increases in the living standards of the very rich relative to the "middle class" does not raise the value of the Theil L index as much as that arising from greater decreases in the living standards of the poor relative to this middle class. In this case, the measures may not rank, say, two distributions the same way, thereby making distributional comparison possibly inconclusive. The ambiguity may be solved by imposing stronger assumptions about the welfare functions (Sen, 1997), or by applying certain dominance conditions for welfare comparison, as those suggested by Atkinson (1987) and Jenkins and Lambert (1993). For practical purposes, however, it may suffice to simply employ a variety of inequality measures to check for the robustness of distributional comparisons. Even if the level and percentage changes differ for these measures, if all the indices are increasing or decreasing, one can draw conclusions about changes in inequality between two periods, states, or population groups.

Table 1 shows three complementary inequality measures, each one differently sensitive to certain parts of the size distribution of income (expenditure). The three measures show similar patterns of the year-to-year changes in inequality during the 1985-1994 period. But inequality comparison between the beginning and final years of the period presents a problem. Both the Gini and the mean logarithmic deviation show a virtual absence of change in inequality, while the coefficient of variation indicates a slight (4 percent) decrease. Thus, without further specifying the relative importance that society attaches to various parts of the distributions, the ranking of the two years will remain ambiguous.

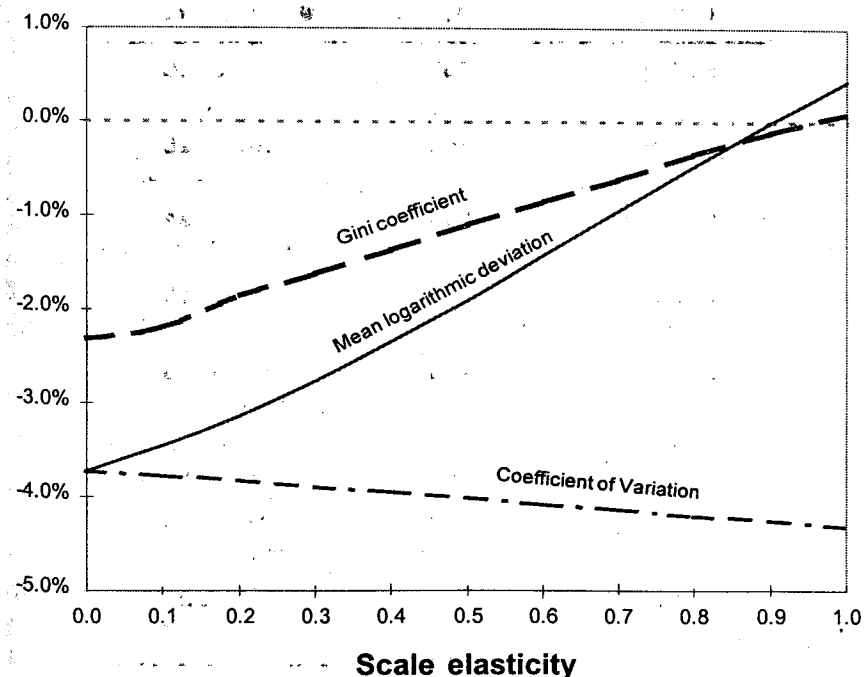
**Table 1. Inequality Indices**

Year	Gini	Coefficient of variation	Mean logarithmic deviation
1985	42.0	1.25	0.292
1988	40.7	1.09	0.273
1991	43.7	1.41	0.319
1994	42.0	1.19	0.294

Note: All figures pertain to distributions of real per-capita consumption-expenditure.

An even greater source of problem is that the pattern observed in Table 1 applies only for a certain value of the scale-elasticity parameter  $\epsilon$  (in this case, the value is one). As shown in Figure 4, other markedly different, though quite plausible, elasticity values suggest a different story. If significant scale economies are assumed (say,  $\epsilon = 0.4$ ), then all the above inequality measures indicate a considerable reduction in inequality from 1985 to 1994. If the scale elasticity is zero (i.e., household incomes, unadjusted for family size, are chosen as indicator for the construction of inequality profile), then the reduction would have been about 2 percentage points for the Gini index and about 4 percentage points for the other two measures. As noted above, evidence for the Philippines, albeit limited, points to a scale elasticity way below one, suggesting a slight decrease in inequality, regardless of the inequality measure used. Interestingly, the coefficient of variation is not quite sensitive to scale elasticity.

**Figure 4.**  
**Impact of Scale Elasticity on Measured Change in Consumption Inequality, 1985-1994**



### **How should poverty standards be set? Is the current practice appropriate for monitoring changes in absolute poverty?**

The official (government's) poverty statistics shows that poverty incidence is much higher in the Philippines than either in other Asian countries with comparable level of development or in relatively backward Asian neighbors (Table 2). Poverty is, for example, about thrice higher in the Philippines than in Indonesia, even though the former is either ahead of (or at par with) the latter in terms of almost all other aspects of human development.<sup>7</sup> These estimates also suggest a country that is as poor as Bangladesh, even though Bangladesh has an average income per head of only one-fifth that of the Philippines, and has levels of human development that are considerably lower than those for the Philippines.<sup>8</sup>

**Table 2. Poverty Estimates:  
Philippines vs. Other Asian Countries**

Country	GNP Per Capita 1994, US\$	Poverty Incidence*
Philippines	950	About <b>40%</b> (1994)
Indonesia	880	About <b>15%</b> (1990)
Sri Lanka	640	About <b>27%</b> (early 1990s)
China	530	About <b>15%</b> (1990-1994)
Pakistan	430	About <b>25%</b> (early 1990s)
India	320	About <b>34%</b> (early 1990s)
Bangladesh	220	About <b>40%</b> (early 1990s)
Viet Nam	200	About <b>20%</b> (1993)

\*Country (official) estimates.

Of course, given the country differences in data quality and poverty estimation, the *level* of poverty in any given year is not as critical as the *changes* in poverty during a specified period. However, within a country, the quality of poverty data has a direct bearing on policy choices vis-à-vis poverty alleviation. The data may, for example, influence the level and/or composition of public spending for anti-poverty programs versus that for long-term overall economic growth. The information may also have adverse implication for direct foreign investment. If poverty is reported to be higher than it actually is (i.e., in relation to what this would have been if, say, an "international" practice is followed), foreign investors of nonfood-consumer goods may be dissuaded from locating in the Philippine market and move instead to other markets that are perceived to be supported by populations with greater purchasing power.<sup>9</sup>

International practice varies in terms of the information used in setting the poverty norm or standard. One convenient method is to set this norm as a constant proportion of the mean consumption (or income) for each population subgroup or date. However, this method does not provide much relevance for anti-poverty policies, since it ignores welfare considerations in terms of absolute levels of living.

When the aim is to inform policy, one desirable feature of a poverty line is that it should not depend on the subgroup to which the person with that standard of living belongs (Ravallion, 1994). Put differently, poverty lines constructed for various subgroups must be fixed in terms of a given living standard. Thus, two persons deemed to have exactly the same standard of living in all relevant aspects but located in different regions would have to be treated as either both poor or both nonpoor. The poverty lines are then said to be consistent; they imply the same command over basic consumption needs.

The appeal of this type of consistency may be at odds with another desirable feature of a poverty line: the idea that the chosen basic-needs bundle should reflect local perceptions of what constitutes poverty in each subgroup. Cast differently, the poverty line needs to conform with the living conditions and amenities which are customary in the society to which the households belong (often referred to as participation standard). If one is interested in a purely descriptive assessment of poverty by various subgroups of the population, this feature might be useful. However, an insistence on this feature in the construction of poverty line may result in either (i) absurd conclusions about spatial poverty profiles, or

(ii) inappropriate policy choices vis-à-vis poverty reduction, or both.

The official methodology for estimating the poverty incidence starts with the construction of representative food menus for urban and rural areas of each region of the country. The menus consider local consumption patterns and satisfy a minimum nutritional requirement of 2,000 kilocalories per person per day.<sup>10</sup> Evaluated at local prices, the menus form the *food thresholds*. The expenditure pattern of households within the ten percentile of the food threshold in the income distribution is then utilized to determine the average food expenditure share which is used to derive the poverty line. The household's per capita *income* is compared with the poverty line specific to a region or area to determine whether the household is poor or not. Finally, the magnitude of national poverty is obtained by adding the number of poor families in each region and expressing the total as a percent of the total number of families.<sup>11</sup>

By construction, the official methodology tends to yield poverty lines that are not consistent, that is, the standard of living implied by the poverty lines varies for each of the regions as well as over time. It is well known that as household incomes rise, consumption of cheap sources of calories tends to decline as consumers shift to higher quality and more varied—but not necessarily more nutritious—food sources. Put differently, the income elasticity of demand for calories is typically much lower than that for food as a group (Bouis and Haddad, 1992; Subramanian and Deaton, 1996). The shift is invariably associated with improvement in standard of living. Hence, since the official methodology starts with the local consumption pattern in the construction of food threshold for each of the regions, as well as areas within a region, of the country, estimates of food thresholds tend to be higher for the economically more progressive regions (areas) than for the economically backward regions (areas). In short, the food poverty lines are not comparable since they imply different levels of living standards.

