GROWTH AND EQUITY IN THE PHILIPPINES: A REEXAMINATION

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ABSTRACT

The paper uses a newly constructed data set on poverty and inequality to reexamine the usual story on economic growth, poverty, and income inequality in the Philippines. It finds that, contrary to popular perceptions, growth in recent years and across sectors or areas of the country has not had an adverse impact on the position of the poor. Poverty responds quite well to growth, although the economy's ability to translate growth to poverty reduction appears weaker than for an "average" developing country. Similarly, the absence of growth hurts the poor, both absolutely and relatively.

INTRODUCTION

A large body of evidence supports the view that economic growth has been the key factor responsible for the remarkable reduction of absolute poverty in Asia during the last two decades (World Bank 1990; Ravallion and Chen 1997). Evidence also shows that, not until lately, the rapid growth in East Asia accompanied improvement in income distribution, thereby accentuating the favorable effect of growth on poverty (World Bank 1993; Ranis 1995). In contrast, the usual claim in policy discussions in the Philippines, as well as in academic fora, is that the recent episodes of growth have not benefited the poor, either absolutely or relatively.

Unfortunately, official data on poverty have not helped much in informing the discussion on the growth-poverty-inequality nexus in the Philippines. As elaborated elsewhere (Balisacan 1997a, b), the official approach to assessing poverty appears incapable of tracking the full impact of growth on absolute poverty. This is so since the official poverty lines applied for various regions, areas, and years

imply different levels of living standards, tending to *systematically* underestimate (overestimate) the reduction (increase) in absolute poverty in economically more progressive (backward) regions or sectors, or during periods when the overall economy is expanding (contracting).

Our aim in this paper is to reexamine the aggregate and spatial profiles of poverty and uses decomposition approach to explore the sources of poverty change from the mid-1980s to the mid-1990s. This period saw economic growth (and decline) taking place in an environment of political stability, economic deregulation, and institutional reforms. It appears that this growth, especially since 1993, has a fundamentally different character from previous ones. In contrast, during most of the last three decades, each episode of boom, fueled largely by massive foreign borrowing and capital-intensive import-substituting industrialization, was soon followed by bust and stagnation. The period also witnessed heavy government regulation of the market economy, as well as political instability, natural disasters, and major shocks in global trade and finance.

In the section that follows, we discuss some measurement issues that have important bearing on what we know about poverty and income inequality in the Philippines. We then explore the proximate causes of poverty change during the period, as well as spatial differences in the relative importance of consumption growth and redistribution to observed changes in spatial poverty. We end the paper with some concluding remarks.

MEASUREMENT ISSUES AND DATA

Identification of the poor requires a broad indicator of household economic welfare. Total current income is the official choice in the Philippines. Current income may, however, overestimate or underestimate household economic welfare (hereafter also referred to loosely as living standard). 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 (Besley 1995). Current consumption would thus be a better indicator of welfare level than current income.[1] 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 measurement of not only current welfare level but also of *long-term* average well-being.[2] This does not, of course, suggest that consumption

[1] Cox and Jimenez (1995) found evidence of substantial interhousehold income transfers – typical from the relatively rich households to poor households – in the Philippines.

[2] Put differently, within a single period, the appropriate argument of the household welfare function is current consumption rather than current income (Deaton and Muellbauer 1980.

this adjustment, owing largely to the absence of appropriately constructed regional cost-of-living indices. We have calculated Laspeyre regional cost-of-living indices for 1994 by matching prices of 400 product categories in the National Statistics Office consumer price data – the same data used in the construction of official CPI – with FIES expenditure for 50 food and 61 nonfood categories. The calculation of the indices has used quantity weights of the average Philippine household, as well as nationwide average commodity prices as base prices. Thus, the price indices for 1949 measure differences in price levels in the 13 regions relative to the average for all of the Philippines. Since our analysis involves intertemporal welfare comparison, we have incorporated price increases over time to the regional cost-of-living index. This was done by applying the official CPI to the regional cost-of-living index. The resulting indices for 1985-1994, summarized in Table 1, indicate substantial regional price variation in any given year, as well as marked regional differences in rates of price increases during the period.

The setting of poverty line invites even more disagreement. But when the aim is to inform policy choices for reducing absolute poverty, an appealing property 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 iving 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 Philippine Government's approach to constructing poverty lines fails this property, even as its avowed policy goal is the elimination of absolute poverty. As shown in Balisacan (1997a), the official poverty lines applied for various regions and areas imply different levels of living standards, tending to be higher for the economically more progressive regions (areas) than for the economically backward regions (areas). There is therefore a systematic tendency of the official approach to underestimate (overestimate) the reduction (increase) in absolute poverty in economically more progressive (backward) regions or sectors, or during periods when the overall economy is expanding (contracting). The problem arises from its use of region-specific (and, within region, area-specific) poverty line based on the prevailing consumption pattern of that region (area).[5]

We have constructed a new set of regional poverty lines which embed the consistency feature for a poverty norm, i.e., the poverty lines are fixed for various

[5]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.

[6]This set is based on a much richer consumer price data than that reported in Balisacan (1997a,b).

Table 1. Regional Cost-of-Living Index (All-Philippines 1994 = 100)

Region	1985	1988	1991	1994
Philippines	46.1	51.5	78.2	100.0
NCR National Capital Region	56.1	70.1	107.7	147.0
1. Ilocos	48.9	54.7	81.7	105.6
2. Cagayan Valley	51.0	55.0	81.1	102.5
3. Central Luzon	50.1	58.8	88.3	110.1
4. Southern Luzon	51.1	56.3	86.3	107.3
5. Bicol	46.0	51.9	80.2	100.0
6. Western Visayas	44.5	50.2	78.8	97.0
7. Central Visayas	45.8	51.3	84.0	104.3
8. Eastern Visayas	47.7	52.7	78.3	99.9
9. Western Mindanao	45.9	51.0	76.6	95.5
10. Northern Mindanao	47.5	51.3	74.9	94.3
11. Southern Mindanao	52.0	56.5	78.0	97.0
12. Central Mindanao	45.7	51.5	75.7	95.7

population subgroups and periods in terms of the level of living they imply.[6] The details of the estimation are provided in the Annex. The resulting poverty lines (hereafter referred to as "absolute" poverty lines since they roughly represent essential basic needs), are about 7% to 42% lower than the official poverty lines, depending on the region and area. Using regional population share as weights, the average absolute poverty line is 31% lower than the average official poverty line. Thus, in this paper, we also refer to our estimates as "low" poverty lines and the official figures as "high" poverty lines. In the next section, we will employ the former in constructing poverty profiles, and the latter in examining the robustness of these profiles to assumption about the poverty norm.

Another controversial issue in poverty measurement concerns the aggregation of 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, as well as in most international poverty comparisons. This measure, however, is silent about the depth and severity of poverty. Two other popular measures are reported below to capture these aspects of poverty. The *poverty-gap index,* defined by the mean distance below the poverty line as a proportion of that line (where the nonpoor are counted as having zero poverty gap), gives a measure of the "depth" of poverty, while the *distribution-sensitive measure,* defined as the mean of the squared proportionate poverty gaps, reflects the "severity" of poverty. The latter index pertains to the familiar FGT (Foster-Greer-Thorbecke) measure incorporating a society's "moderate" aversion to poverty (Foster et al. 1984).

POVERTY CHANGE AND PROXIMATE CAUSES

Table 2 provides our estimates of poverty for the 1980s and early 1990s. All the poverty indices show significant reductions from 1985 to 1998, significant increases (except for incidence) from 1988 to 1991, and significant reductions from 1991 to 1994. These changes appear to be related to the growth (and stagnation) of real mean consumption. The highest 3-year poverty reduction was achieved during the "economic boom" of 1985-1988 when real consumption per capita rose by 9.6%. On the other hand, the period of rising poverty severity saw the change in mean consumption to be statistically insignificant (at 5% level). But another "proximate" cause for the observed poverty changes during the 1980s and early 1990s may well be the changes in the distribution of living standards. After falling to 38.6% in 1988 from 39.8% in 1985, the expenditure Gini rose to 41.1% in 1991. It fell back to 1985-level in 1994.

The changes in poverty may be also related with movements in price levels. Inflation in 1983-1985 averaged 25%. The rate dropped from 18% in 1985 to 9%

Table 2. Aggregate Poverty Profile

	1985	1988	1991	1994
Number of households in sample	16,971	18,922	24,789	24,797
Mean expenditure per capita (in 1994 prices)	9,738	10,674 (5.87)	11,213 (0.46)	11,410 (2.79)
Mean income per capita (in 1994 prices)	11,245	13,216 (6.61)	14,008 (0.06)	13,986 (1.79)
Incidence (%)	37.4	31.1 (-13.43)	32.0 (1.42)	29.2 (-6.67)
Depth (%)	11.2	8.2 (-15.92)	9.0 (4.06)	8.0 (-7.45)
Severity (%)	4.6	3.1 (-15.36)	3.6 (4.91)	3.1 (-6.97)
Expenditure Gini (%)	39.8	38.6	41.4	39.8

Notes: Figures in parentheses are *t*-ratios of values for reference year against previous period. The *t*-test for the significance of poverty differences is based on the methodology proposed by Nanak Kakwani, "Statistical Inference in the Measurement of Poverty," *Review of Economics and Statistics* 75 (November 1993), 632-639. Per capita income and per capita expenditure are adjusted for regional cost-of-living differences. The calculation of the Gini indices uses real per-capita expenditure distributions.

in 1988, possibly benefiting the majority of the poor who tended to be fixed-income earners as well as self-employed workers in rural areas. Inflation resurged to an average of 15% a year at the end of the decade. Inflation decelerated to only 8.5% a year during 1992-94. As shown elsewhere (Balisacan 1995), high inflation during a period of low growth increases aggregate poverty, as what happened in 1989-1991. Particularly vulnerable to commodity (particularly food) price increases are the numerically large small agricultural producers and landless workers who are net buyers of food.

Notice that, during 1988-1991, the significance (i.e., the *t*-ratio) of the poverty difference is higher for the measures that account for the depth and severity of poverty. This suggests that the probability that the poverty gap and the distribution-sensitive (severity) measures did not change is lower than the probability that the incidence index did not change during the period.

Poverty Ordering

As indicated earlier, poverty ranking may be influenced by the choice of poverty indices, as well as the construction of (assumption about) poverty lines. To check whether the intertemporal poverty ordering is robust to the choice of poverty indices and poverty lines, we have employed the dominance criteria suggested by Jenkins and Lambert (1997). The approach involves constructing cumulative distributions of income shortfalls from the poverty line z and checking plots of these distributions – the TIP curves, so named because each curve simultaneously portrays the 'Three "I"s of Poverty', i.e., incidence, intensity, and inequality – for consistency with the dominance criteria. Figure 1 compares pairs of TIP curves for the 1980s and 1990s; two non-intersecting TIP curves indicate that the change in poverty during the period is unambiguous for a wide class of poverty indices suggested in the literature – including the FGT class of poverty indices for $a \geq 1$) – and for all poverty lines set at z or lower. For purposes of TIP curve construction, we have employed the set of high poverty lines (i.e., official poverty lines), thereby allowing the application of the dominance criteria for a wide range of plausible poverty lines, including the low poverty lines estimated in this paper. The incidence aspect of poverty is given by the length of each TIP curve's non-horizontal section. The intensity (depth) aspect of poverty is indicated by the height of the TIP curve: the vertical intercept at 100% cumulative population share is the aggregate poverty gap of the population. The severity dimension of poverty is summarized by the degree of curvature of the non-horizontal section of the TIP curve.[7]

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[7]There are other criteria for unanimous poverty orderings suggested in the literature (e.g., Atkinson 1987; Foster and Shorrocks 1988), but the TIP curve provides a more revealing picture of poverty and distribution. Moreover, its construction permits the strength of poverty comparison to be tested.