A related source of inconsistency is in the estimation of the nonfood component of the poverty line. The average food share used to derive the total poverty line is expected to be lower in progressive areas or regions of the country than in backward regions or areas. Yet, it is also well known that food share correlates well, albeit not perfectly, with standard of living. That is, for two households with different food shares, the one with the higher food share tends to have lower standard of living, regardless of their demographic differences (Deaton and

Muellbauer, 1980). Thus, by construction, the nonfood component of the poverty lines in economically progressive regions *also* implies higher level of living than that for the economically backward regions. This source of inconsistency amplifies that coming from the construction of food thresholds, which is based on separate surveys.

The inconsistency may also affect intertemporal comparison of living standards. Increases in real household incomes over time tend to reduce food shares in household expenditures since the income elasticity of food is typically less than unity. The poverty line then shifts upward over time, that is, the poverty line is sensitive to overall mean expenditure (income). This suggests that what is partly captured by the poverty assessment is *relative* poverty. Put differently, poverty is intimately identified with the distribution of living standards. Poverty assessment in developed countries is commonly anchored on such notion of poverty. However, for developing countries where the immediate policy concern is the reduction of *absolute* poverty, this concept is not quite useful. A relative measure of poverty may underestimate the progress being made in the reduction of absolute poverty.

From a policy viewpoint, the two concepts of poverty have different implications for the choice of poverty-reduction strategies. Redistribution programs (e.g., social welfare payments) characterize a development policy focused on reducing relative poverty. Economic growth alone may not help much in reducing this type of poverty. On the other hand, absolute poverty reduction may require no less than overall expansion of employment opportunities sustained over a long period of time. In this case, development policy anchored on poverty reduction has to focus on creating a favorable environment for sustained employment growth (e.g., investment in infrastructure and human capital).

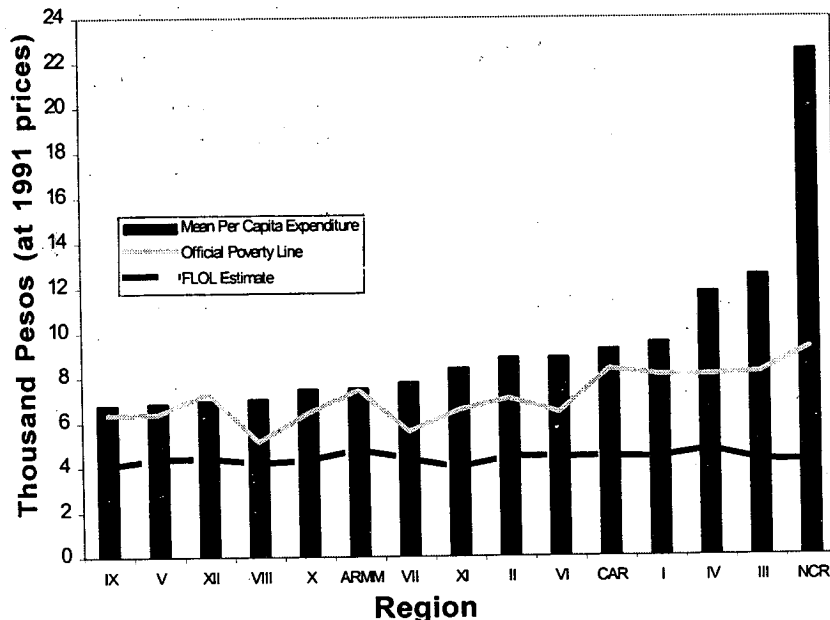
In another paper (Balisacan, 1997), we have constructed a set of regional poverty lines which embed the consistency feature for a poverty norm, i.e., the poverty lines are fixed for various subpopulation groups and periods in terms of the level of living they imply.<sup>12</sup> The construction requires (i) obtaining a *reference* food bundle satisfying the minimum nutritional requirement of 2,000 kilocalories per person per day, (ii) adjusting this bundle for regional cost-of-living differences, and (iii) estimating the nonfood component from the consumption patterns of households whose total expenditures (incomes) are just adequate for meeting the food threshold (though not actually preferring to allocate all these incomes to food). The reference food bundle pertains to the



national average food consumption of a population subgroup meeting the minimum nutritional norm. The determination of the nonfood component of the poverty line involves estimating the parameters of an “almost ideal” demand function relating food shares with measures of command over basic consumption needs, household demographic and socioeconomic characteristics, and spatial factors. For each region, the cost of nonfood basic needs implied by the food threshold and the regression estimate of food share is added to the food threshold to obtain the poverty line. We refer to this method of constructing poverty standards as fixed-level-of-living (FLOL) approach.

Figure 5 shows the FLOL estimates and the official estimates of 1991 poverty lines for the country’s 15 regions, including the National Capital Region (NCR) and the two autonomous regions of Cordillera (CAR) and Muslim Mindanao (ARMM). The regions are arranged in ascending order of mean per capita expenditure in 1991. Two major points are evident in the figure. First, the FLOL estimates are consistently well below the official figures, though the difference

**Figure 5.**  
**Poverty Line Estimate vs. Per Capita Expenditure**



varies considerably from as low as 19 percent for Region 8 to as high as 54 percent for NCR. Second, the difference between the two estimates tends to rise with regional mean per capita, as expected. Indeed, our estimates show little variation across regions. What might appear surprising is the relatively low poverty line estimated for NCR even though this region is not a major producer of agricultural commodities. Food prices are, however, lower in Manila than in some of the other regions (e.g., ARMM, CAR, and Region 4). Since the country is a net importer of food, and since the concentration of major ports and food-processing facilities is in NCR and neighboring regions, consumer prices are lower in Manila than in some regions. Moreover, owing to political-economy considerations, the national government pays much more attention to food price—their levels and movements—in NCR than in other regions of the country.

#### **What aggregation procedure should be employed in summarizing the information on the poor?**

In aggregating the information on the poor into a single measure of poverty, a common procedure is to simply count the proportionate number of the population deemed poor. The resulting *head-count index*, conventionally interpreted as a measure of the “incidence” of poverty, is what appears in official reports on poverty in the Philippines. This index, however, has shortcomings. It is insensitive to the depth of poverty: a poor person may become poorer but measured poverty will remain the same. Moreover, the index is insensitive to income transfers: an income transfer from a poor person to a less poor, one whose post-transfer income is (still) below the poverty line, does not change measured poverty. Its advantage is that it is easily understood and communicated.

Another familiar measure of aggregate poverty is *poverty gap* index, which is the aggregate income shortfall of the poor as a proportion of the poverty line and normalized by population size. This measure is sensitive to both the number of the poor and the “depth” of their poverty. Its advantage is that it gives an indication of the potential savings that can be made from targeting transfers to the poor (Ravallion, 1994). This is so since, with little manipulation of the formula, the index is simply a ratio of the minimum amount needed to eradicate poverty in a situation where there is complete information about the income shortfalls of the poor (i.e., perfect

targeting case), and that where everybody in the population, rich or poor, is given an income transfer equal to the poverty line (i.e., no targeting case). One objection to it, however, is that it is insensitive to a redistribution of income within the poor group owing to the equal weights attached to the various income shortfalls. This measure is hereafter referred to as "depth" index.

Sen (1976, 1997) contends that an aggregate poverty index must convincingly capture differences in the severity of poverty, i.e., the distribution of living standards among the poor. This concern is captured by the distribution-sensitive  $P_2$  index, a member of the additively decomposable class of poverty indices suggested by Foster, et al. (1984). The index, hereafter referred to as "severity" index, is calculated in the same way as the poverty gap except that the weights are simply the squared income shortfalls.<sup>13</sup> Measured poverty using this index decreases whenever a transfer of income takes place from a poor household to a poorer one, thereby overcoming the limitation of the poverty-gap index. Its drawback is that the numerical value of the index is not as intuitive as the head-count and poverty-gap indices. Nonetheless, the key point to remember is that a ranking of dates, socioeconomic groups, or policies in terms of the distribution-sensitive measure should reflect well their ranking in terms of the severity of poverty. It is not the precise number per se that makes the measure useful, but its ability to order distributions in a better way than the alternative measures.

All of the above poverty measures have the appealing property that they are additively decomposable in the following sense: the aggregate poverty level is simply a weighted average of the subgroup poverty levels, the weights being their population shares. This property proves to be extremely useful for practical policy considerations. For example, for a policy change that increases the income of group  $i$  and reduces those of group  $j$ , one can work out the impact of the change on each group's average poverty level, and then use the group's respective population shares to estimate the new aggregate poverty level.