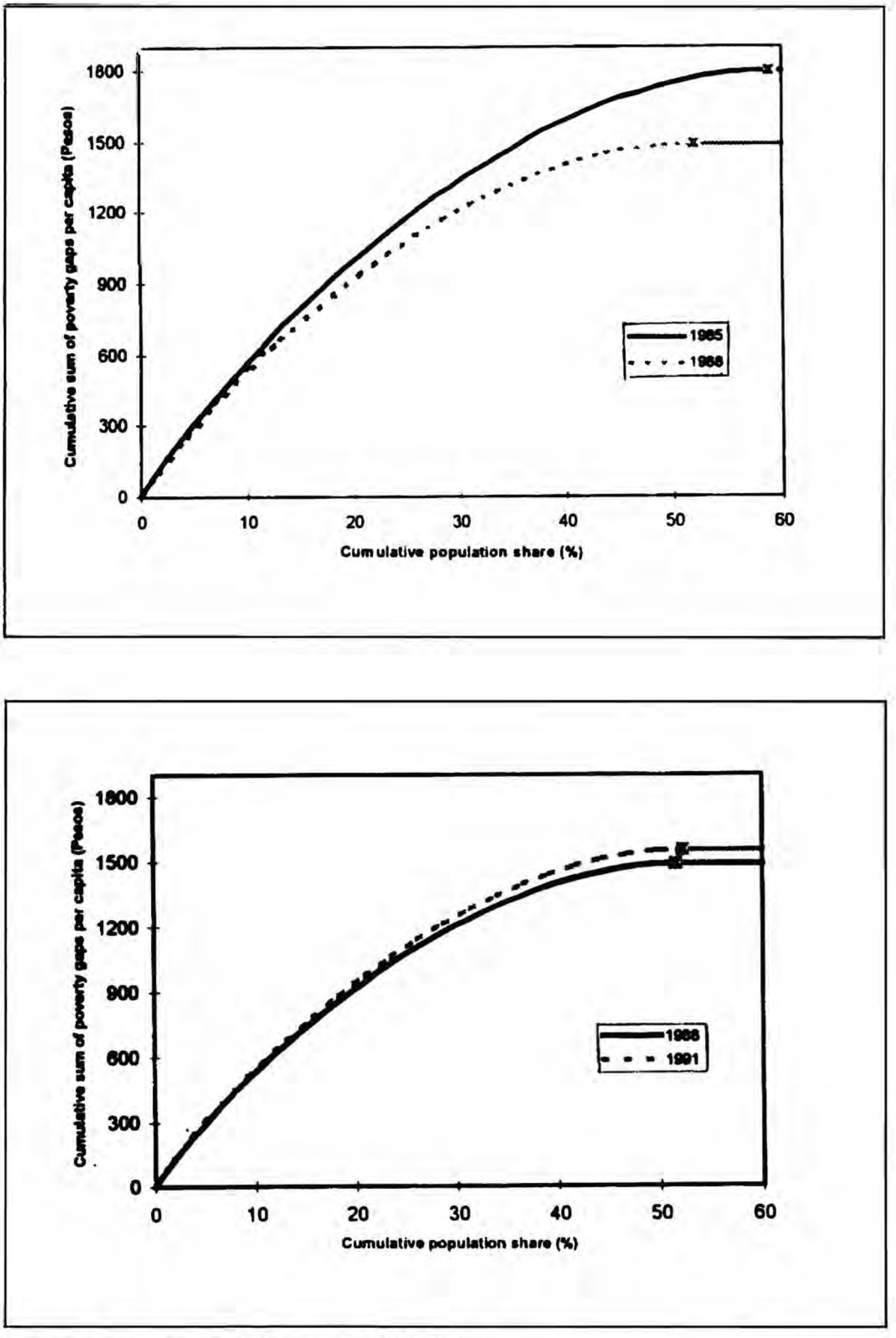

Figure 1. Philippine TIP Curves, 1985-1994.