Table 3 provides two sets of estimates of poverty for the 1980s and early 1990s. The first set, referred to as official estimates, reflects the Government's approach to estimating poverty. As noted above, the approach uses current household income as indicator of living standards, as well as poverty lines constructed from actual consumption patterns in each region or area of the country. The poverty lines embed different levels of living standards, tending to *systematically*

underestimate (overestimate) the reduction (increase) in absolute poverty in economically more progressive (backward) regions or sectors. The second set uses the official norm about nutritional calorie requirement (i.e., 2,000 kilocalories per person per day) but imposes the desirable consistency feature of a poverty norm by holding the poverty line fixed in real terms over time or across regions/areas of the country (i.e., follows the FLOL approach to constructing poverty standards, as discussed above). Both sets use household living-standard indicators adjusted for family size.

**Table 3. Poverty Estimates Based on Two Approaches (in percent)**

Year	Aspect of Poverty		
	Incidence	Depth	Severity
FLOL Approach*			
1985	32.7	9.4	3.8
1988	26.9	6.9	2.5
1991	26.6	7.1	2.7
1994	23.4	5.9	2.1
Official Approach†			
1985	49.2	17.0	7.9
1988	45.3	15.0	6.7
1991	45.2	15.4	7.0
1994	40.2	13.2	6.0

\* Based on fixed level-of-living poverty lines and per capita consumption-expenditure.

† Based on official poverty lines and current income.

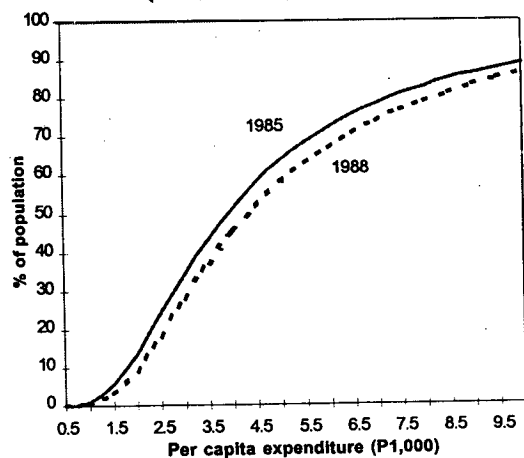
At least three points are apparent in Table 3. First, the FLOL poverty estimates are much lower than official estimates. The FLOL incidence estimates are also broadly comparable to those obtained by the World Bank (1996b) using an internationally comparable poverty line of one US dollar (at 1985 purchasing power parity) per capita per day. Second, while both FLOL and official estimates show considerable progress in poverty reduction during the period under study, the reduction indicated by the former appears to be more "impressive" than that by the latter, since the initial-year poverty level is much lower in the FLOL than in the official approach. Third, the FLOL estimates indicate that a good deal of the poverty reduction took place between 1985 and 1988 (a period of considerably high

consumption growth), while the official estimates show that this occurred from 1991 to 1994 (a period of low consumption growth).

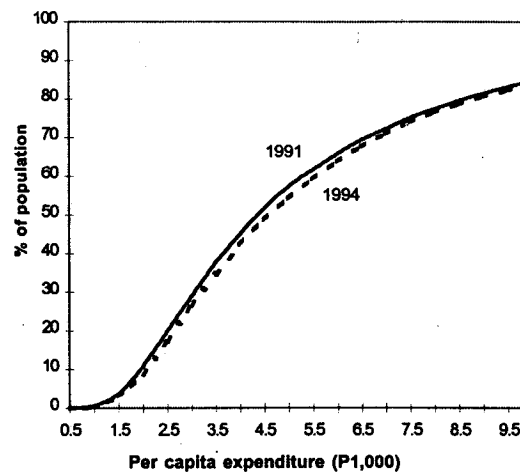
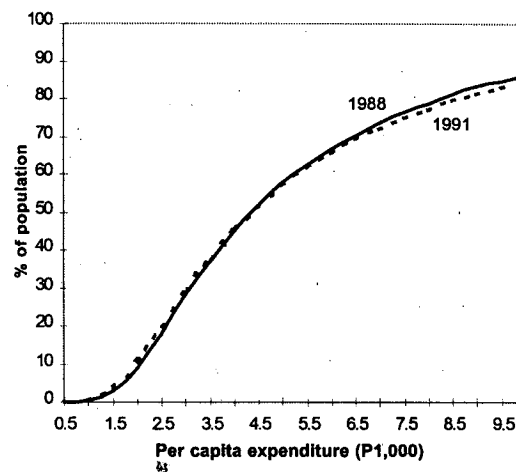
### **How robust are the measured changes in poverty?**

Clearly, the construction of a poverty norm greatly affects the profile of aggregate poverty. To check whether the intertemporal poverty pattern is robust to the choice of poverty lines and of poverty index, a first-order dominance "test" is applied.<sup>14</sup> Figure 6 compares pairs of cumulative distributions of per capita consumption; two non-intersecting cumulative distribution (CD) curves indicate that the change in poverty during the period is unambiguous. This is the case for 1985 and 1988 as well as for 1991 and 1994. In both periods, poverty fell unambiguously, regardless of the assumed (but plausible) poverty norm and the chosen poverty index. Notice that the vertical distance between the 1985 CD curve and the 1988 CD curve is wider for almost all levels of per capita expenditure than that between the 1991 CD curve and the 1994 CD curve, suggesting that the poverty reduction in 1985-1988 is greater than in 1991-1994. The possibility of disagreement on the direction of poverty change applies to 1988 and 1991 where the CD curves intersect. Indeed, both the FLOL and the official estimates indicate inconsistent ranking of 1988 and 1991 by the three poverty indices.

**Figure 6.**  
**Cumulative Distribution of Real Per Capita Consumption**  
**(at 1988 prices)**



**Figure 6. (Cont.)**



### Does scale elasticity also matter in poverty comparison?

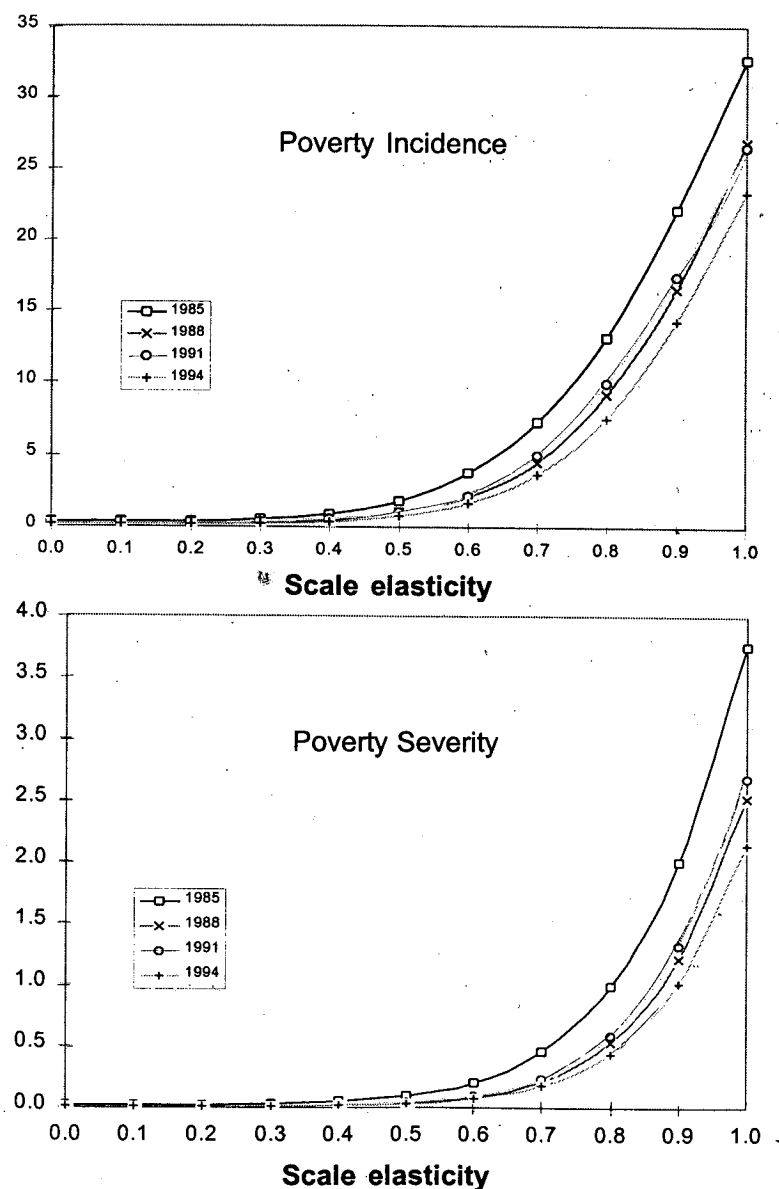
It matters a lot, at least for the Philippine poverty profiles. As demonstrated in Figure 7, the *level* of poverty in any given year increases with the scale elasticity of need, and it increases at an increasing rate. Thus, introducing even just modest scale economies in consumption could change dramatically poverty estimates, as expected. If this also changes the poverty ranking of the calendar years, then the conclusion made earlier about the changes in poverty may no longer hold. Fortunately, this is not the case: using other, albeit plausible, values of the scale parameter does not change the poverty ranking of the four years.

### International Comparison using "High Quality" Data: Is the Philippines an Exception to the "Asian Standards" of Inequality and Poverty Reduction?

The conceptual and measurement problems noted above are far more complex in international than in national comparisons. Approaches to welfare measurement are hardly uniform across countries; available data are also of varied quality, often of unacceptably low quality. Yet, it is not uncommon to find researchers making international comparison based on these data, often without cautioning their audience about data quality and any conclusion drawn from such comparison. Researchers commenting on income distribution in the Philippines have, too often, fallen into this trap.

A unique income distribution data set for international comparison is that put together by Klaus Deininger and Lyn Squire and employed in Deininger and Squire (1996, 1997). The data set, also containing time-series for some countries, is accessible at the website of the World Bank. For our purposes, we have extracted only that part of the data set which is of reasonably "high quality" and which pertains to Asian and Latin American countries. These "high quality" data satisfy the three criteria that Deininger and Squire require for international comparison of income distribution profiles: (i) they are based on nationally representative household surveys; (ii) they cover the entire population; and (iii) they encompass all types of income (consumption-expenditures), including nonwage

**Figure 7.**  
**Impact of Scale Elasticity on Poverty Estimate**



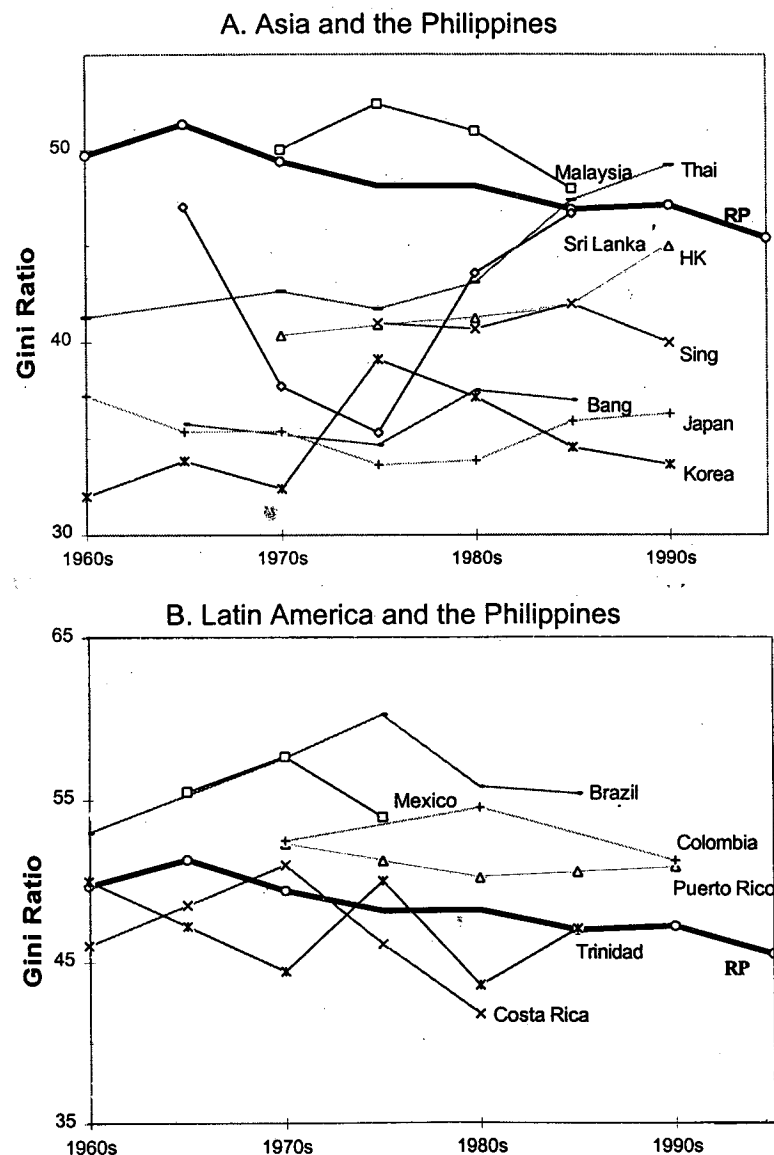
Note: All calculations are based on fixed-level-of-living poverty lines and consumption expenditure as indicator of living standard.

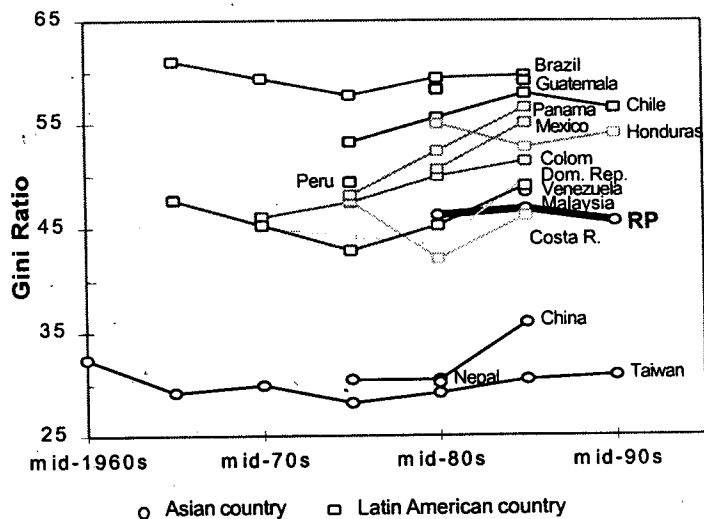
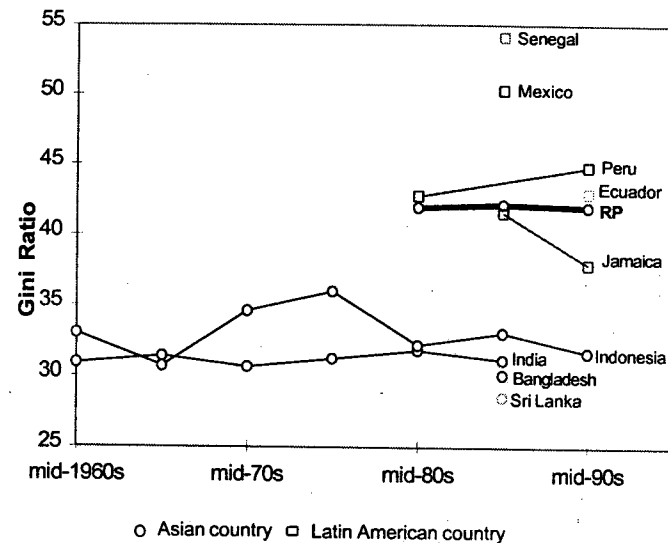
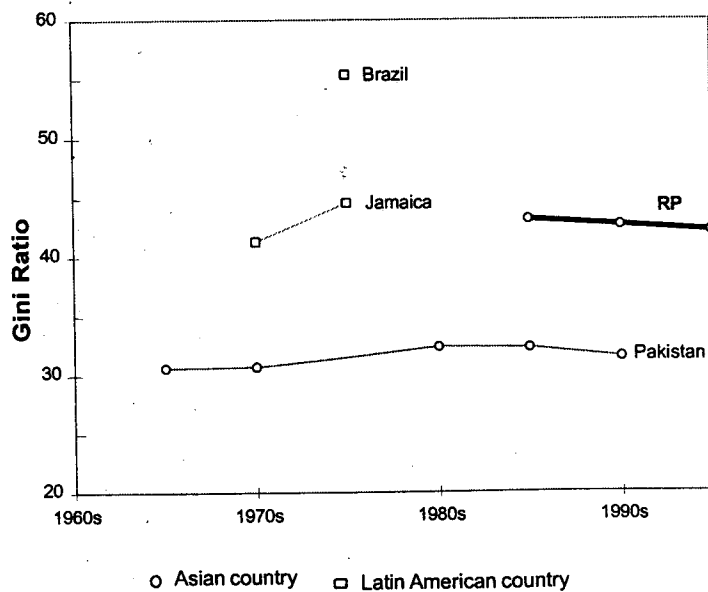
income and income from household production. Of the data that satisfy these criteria, 15 countries have data in household-income units, 16 in per-capita-income units, 4 in household-expenditure units, and 10 in per-capita-expenditure units. For the Philippine data, we have constructed income (expenditure) distribution indices corresponding to these four units of living standards. For the "international" comparison, we have chosen only the most popular inequality measure, the Gini ratio. Figures 8 to 11 depict the results of the comparative exercise.