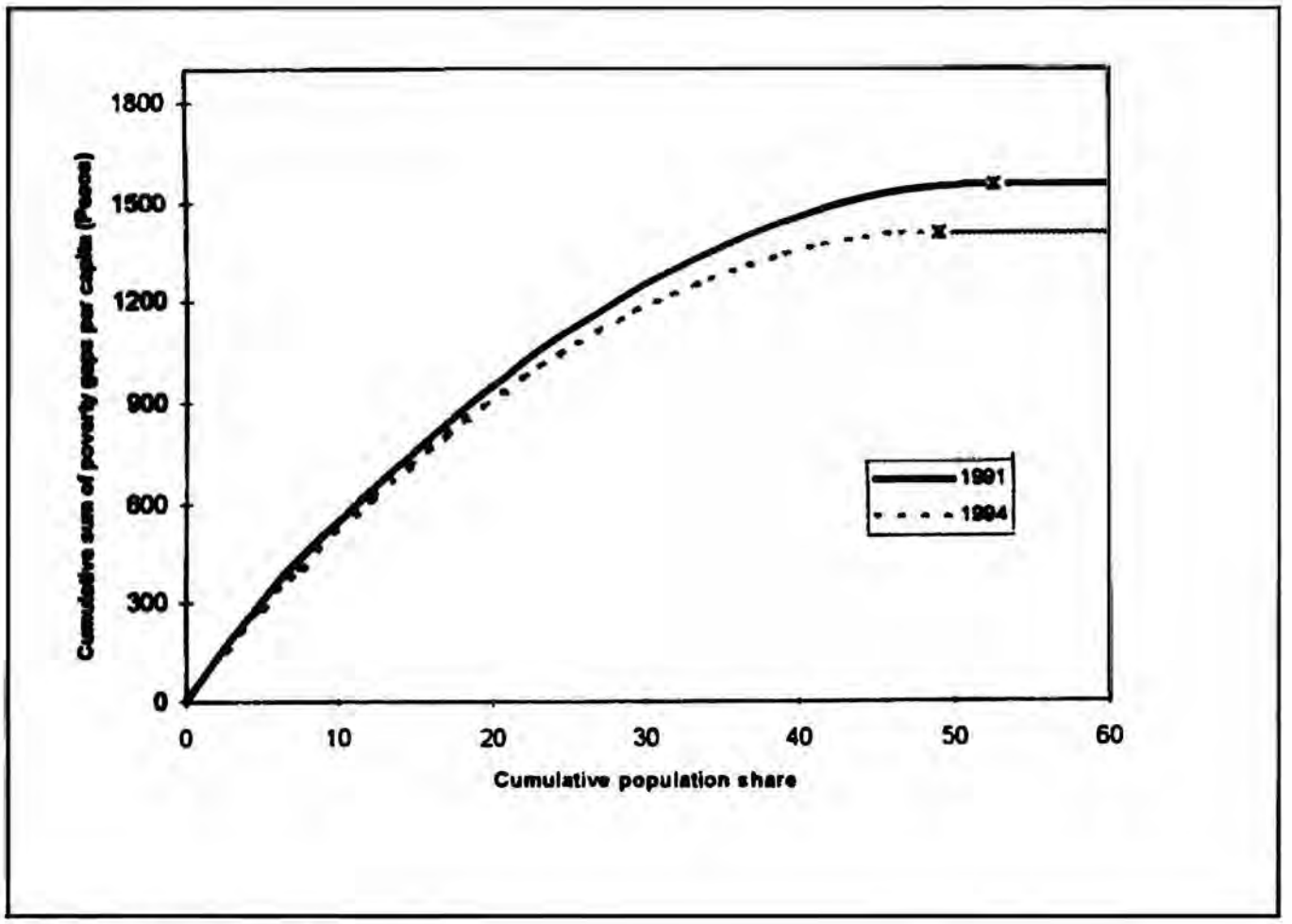

Figure 1 (continued)

Clearly, as shown in Figure 1, poverty is higher in 1985 than in 1988 according to wide class of poverty indices and for all poverty lines equal or less than the official poverty lines. The inference made earlier than the intensity and severity of poverty increased in 1991 appears to be also robust: the TIP curve for 1991 is virtually always above that for 1988. TIP curves for 1991 and 1994 also reveal an unambiguous poverty ordering: poverty is higher in 1991 than in 1994.

Accounting for Poverty Change

As noted above, both consumption growth (stagnation) and changes in the distribution of consumption appear to have influenced the changes in poverty over the economic cycle. It is possible to determine the relative importance of these two factors 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 redistribution components of the observed changes in the poverty measures employed in this paper. 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.[8] In this paper, we follow two procedures suggested independently by Datt and Ravallion (1992) and Kakwani (1993a) to decomposing procedure applies only to small changes in poverty measures and their arguments. On the other hand, the Datt-Ravallion's decomposition procedure is applicable also for cases involving large changes.

Table 3 gives the relative importance of growth and distributional change to the three poverty measures. The decomposition uses the consistent poverty lines estimated in this paper.

Both Kakwani's decomposition procedure and Datt-Ravallion's show generally consistent qualitative results. The growth component accounted for a disproportionately greater share of the poverty change during the period of relatively rapid growth (1985-1988), as well as during the entire 1985-1994 period. Moreover, when the increase in mean consumption was significant (1985-1988 and 1991-1994) when the increase in mean consumption was significant (1985-1988 and 1991-1994), the redistribution component was negative, indicating that the redistribution augmented the favorable effect of growth on poverty.[9] The reduction in poverty incidence in 1991-1994 when the increase in mean consumption was comparatively small (though significant at 5% level), would have been only about 1 percentage point, instead of the observed 2.7 percentage points, if not for the observed decline in inequality. On the other hand, when consumption was positive and accounted for the bulk of the observed increase in poverty. This shows that economic stagnation hurt the poor mainly through its negative effect on the distribution of household welfare. Note, again, that during this period inflation was high, averaging over 10% per year.

HOW IMPORTANT ARE REGIONAL DIFFERENCES IN 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

[8]A poverty change may not be decomposable exactly into these two components. That is, there may be a "residual" component, which can be interpreted as the difference between the growth (redistribution) components evaluated at the terminal and initial consumption distribution (mean consumption). The residual vanishes if either mean or distribution does not change over the decomposition period.

[9]In contrast, the redistribution component was positive, though comparatively small, in Balisacan (1997b).

Table 3. Decomposition of Poverty Change

	Total Poverty Change	Datt-Ravallion Procedure		Kakwani Procedure	
		Growth	Redistribution	Growth	Redistribution
Incidence					
1985-1988	-6.33	-5.43	-0.27	-5.31	-1.02
1988-1991	0.87	-2.80	4.15	-1.01	1.88
1991-1994	-2.75	-1.01	-1.75	-1.29	-1.46
1985-1994	-8.21	-9.44	2.62	-8.22	0.01
Depth					
1985-1988	-2.91	-2.26	-0.41	-2.64	-0.27
1988-1991	0.78	-1.08	2.02	0.07	0.71
1991-1994	-1.07	-0.39	-0.69	-0.62	-0.45
1985-1994	-3.20	-3.71	1.40	-3.23	0.03
Severity					
1985-1988	-1.53	-1.09	-0.35	-1.43	-0.10
1988-1991	0.46	-0.48	1.06	0.15	0.31
1991-1994	-0.49	-0.19	-0.32	-0.30	-0.19
1985-1994	-1.55	-1.75	0.72	-1.59	0.04

Note: The residual term in the Datt-Ravallion approach is omitted.

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 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 decision.

Analysis of household income (expenditure) data shows that interregional inequality accounts for a small proportion of the national inequality (Figure 2).[10] While regional differences in mean expenditures are substantial, the contribution of between-region component to overall inequality is rather small (no more than 20%). 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%. 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%.