At least two points stand out in this exercise. First, inequality in living standards is indeed higher in the Philippines than in most of the Asian countries represented in Figures 8 to 11. Only Malaysia and, more recently, Thailand have slightly higher inequality than the Philippines. Note, however, that while inequality appears to be rising in Thailand, China, and Hong Kong in the 1980s and 1990s, inequality in the Philippines tends to be either remaining constant or slightly falling, depending on the scale unit chosen for comparison. Second, the oft-heard remark—in reference to economic inequality—that the Philippines is a "Latin American country misplanted in East Asia" is somewhat inaccurate. Household living-standard indicators normalized by family size show that the distribution of living standards is more favorable for the Philippines than for a "typical" Latin American country.

How about the country's poverty alleviation performance in relation to international experience? Given the differences in poverty norms across countries, the relevant indicator for international comparison is the change in—not the level of—poverty during a particular period. Such indicator shows that the rate of poverty reduction in the Philippines during the second half of the 1980s and early 1990s was broadly comparable to those for China and Indonesia, but much slower than the average for developing Asian and Pacific countries (Table 4). This performance is remarkable considering that economic growth during this period was considerably lower in the Philippines (a measly 1.7 percent a year) than in virtually all developing East Asian and Pacific countries, especially China and Indonesia (nearly 7 percent a year).<sup>15</sup> Even more significant is the contrast of this period with the 1960s and 1970s when economic growth in the Philippines was respectable by international standards, but poverty during the period appeared not to have responded well to that growth (Ranis and Stewart, 1993; Balisacan, 1993; Bautista, 1997).

**Figure 8.**  
**Comparative Gini Ratios: Household Income**



**Figure 9.****Comparative Gini Ratios: Per Capita Income****Figure 11.****Comparative Gini Ratios: Per Capita Expenditure****Figure 10.****Comparative Gini Ratios: Household Expenditure****Table 4. Poverty Reduction, Philippines vs. Other Developing Countries**

Country	Period	Percentage-point reduction per year	Growth of GNP per capita, 1980-1994 (%/year)
Philippines	1985-1994	1.0	1.7
East Asia and the Pacific (excluding China)	1987-1993	1.6	6.9
China	1987-1994	0.7	7.8
Indonesia	1984-1996	0.9	6.0

Source: Balisacan (1998).

### Some Policy Issues: Should "Conventional" Prescriptions Be Abandoned in Favor of "New" Ones?

Recent public policy discussions have called attention to the need for crafting new strategies and programs aimed at effectively

alleviating poverty, reducing inequality, and promoting balanced urban-rural growth. Not a few, for example, claim that economic growth has not favored the poor and that "new models" of poverty alleviation have to be found. Others also put the blame for the country's allegedly poor performance in poverty alleviation, given the size of its growth, to the large disparities in average living standards across regions or between urban and rural areas.

### **How important is growth to poverty reduction?**

It is possible to determine the relative importance of growth and distributional change to poverty measures through some simple counterfactual experiments. One such experiment would be: what would have been the change in poverty during a given period if all consumption groups had shared equally in the growth that occurred? Another would be: how much further would poverty have increased (decreased) during the period if not for the growth (decline) that did occur? The latter experiment requires simulating the poverty measures that would have been observed at the end-year of the period if mean consumption did not change but inequality did as actually observed.

The two experiments correspond to components of a poverty change, i.e., the growth and the redistribution components of observed changes in the poverty measures employed in this paper.<sup>16</sup> Put differently, the growth component is the change in the poverty measure due to a change in mean consumption per capita while holding the consumption distribution constant at some reference level. The redistribution component, on the other hand, is simply the change in consumption distribution while keeping the mean consumption constant at some reference level.

The end-period poverty levels corresponding to the two scenarios—one with no change in inequality and the other, with no growth in mean consumption—are summarized in Table 5. Clearly, poverty measures would have been lower at the end of each period if the distribution of consumption did not change. A distribution-neutral growth would have, for example, led to a drop of 5.4 percentage points in poverty incidence from 1991 to 1994, instead of 3.2 percentage points. Similarly, during the "boom" years of 1985-1988 (when the average real consumption growth was 3.3 percent), the drop in poverty incidence would have been 8.5 percentage points,

instead of 5.8 percentage points. The other poverty indices show generally comparable qualitative results.

**Table 5. Simulated Poverty Measures**

	Aspect of Poverty		
	Incidence	Depth	Severity
<b>1985-1988</b>			
1985 (actual)	32.7	9.4	3.8
1988 (actual)	26.9	6.9	2.5
1988 (with no change in inequality)	24.2	6.1	2.3
1988 (with no growth in mean consumption)	36.2	10.4	4.2
<b>1988-1991</b>			
1988 (actual)	26.9	6.9	2.5
1991 (actual)	26.6	7.1	2.7
1991 (with no change in inequality)	24.9	6.1	2.2
1991 (with no growth in mean consumption)	28.6	7.9	3.0
<b>1991-1994</b>			
1991 (actual)	26.6	7.1	2.7
1994 (actual)	23.4	5.9	2.1
1994 (with no change in inequality)	21.2	5.2	1.8
1994 (with no growth in mean consumption)	28.4	7.7	3.0

Source: Balisacan (1997).

It is thus the changes in real mean consumption, rather than changes in its distribution, that have mainly contributed for the observed changes in poverty in recent years. This result runs counter to the common claim in policy dialogues that recent episodes of growth have largely not benefited the poor.

### **How important are interregional differences in mean living standards?**

Critics of development policy in the Philippines often point to the relatively large mean income differences between Metro Manila (the country's capital) and neighboring Southern and Central Luzon regions on the one hand, and the other regions of the country on the other, as a prime cause of the high income inequality and poverty in the Philippines (ILO, 1974; Lamberte, et al., 1993). The widely held view is that development policy has favored Luzon and discriminated against Visayas and (especially) Mindanao. Moreover, the poor performance of the Philippine

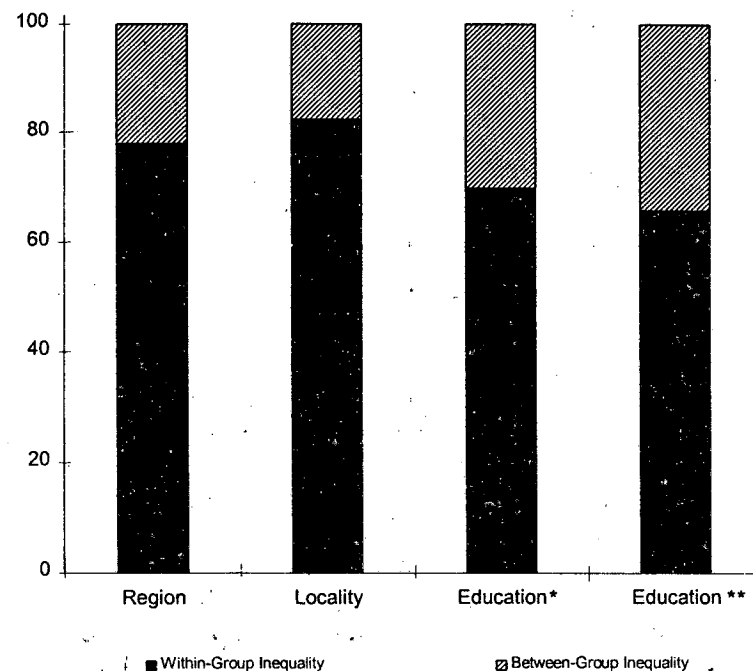
economy over the last three decades has been attributed partly to the relatively large variation in access to infrastructure and social services between the major urban centers and rural areas (e.g., Ranis and Stewart, 1993; Balisacan, 1993; Bautista and Lamberte, 1996). Spatial variation in certain summary measures of human development—particularly those incorporating literacy rate, mortality rate, and poverty incidence—is also evident (HDN and UNDP, 1997).

If indeed spatial income disparities are at the core of the poverty problem in the Philippines, then policy reforms aimed at reducing these disparities have to be central elements of the country's poverty reduction program. This may also promote efficiency goals: important dynamic externalities can arise from targeting by area or sector-specific characteristics (Bardhan, 1996; Ravallion and Jalan, 1996). Investment in physical infrastructure (like roads, communications, and irrigation) in backward areas, or in the rural sector in general, may improve the productivity of private investment, influence fertility through its effect on labor allocation and educational investment decisions, promote the development of intangible "social capital" (in the form of social networks, peer group effects, role models, etc.), and mitigate erosion in the quality of life in urban areas through its effect on rural-urban migration decisions.

Analysis of household income (expenditure) data shows that interregional inequality accounts for a small proportion of the national inequality (Figure 12).<sup>17</sup> While regional differences in mean expenditures are substantial, the contribution of between-region component to overall inequality is rather small (no more than 20 percent). This implies that removing between-region inequality by equalizing all regional mean incomes (but keeping within-region inequality constant by equi-proportionately changing the incomes of persons of that region) will reduce overall inequality by at most 20 percent. Conversely, removing within-region inequality by making everyone's income within a region equal to the mean for that region will reduce overall inequality by about 80 percent.

Inequality arising from large difference in mean income between urban and rural areas also accounts for no more than 20 percent. Again, this contradicts the widely accepted view that urban-rural disparity accounts for a very large part of the existing inequality in the Philippines. What Figure 12 suggests is that potentially larger gains in terms of reduction in overall inequality will be achieved if efforts are focused on reducing inequality within both urban and rural areas.

**Figure 12.**  
**Sources of National Inequality in Living Standards**  
**(Percent share in total)**



\* Education of household head.

\*\* Level of human capital in the household, measured as the ratio of total school-years to total potential school-years of household members.

Note: Living standard indicator is per capita consumption expenditure, except for decomposition by education of household head wherein household expenditure is used.

Clearly, disparity in incomes and human achievements *within* each of the regions or areas of the country is the major problem, not disparity among regions or between urban and rural areas. Within-region inequality arises from differences in possession of (or access to) both physical and human assets, including public goods. Differences in educational attainment alone raise the contribution of between-group inequality to a third of the observed national inequality. Unfortunately, while the distribution of human and



physical assets is within the influence of government policy, public investments have fallen short of creating a highly favorable environment for asset formation, especially among the poor.

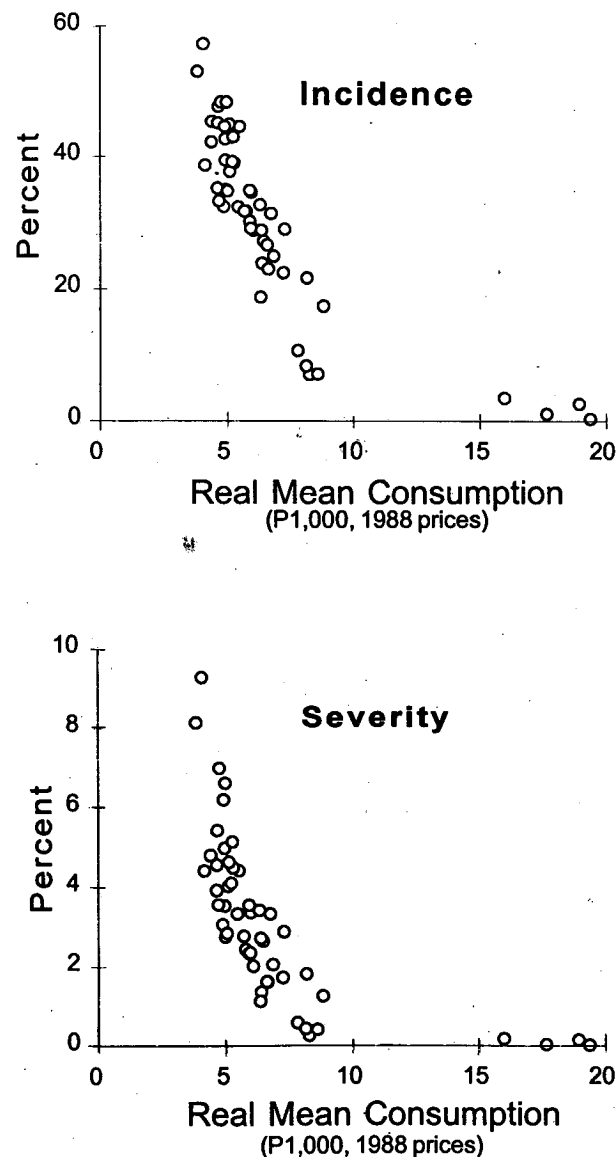
The recent changes in overall inequality (Table 1 and Figure 4), albeit small, are also accounted for largely by changes in living standards within geographic boundaries and not from changes in relative mean incomes among regions or areas of the country (Balisacan and Bacawag, 1994). This observation suggests a crucial point: it is how the economic and institutional environment affects rewards to owners of factors of production, which are distributed highly unevenly within a region or location, that largely determines the country's performance in inequality reduction.

***To what extent do differences in mean living standards account for the variation in regional poverty reduction?***

Mean living standard, as proxied by per capita consumption-expenditure, varies substantially across regions and between urban and rural areas. Metro Manila, which accounts for about 14 percent of the population, has the highest mean expenditure. In the early 1990s, its mean consumption was almost double the national average or about three times the averages for Bicol and Eastern Visayas, two of the poorest regions of the country. Mean consumption is nearly two times that in rural areas. Not surprisingly, poverty also varies considerably across regions and between urban and rural areas (Balisacan, 1997).

The data set for the four survey years and 13 geographic regions of the country shows a strong negative relationship between the consumption mean and the three poverty indices (Figure 13). It is also apparent that the relationship is not linear. Taking logs of the variables deals well with this nonlinearity; the regression coefficient of the logarithm of a poverty measure on the logarithm of real consumption per capita is -2.5 for the head-count regression, -3.0 for the poverty-gap regression, and -3.4 for the distribution-sensitive measure regression. These estimates indicate a highly elastic response of poverty to changes in average living standards. It is well known, however, that such regressions are likely to be biased since cross-region comparisons of levels are quite prone to problems of measurement and related errors. For example, any omission of region-level fixed effects correlated with the consumption variable will bias the estimate of the impact of consumption growth on poverty.

**Figure 13.**  
**Mean Consumption vs. Poverty**



Moreover, since the estimation of poverty uses the information on consumption, any errors in measuring consumption are reflected in the estimates of poverty and, hence, of the regression parameters.

A convenient way to resolve these problems is to focus on rates of growth in poverty and consumption, rather than on levels. Differencing eliminates region-level additive fixed effects that may bias conventional regressions. Instead of using survey consumption means, we employ the (largely independent) estimates of the growth rate in mean consumption per capita reported in the national income accounts. This should take care of the measurement problem noted above. The regression results are<sup>18</sup>

$$H_t/H_{t-1} = 0.923 - 0.935[(C_t/C_{t-1}) - 1], \quad R^2 = 0.20 \\ (30.59) \quad (-3.09) \quad \text{Mean of dep. var.} = 0.880$$

$$PG_t/PG_{t-1} = 0.927 - 1.482[(C_t/C_{t-1}) - 1], \quad R^2 = 0.27 \\ (23.46) \quad (-3.72) \quad \text{Mean of dep. var.} = 0.858$$

$$DSM_t/DSM_{t-1} = 0.937 - 1.864[(C_t/C_{t-1}) - 1], \quad R^2 = 0.29 \\ (19.71) \quad (-3.91) \quad \text{Mean of dep. var.} = 0.850$$

Evaluated at mean values, the implied elasticities of the poverty measures with respect to consumption per capita are -2.6 for the incidence (head-count) index, -3.1 for the depth (poverty-gap) index, and -3.2 for the severity (distribution-sensitive) measure. The higher absolute values of the elasticity for poverty measures that are sensitive to the depth and/or severity of poverty indicate that the effects on the poor of growth (and contraction) in average living standards are not confined to those living near the poverty lines. Thus, *contrary to popular perception, the growth process across regions of the Philippines in recent years has not had strongly adverse impact on the position of the poor.*

The poverty elasticities estimated above are, however, somewhat low (in absolute values) by "international" standards. Using comparable data on poverty from a cross-section of 16 developing countries in the 1980s, Ravallion (1995) estimated poverty elasticities of -3.4 for the head-count index and -5.6 for the distribution-sensitive measure. Thus, while poverty in the Philippines responds elastically to growth, the economy's ability to translate growth to poverty reduction appears weaker than for the "average" developing country. Indeed, the (above) regressions of the rate of change in poverty on the rate of growth of real per-capita consumption could account for only 20-

30 percent of the observed variation in poverty changes across regions during the second half of the 1980s and early 1990s.

### *How important are initial conditions on economic inequality to rural poverty alleviation?<sup>19</sup>*

As shown above, poverty alleviation varies substantially across regions. So is the relative importance of growth to poverty changes in recent years. The rural sector accounts for over three-fourths of poverty in virtually all regions. Within each region (excluding Metro Manila), the agricultural sector is the biggest contributor—over 80 percent—to poverty (Balisacan, 1998). It thus appears that the search for solution to the country's poverty problem has to involve an understanding of the conditions and processes impinging on the performance of the rural sector, as well as on the responses of rural areas to certain growth stimuli.