Inequality arising from large differences in mean income between urban and rural areas also accounts for no more than 20%. 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 2 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.

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 (see Table 2), albeit small, are also accounted for largely by changes in living standards within geographic boundaries and less so 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.

[10]In generating Figure 2, we have made use of Theil L and the variance of logarithm. These inequality measures are additively decomposable 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 logarthm 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 2 pertain to the averages for the two inequality indices.

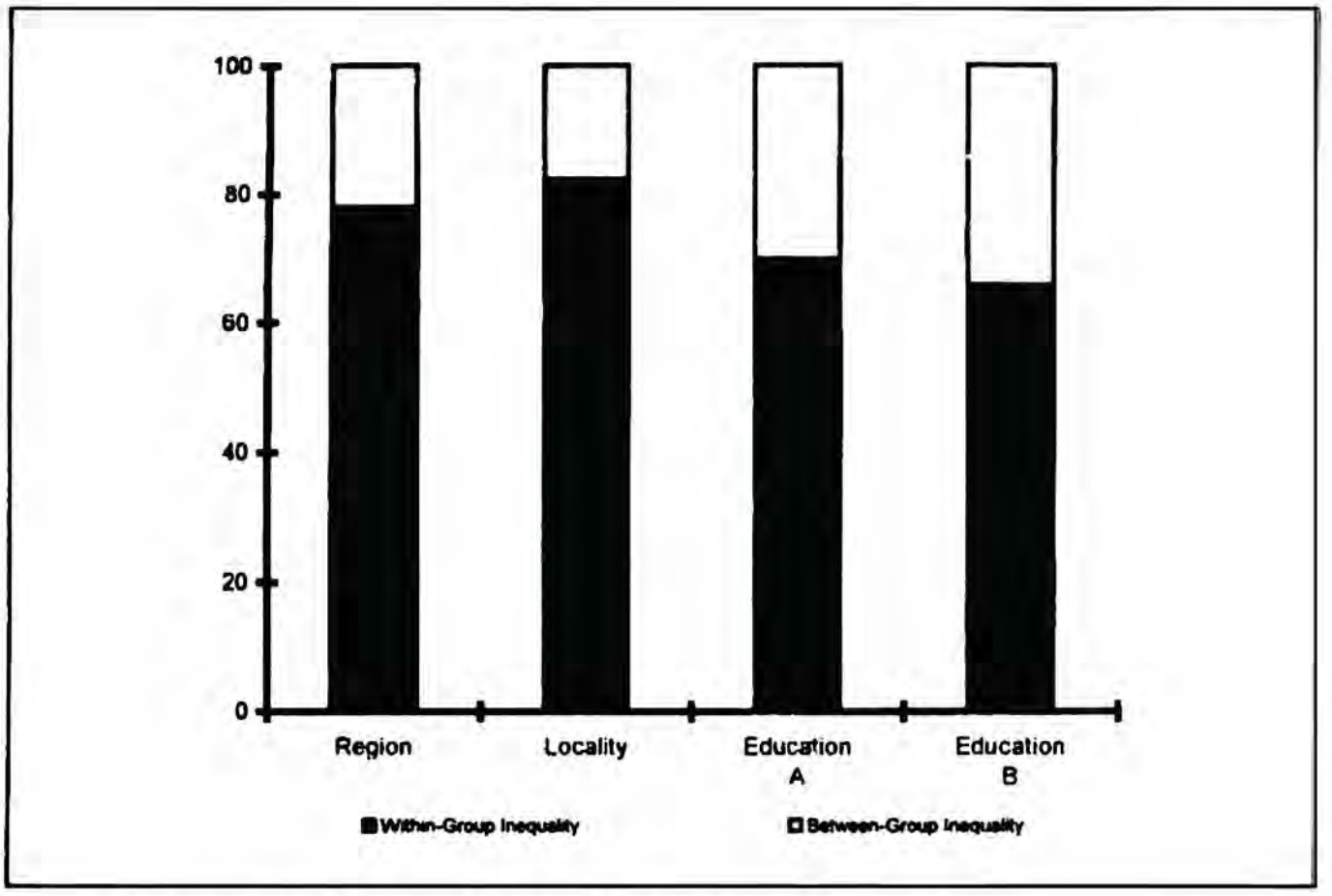

Figure 2. Sources of National Inequality in Living Standard.

HOW IMPORTANT IS GROWTH TO REGIONAL POVERTY REDUCTION?

Mean living standard, as proxied by per capita consumption-expenditure (adjusted for cost-of-living differences), varies substantially across regions of the country. Metro Manila, which accounts for about 14% 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. Not surprisingly, poverty also varies considerably between regions (Table 4).

The data set for the four survey years and 13 geographic regions of the country show a strong negative relationship between the consumption mean and the three poverty indices (Figure 3). 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 –2.1 for the head-count (incidence) regression, -2.6 for the poverty-gap (depth) regressions, and –2.7 for the distribution-sensitive measure (severity) 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