The "initial" conditions of rural areas—distribution of physical and human assets, infrastructure, and institutions—are expected to significantly influence the responses of rural welfare to growth stimuli such as those provided by agricultural growth and/or export (urban) demand growth. Indeed, success in rural poverty alleviation has been associated with the growth not only of agriculture but also of rural nonfarm activities, especially in economies with fast growing labor force. (Ranis and Stewart, 1993; Otsuka, 1996; Balisacan, 1996). High inequality in access to land, poor state of rural infrastructure, low level of human capital, and unfavorable policy environment would not only impede rural industrialization and growth but could also disproportionately harm the economic prospects of the poor, especially those in low-productivity agriculture. How important are these factors in explaining regional differences in poverty alleviation? In systematically addressing this issue, we have estimated reduced-form functions relating to three aspects of poverty incidence (given by the head-count index), depth (given by poverty-gap index), and severity (given by the distribution-sensitive FGT measure). The poverty data pertain to FLOL estimates (see section 2) using the 1985, 1988, 1991, and 1994 FIES rounds. These data are supplemented by regional indicators obtained from various sources.

In each function, we have included the following (3-year lagged) explanatory variables: functional literacy, defined as the proportion of adult population who can read, write, and execute simple

messages; land inequality, given by the landholding Gini ratio which has extreme values of one (perfect inequality) and zero (perfect equality); average farm size; incidence of tenancy, defined as the ratio of area of farms under share tenancy to total area of farms; irrigation, expressed as the ratio of irrigated to total farm area; agricultural terms of trade, defined as the ratio of the price of agriculture to the price of non-agriculture; road wealth, quality-adjusted road length per square kilometer of land; and electricity, defined as the proportion of households with access to electricity. The functional-literacy variable reflects the predetermined quality of human capital endowment in the region. The irrigation variable is a proxy for land quality. The terms-of-trade variable reflects relative price incentives for agriculture. Road wealth and electricity are proxies for access to markets and off-farm employment.<sup>20</sup> Three year-dummy variables are also included to capture significant differences in political and economic environment during the period of interest: 1985 was a period of severe macroeconomic difficulties (Marcos regime), 1988 was the peak of the short-lived economic recovery in the 1980s (Aquino regime), 1991 was the lowest ebb of the relatively long recession beginning in 1989 (severely weakened Aquino regime), and 1994 was the early period of the economic recovery and of renewed policy and institutional reforms (Ramos regime). All the regression equations take a double-log specification. Hence, the coefficients, except for the dummy variables, can be conveniently interpreted as poverty elasticities. In all regressions Metro Manila is excluded since agricultural production is not an important part of economic activity in the region. The regression results are given in Table 6.

Functional literacy is highly significant in all regressions. Its coefficient suggests a very elastic response of poverty to improvement in human capital. Poverty incidence falls by about 15 percent if functional literacy rate improves by 5 percent, all other things remaining the same. For the poverty measure capturing the severity of poverty, the reduction would be 23 percent. These results confirm the popular story emanating from the development experience of the fast-growing East Asian economies, suggesting that substantial improvements in human capital formed part of the building blocks for sustained economic growth and poverty reduction (World Bank, 1993; Ranis, 1996).

The land-inequality variable is consistently significant in all regressions, thereby also affirming the common observation in

**Table 6. Poverty Determination Functions**

Explanatory variable	Incidence	Depth	Severity
Functional literacy	-3.120 (-5.07)	-4.070 (-5.38)	-4.637 (-5.25)
Land inequality	2.579 (6.92)	3.406 (7.42)	3.946 (7.36)
Farm size	-0.358 (-2.82)	-0.468 (-2.99)	-0.499 (-2.73)
Tenancy	0.045 (0.43)	0.057 (0.44)	0.080 (0.53)
Agricultural terms of trade	-0.255 (-0.50)	0.115 (0.18)	0.609 (0.82)
Irrigation	-0.175 (-3.51)	-0.307 (-5.00)	-0.404 (-5.63)
Road wealth	-0.427 (-3.17)	-0.613 (-3.70)	-0.727 (-3.77)
Electricity	-0.148 (-1.64)	-0.317 (-2.11)	-0.394 (-2.18)
Year-1988 dummy	-0.066 (-0.87)	-0.140 (-1.48)	-0.184 (-2.68)
Year-1991 dummy	-0.190 (-2.05)	-0.209 (-1.84)	-0.203 (-1.53)
Year-1994 dummy	-0.230 (-2.70)	-0.328 (-3.13)	-0.376 (-3.08)
Constant	-0.076 (-0.27)	-1.060 (-3.01)	-1.858 (-4.52)
	Adjusted R <sup>2</sup>	0.867	0.887
	F-value	28.97	34.65
			0.890
			35.63

Note: All variables, except year dummies, are in natural logarithms. Figures in parentheses are t-ratios. Data pertain to regional aggregates for rural areas.

development literature concerning the negative association between landholding inequality and rural poverty.<sup>21</sup> Furthermore, the elasticity of poverty with respect to this variable increases with the degree of importance given to the consumption shortfalls of the poor. Thus, for a 5 percent increase in land Gini index, poverty incidence rises by about 13 percent, while poverty severity rises by about 20 percent, all other factors remaining the same. Even more interesting is that these elasticities reflect the national picture, i.e., the responsiveness of national poverty to the consumption Gini index (Balisacan and Bacawag, 1994).

Farm size and irrigation are also important determinants of poverty in regions other than Metro Manila. The consistently negative and significant coefficient of the irrigation variable suggests that improvements in land quality offer an important avenue for reducing poverty, both in agriculture and in rural nonfarm areas.

Road wealth is highly significant in all equations. Electricity is significant for the depth and severity regressions but not for incidence regression. At the very least, both variables suggest that access to markets and off-farm employment opportunities influence poverty. The importance of road wealth in explaining the variation in regional poverty is particularly interesting because previous attempts to capture the effect of market access and off-farm employment opportunities on poverty in agriculture through the use of conventional measures such as road density and urbanization (usually expressed as the ratio of urban population to total population) proved unsuccessful (see Balisacan, 1993).

The terms-of-trade variable is insignificant. It is possible that this variable could not capture adequately the regional biases of commodity pricing policies and hence the relative profitability of agriculture.

Interestingly, tenancy is not significant in any of the regressions. What this observation, as well as many other recent theoretical and empirical studies (see, e.g., Hayami and Otsuka 1993), suggests is that tenancy by itself is not as important and compelling a correlate of poverty as expected: the variation in incomes within tenure classes (reflecting the effect of farm size, yield, cropping intensity, land quality, etc.) has been found to be much greater than the variation between classes.

Finally, note that the year dummy variables are generally significant, indicating that changes in the overall macroeconomic and political regimes influence the incidence, depth, and severity of poverty, as expected.

## What Have We Learned?

The robustness of what we have come to know about inequality and poverty profiles in the Philippines deserves a fresh look. The exercises performed in this paper indicate that these profiles are sensitive to choices made about the indicator of living

standards, income scales for interhousehold comparison, poverty norms or lines, and aggregation procedures for summarizing household information on living standards. It is also important that the practice of poverty measurement and the purpose of poverty monitoring be reconciled. If, for example, the main concern of development policy is the reduction of absolute poverty, then the poverty standards used for the construction of poverty profiles should not be rising (falling) with increases (decreases) in overall living standards.

Contrary to popular perceptions, recent episodes of growth in the Philippines have not been anti-poor; the bulk of the poverty reduction since the mid-1980s, a period of wide-ranging economic deregulation and institutional reforms, has come from the beneficial effects of growth on the poor. The quality of the recent growth—in terms of its impact on poverty—is also not inferior to that in other East Asian countries. The main reason for the still relatively high poverty in the Philippines is mainly the short duration of growth and the slowness of this growth. What the relatively fast growth—sustained for over 20 years—in East Asia (especially China, Thailand, and Indonesia) means is that these countries were able to reduce absolute poverty by more than half in a relatively short period of just two decades. This is a remarkable achievement unprecedented in recent history.

The importance of growth in poverty alleviation varies greatly, however, across administrative regions and sectors of the economy. For the entire country, the agricultural sector led the way to poverty alleviation during the 1980s and early 1990s despite its sluggish growth (Balisacan, 1997). The self-employed workers, the large majority of whom were dependent on agriculture, gained more than proportionately to the overall growth, mainly because their consumption grew more rapidly than those of other groups. For faster poverty alleviation, the development of agriculture and the rural sector, which still accounts for over three-fourths of the poor, has to be a central element of the country's development strategy. Priority should be given to rural infrastructure development, human capital formation, agricultural research and small- and medium-scale industrial development; and improvement of access to land. As the East Asian experience demonstrates, these investments, together with sound "fundamentals" (i.e., fiscal and monetary restraint), are critical to the building of initial conditions for broad-based growth and development.

The high inequality of landholding weakens, though perhaps not eliminates, the potential of agricultural growth in leading the way to poverty alleviation in rural areas. Several land reform programs have been launched since the 1930s, but their performance have been poor in relation to their objectives, as well as to similar programs undertaken in East Asian countries. In general, their very limited success in promoting either equity or efficiency stems not so much from lack of "political will" but from faulty designs arising from unrealistic expectations and virtual disregard for financial, economic, and political landscapes. It is high time that an alternative paradigm for reforming agrarian relations in the Philippines, as elsewhere in developing Asian countries, be found. The "new" paradigm needs to exploit the virtues of decentralized decision making, rely upon market forces for land transactions, and impose compatibility of incentives with program objectives (i.e., the intended beneficiaries have the incentive to seek program benefits, while the unintended beneficiaries do not have the incentive to preempt these benefits).

The finding that economic growth in recent years has been beneficial to the poor, even in the short run, is a stark contrast to earlier findings for the 1960s and 1970s when the "trickle down" effects of growth on poverty were comparatively small (see, e.g., Balisacan, 1993; Ranis and Stewart, 1993; Bautista, 1997). It is possible that the structure of the economy has changed in ways that now allow for greater participation of the poor during episodes of growth. But what has changed, and how have specific policy reforms in recent years influenced the observed outcomes on poverty? The analysis undertaken in this paper provides some answers, but the story on what explains the country's unenviable record in growth and poverty alleviation is still far from complete.

It is unlikely that the complete story will involve an appeal to new tricks in poverty alleviation. The lessons of development experience in Asia (and elsewhere) do not point out the necessity of such tricks. Indeed, policymakers need to be constantly on guard against peddlers of "new" models for—or approaches to—poverty alleviation. The old—but still the only effective—tricks to development and poverty alleviation require nothing more than improvement of performance in traditional areas of development management: maintenance of macroeconomic stability, financing and public-sector coordination of investments in social and physical infrastructure, promotion of rules ensuring incentive compatibility in

government and in the private sector, and pursuit of peace and order. The country's recent performance in any of these areas is hardly encouraging.

Appendix Table 1.  
Do income and expenditure quintile indicators give the same  
classification of households?

Income per capita decile	Expenditure per capita decile										
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Total
First	7.17	2.17	0.51	0.12	0.01	0.01	0.00	*	*	*	10.00
Second	2.07	4.39	2.47	0.81	0.19	0.07	0.00	0.01	0.00	0.00	10.00
Third	0.51	2.10	3.76	2.44	0.87	0.26	0.05	0.01	0.00	0.00	10.00
Fourth	0.15	0.77	1.94	3.20	2.59	0.90	0.19	0.03	0.02	0.01	10.00
Fifth	0.07	0.40	0.85	1.92	3.37	2.42	0.82	0.17	0.01	0.01	10.00
Sixth	0.03	0.12	0.31	0.82	1.79	3.23	2.69	0.80	0.13	0.03	10.00
Seventh	0.00	0.04	0.10	0.31	0.79	1.95	3.56	2.76	0.45	0.04	10.00
Eighth	*	0.01	0.04	0.14	0.31	0.82	1.89	3.92	2.69	0.18	10.00
Ninth	0.00	0.00	0.01	0.05	0.10	0.27	0.68	1.95	3.01	1.94	10.00
Tenth	0.00	0.00	0.00	*	0.01	0.02	0.12	0.35	1.69	7.80	10.00
<b>Total</b>	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	100.00

\* Less than one-tenth of one percent

## Endnotes

1. Extensive discussions of the conceptual and measurement issues are available elsewhere (see, in particular, Ravallion, 1994, 1996; Foster and Sen, 1997; and Atkinson, 1983).
2. Cox and Jimenez (1995) found evidence of substantial interhousehold income transfers—typically from the relatively rich households to poor households—in the Philippines.
3. Put differently, within a single period, the appropriate argument of the household welfare function is current consumption rather than current income.
4. The literature follows two main approaches in the construction of equivalence scales. The first uses an expert's opinion on nutritional needs of different age-sex groups to determine them. This approach has, however, not gained wide acceptance since "needs" as a concept is usually regarded as social rather than physiological. Experts hardly agree on what constitutes "correct" needs. Furthermore, needs vary considerably over time and across population groups and regions, depending on environment, work habits, occupation, health, and so on. The second approach—and the one generally preferred by economists—uses observed household expenditure patterns. This approach usually involves estimation of a consumer demand model. For an illustrative case of this approach using Philippine data, see Balisacan (1992).
5. The Gini ratio goes from zero (for absolute equality, with each individual or household receiving an identical share of income) to 100 (for absolute inequality, with one person or household receiving all the income).
6. A given decrease in inequality within the bottom part (say, the poorest 20 percent of the distribution), combined with an equivalent increase in inequality within the top (richest) part, will leave the value of the Gini index unchanged. In terms of the familiar Lorenz curve, this redistribution does not change the area above the Lorenz curve and below the 45-degree (perfect equality) line, which is the numerator of the Gini index (the denominator is the area below the 45-degree line).
7. Using an internationally comparable poverty line of one US dollar (at 1985 purchasing power parity) per capita per day, the World Bank (1996b) estimated the poverty incidence in the early 1990s to be about 15 percent for Indonesia and 20 percent for the Philippines.

8. See UNDP's Human Development Report for an international comparison of human development indicators.

9. What is invariably quoted in policy briefs, country reports, and popular publications (e.g., *Far Eastern Economic Review* and *Wall Street Journal*) are official estimates of poverty. Users of these estimates need not be economists familiar with the technical details of poverty estimation.

10. The menus for 1985 were based on the Food and Nutrition Research Institute's 1982 Food Consumption Survey, while those for 1988 were on the 1987 Food Consumption Survey.

11. The full description of the methodology is provided in NSCB (1996).

12. The approach builds on the framework suggested by Ravallion (1994).

13. This measure has been popular in recent empirical work owing to its appealing properties. See, for example, Besley (1990), Datt and Ravallion (1992), and Grootaert (1995).

14. On the application of stochastic dominance theory to poverty assessment, see Atkinson (1987) and Foster and Shorrocks (1988).

15. We should note that rapid poverty reduction started as early as the 1970s for Indonesia and the early 1980s for China. The slower pace during the second half of the 1980s and early 1990s could in part reflect the diminishing responsiveness of poverty to growth, as expected. During the early period of growth, much of poverty is "transitory" in nature: many are poor simply because of low incomes from employment and assets. This type of poverty diminishes in importance over time as the economy grows. The other type of poverty, "chronic" poverty, increasingly takes the center stage: the chronic poor may not be able to participate in economic growth owing to long illnesses, lack of the requisite human capital, etc. But reaching them through direct intervention schemes may not be at all easy, especially if the quality of governance is poor.

16. The methodology follows that suggested by Datt and Ravallion (1992) for decomposing poverty change into growth and redistribution components.

17. If the population can be assigned into mutually exclusive and exhaustive groups, then Theil L and the variance of logarithm, the two inequality measures used in this exercise, can be additively decomposed into within-group and between-group components. The within-

group component can be interpreted as the exact reduction in overall inequality if within-group inequality is eliminated and group mean incomes (expenditures) are held constant. Similarly, the between-group component gives the exact reduction in inequality if between-group inequality is eliminated by equalizing all the group means. As expected, since Theil L and the variance of logarithm are not equally sensitive to the same parts of the living-standard distribution, they do not yield identical values for the two components. However, the difference is not large. The values of the components shown in Figure 12 pertain to the averages for two inequality indices.

18. Ramset reset test for functional form (using powers of fitted values) gave 1.41 (distributed as F) for the head count, 0.99 for the poverty gap, and 0.62 for the distribution-sensitive measure. The tests are satisfactory, suggesting the appropriateness of the functional form. White-Weisberg test for heteroskedasticity gave 0.03 (distributed as chi-square) for the head count, 0.81 for the poverty gap, and 0.35 for the distribution-sensitive measure. These tests indicate the absence of the heteroskedasticity in the regressions.

19. This section has drawn substantially from Balisacan (1998).

20. Road wealth is preferred to the conventional road-density measure (total road length expressed as a ratio of land area) since the former better reflects regional differences in the quality of road stock.

21. The result is also consistent with recent cross-country findings suggesting that initial land (income) inequality negatively affects subsequent economic growth (Perotti, 1996; Birdsall and Londoño, 1997; Deininger and Squire, 1997) and, hence (given the discussion in section 3), poverty.

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