Table 4. Regional Poverty Profile

	Incidence				Depth				Severity			
	1985	1988	1991	1994	1985	1988	1991	1994	1985	1988	1991	1994
Philippines	37.4	31.1	32.0	29.2	11.2	8.2	9.0	8.0	4.6	3.1	3.6	3.1
NCR	4.4	3.1 (-2.44)	1.5 (-3.55)	1.3 (-0.90)	0.8	0.6 (-1.66)	0.3 (-3.09)	0.2 (-1.16)	0.2	0.2 (-1.05)	0.1 (-2.63)	0.0 (-0.94)
Region I	35.5	32.4 (-3.02)	32.8 (1.09)	29.3 (-2.02)	8.8	6.9 (-4.49)	7.8 (1.65)	6.8 (-3.25)	3.0	2.2 (-4.41)	2.7 (2.07)	2.3 (-3.54)
Region II	47.8	36.5 (-4.22)	39.8 (0.02)	35.9 (-0.98)	14.1	10.1 (-4.05)	11.6 (-0.09)	9.3 (-1.47)	5.7	3.8 (-3.76)	4.7 (0.36)	3.4 (-1.69)
Region III	19.0	17.8 (-1.22)	18.2 (0.37)	17.0 (-1.23)	4.1	3.3 (-2.64)	3.6 (0.78)	3.8 (-0.03)	1.3	0.9 (-3.00)	1.1 (1.46)	1.3 (0.08)
Region IV	33.8	30.1 (-3.11)	24.4 (-4.24)	20.2 (-3.67)	9.4	8.0 (-2.93)	6.0 (-4.16)	4.9 (-3.63)	3.8	3.0 (-2.71)	2.2 (-3.53)	1.7 (-3.29)
Region V	53.2	47.9 (-3.07)	50.0 (1.75)	44.4 (-2.94)	15.8	12.7 (-4.19)	14.8 (3.38)	13.6 (-2.27)	6.5	4.6 (-4.60)	5.9 (3.65)	5.7 (-1.21)
Region VI	46.5	30.6 (-8.29)	31.1 (0.04)	28.7 (-1.72)	12.6	6.9 (-9.11)	7.6 (1.36)	6.0 (-3.43)	4.8	2.2 (-8.41)	2.6 (1.82)	1.8 (-3.84)

Table 4. (continued)

	Incidence				Depth				Severity			
	1985	1988	1991	1994	1985	1988	1991	1994	1985	1988	1991	1994
Region VII	57.4	47.7 (-5.16)	48.3 (0.85)	41.9 (-4.10)	20.5	14.7 (-6.56)	16.0 (1.76)	13.1 (-4.20)	9.3	6.2 (-6.02)	7.1 (1.98)	5.6 (-3.93)
Region VIII	61.5	53.2 (-3.52)	51.8 (-0.60)	51.9 (-0.21)	21.9	16.3 (-5.38)	16.3 (0.50)	15.9 (-1.17)	10.4	6.6 (-5.96)	6.9 (1.04)	6.7 (-1.21)
Region IX	45.7	38.3 (-2.95)	43.2 (1.93)	44.3 (-0.29)	13.9	10.9 (-3.01)	13.2 (1.94)	13.0 (-0.64)	5.8	4.3 (-2.72)	5.5 (1.84)	5.4 (-0.49)
Region X	53.2	40.3 (-6.47)	50.4 (4.65)	47.5 (-1.43)	18.9	11.5 (-8.12)	16.4 (5.49)	15.1 (-1.26)	8.7	4.5 (-7.67)	7.0 (5.09)	6.2 (-1.51)
Region XI	44.2	35.3 (-4.71)	38.6 (2.23)	31.6 (-4.37)	13.5	10.1 (-4.52)	11.2 (1.74)	8.5 (-4.27)	5.6	4.0 (-3.75)	4.4 (1.05)	3.2 (-3.89)
Region XII	36.9	31.7 (-2.98)	43.1 (5.26)	43.3 (2.07)	8.7	7.5 (-2.31)	11.9 (5.37)	11.1 (-2.26)	2.9	2.6 (-1.74)	4.3 (4.60)	4.0 (-4.2)

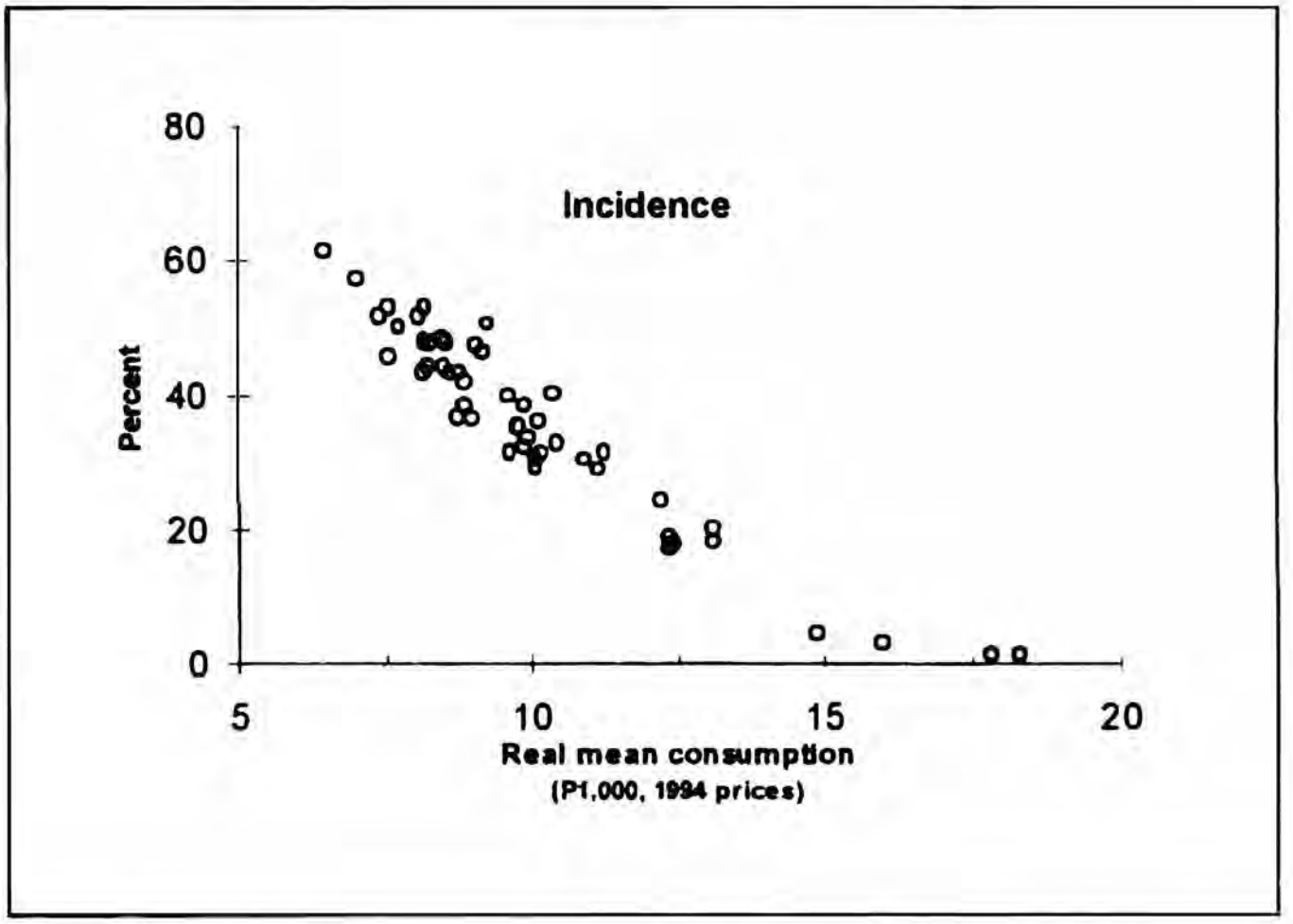

Figure 3. Mean Consumption vs Poverty.

of consumption growth on 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:

$$H_t/H_{t-1} = \underset{(8.21)}{1.990} - \underset{(-4.43)}{1.218}\,(C_t/C_{t-1}), \qquad R^2 = 0.33$$
$$\text{Mean of dep. var.} = 0.921$$

$$PG_t/PG_{t-1} = \underset{(7.27)}{2.504} - \underset{(-4.66)}{1.527}\,(C_t/C_{t-1}), \qquad R^2 = 0.35$$
$$\text{Mean of dep. var.} = 0.906$$

$$DSM_t/DSM_{t-1} = \underset{(5.74)}{2.907} - \underset{(-3.99)}{1.925}\,(C_t/C_{t-1}), \qquad R^2 = 0.28$$
$$\text{Mean of dep. var.} = 0.894$$

Evaluated at mean values (mean of indepvar = 1.046), the implied elasticities of the poverty measures with respect to per capita consumption are −1.7 for the incidence (head-count) index, -2.0 for the depth (poverty-gap) index, and −2.3 for the severity (distribution-sensitive) measure. The higher absolute values of the elasticity for poverty measures that ae 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 reasonably comparable data based on national household surveys for 67 countries (of which 42 had at least two surveys during the period since 1980) and employing US$1 a day poverty line (in 1985 purchasing power parity), Ravallion and Chen (1997) estimated the elasticity to be −3.1 for the incidence index and −3.7 for the poverty-gap index. 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*[11]. Indeed, the (above) regressions of the rate of

[11] It should be noted, however, that the choice of poverty lines may partly account for the difference in the elasticities obtained in this paper and those by Ravallion and Chen. Kakwani (1993a) in fact conjectured that the elasticity of poverty has to do with the density of people around the poverty line: the larger the difference of the poverty line from the mode, the smaller the absolute magnitude of the poverty elasticity.

change in poverty on the rate of growth of real per-capita consumption could account for only 28-35% of the observed variation in poverty changes across regions during the second half of the 1980s and early 1990s.

CONCLUDING REMARKS

The new evidence on poverty, redistribution, and growth (recession) presented in this paper shows that the Philippines is not an exception to the usual story about growth and poverty reduction in East Asia. As in East Asia, poverty in the Philippines is responsive to growth. Furthermore, growth does not tend to be inequalizing. The results of the decomposition analysis show that the growth component accounted for a proportionately greater share of the poverty change during the period of relatively rapid growth (1985-1988), as well as during the entire 1985-1994 period. Moreover, when the increase in mean consumption was significant (1985-1988 and 1991- 1994 period. Moreover, when the increase in mean consumption was significant (1985-1988 and 1991-1994), the redistribution component was negative, indicating that the redistribution augmented the favorable effect of growth on poverty. On the other hand, when consumption stagnated during a period of high inflation (1988-1991), the redistribution component was positive and accounted for the bulk of the observed increase in poverty. This shows that economic stagnation hurt the poor mainly through its negative effect on the distribution of household welfare.

It appears then that the main reason for the relatively high poverty in the Philippines is primarily the short duration of growth and the slowness of this growth. What the relatively fast growth – sustained for ovr 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 (and unlikely to be eroded by the region's financial crisis).

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 1997a). 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.

ANNEX
ESTIMATING CONSISTENT REGIONAL POVERTY LINES

The regional poverty lines constructed in this paper embed the desirable consistency feature of a poverty norm, i.e., poverty lines are fixed for various population subgroups and periods in terms of the level of living they imply.[12] 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.

The Family Income and Expenditures Survey (FIES) contains only data on expenditure items, not quantities and/or prices of these items. Retail food prices periodically collected by the national Statistics Office were used to extract the information on quantities by food items from the FIES food expenditures. This information was then translated into calories using the food composition tables recommended for use in the Philippines by the Food and Nutrition Research Institute. Some expenditure items reported in the FIES could not be translated into caloric units owing to the absence of relevant price information. For these items, it was assumed that their caloric contribution was the same as the average calorie per peso of expenditure for all food items with price (or quantity) information. The benchmark information pertains to 1994.

Let K^r be the required calorie per persons (i.e., the calorie norm of 2,000 kilocalories/day) and K^* be the total calories derived from all food items for the x percentile (say, third decile) of the expenditure distribution. It is expected that $K^* < K^r$; otherwise, a lower percentile would have to be chosen. In practice, since the relevant prices are not available for some of the FIES food items, K^* would have to be estimated in two stages. The first stage requires estimating the total calories from 50 food categories with price information. This total, K, is then adjusted for the caloric contribution of the remaining food items by dividing it with the ratio (v) of expenditures for food items with price information to total

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

food expenditures for the reference "household." Based on the 1994 FIES and NSO retail price surveys, the value of v is about 0.95; the ratio of K^r to K^* (for the reference household) is about 1.38.

The bundle of food items associated with K (and hence with the reference household) would then have to be scaled up so that $K^* = K^r$. This is done by multiplying each of the food items by the required-to-actual calorie ratio, i.e.,

$$q_i^r = q_i(K^r/K^*), \quad i = 1,\ldots,m$$

where m is the set of food items with price information. The cost for region j of purchasing this food bundle is:

$$C_i = \sum_i \bar{p}_{ij} q_i^r,$$

where p_{ij} is the simple average price of food item i in region j (i.e., average of provincial prices in region j). Note that C_i is not the per capita food expenditure satisfying the calorie norm K^r since certain FIES food items have no corresponding prices in the NSO retail price surveys. By assuming that the caloric contribution of these items is the same as the average calorie per peso of expenditure for all food items included in C_i, the *food poverty line* per capita in region j can be calculated a:

$$z_j^f = C_j/v$$

Obtaining the nonfood component of the poverty line requires estimating the parameters of the quadratic "almost ideal" demand model (Ravallion 1994):

$$s_i = a + b_0 \ln(y_i/z_f^f) + b_1 (\ln(y_i/z_f^f))^2 + \sum_{j=1}^{n} F_j D_{ij} + x_i p + v_i$$

where

s_i = food share in total household expenditure
y_i = per capita consumption (food plus nonfood) expenditure
z_j^f = food poverty line in region j
D = dummy variables for regions as well as urban and rural areas (intended to capture differences in relative prices, levels of public services, and other unobserved, spatially varying factors)
x = vector of other exogenous variables (including demographic characteristics and their interactions with expenditure)
v = error term

The value of the intercept a represents the average food share for those households that can just afford the food basic needs, i.e., those for whom $y_i = z^f$.

The *regional* poverty line, z_i, can then be estimated as:

$$z_i = z_j^f (2 - \hat{a}_j)$$

where

$$\hat{a}_i = \hat{a} + \bar{x}_r\hat{p} + \hat{F}_j$$

and x_r gives the mean demographic characteristics of the reference household group.

A random sub-sample (one-fourth) of the *national* 1994 FIES was used in estimating the above model. Table A1 summarizes the parameters of the estimated model, including the means for the poorest 30% nationally. Table A2 gives the estimates of regional poverty lines. The thresholds are held fixed in real terms over time, using the consumer price index for food as deflator (inflator).

Table A1. Parameter Estimates of "Almost Ideal" Demand Model

Variable Name	Definition	Coefficient	t-ratio	Mean for poorest 30%
Constant		0.74010	42.13	
LNY	ln (ratio of per capita expenditure to food poverty line)	-0.11320	-11.41	0.054
LNY2	LNY squared	-0.00426	-1.50	0.093
AGE	Age of household head	-0.00133	-2.07	46.084
AGE2	AGE squared	0.00001	1.70	2303.969
MALE	Dummy, household head is male	-0.00170	-0.33	0.895
EDUC1	Dummy, household head completed elementary	-0.00979	-2.62	0.291
EDUC2	Dummy, household head attended high school	-0.01979	-5.06	0.208
EDUC3	Dummy, household head attended college	-0.03682	-6.70	0.030
EDUC4	Dummy, household head is a college graduate	-0.04424	-7.24	0.005
MARRIED	Dummy, household head is married	0.00787	1.56	0.872
AGR1	Agriculture dummy	0.01482	3.60	0.679
MANU	Manufactury dummy	0.01234	2.16	0.032
FIN	Finance dummy	-0.00692	-0.69	0.003
TRADTRAN	Trade & transport dummy	0.00603	1.05	0.049
OTHIND	Other-industry dummy	0.00178	0.42	0.117
CH06	Members aged 0-6 years	-0.00507	-2.69	1.340
CH714	Members aged 7-14 years	-0.00036	-0.22	1.578
CH1524	Members aged 15-24 years	-0.01056	-5.34	0.948
MORES 25	Members aged more than 25 years	-0.00657	-2.225	2.139
CH06Y	CH06 x LNY	0.01255	3.99	-0.020
CH06Y2	CH06 x LNY2	-0.00624	-3.896	0.140

Table A1(continued)

Variable Name	Definition	Coefficient	t-ratio	Mean for poorest 30%
CH714Y	CH714 x LNY	-0.00295	-1.08	0.002
CH714Y2	CH714 x LNY2	-0.00070	-0.57	0.163
CH1524Y	CH1524 x LNY	0.00258	0.83	0.077
CH1524Y2	CH1524 x LNY2	-0.00093	-0.73	0.084
MORE25Y	MORE25 x LNY	-0.00739	-1.99	0.129
MORE2572	MORE25 x LNY2	0.00221	1.84	0.192
URBAN	Dummy, urban area	0.00115	0.37	0.358
TOTEMP	Employed household members	0.00505	3.21	1.604
REG 1	Ilocos Region dummy	-0.02438	-3.62	0.055
REG 2	Cagayan Valley dummy	-0.01269	-1.66	0.040
REG 3	Central Luzon dummy	-0.01364	-2.56	0.053
REG 4	Southern Tagalog dummy	-0.01996	-4.01	0.092
REG 5	Bicol dummy	-0.02325	-3.50	0.094
REG 6	Western Visayas dummy	-0.00887	-1.49	0.099
REG 7	Central Visayas dummy	0.00995	1.60	0.114
REG 8	Eastern Visayas dummy	0.00381	0.52	0.080
REG 9	Western Mindanao dummy	-0.00716	-0.94	0.068
REG 10	Northern Mindanao dummy	-0.03075	-4.54	0.097
REG 11	Southern Mindanao dummy	-0.00502	-0.81	0.083
REG 12	Central Mindanao dummy	-0.02647	-3.11	0.048
REG 13	Cordillera Autonomous Region dummy	-0.04087	-4.17	0.018
REG 14	Autonomous Region of Muslim Mindanao dummy	-0.01953	-2.15	0.052
	Adjusted R Square	0.0549		
	F	174.947		

Table A2. Regional Poverty Lines

Region	1985	1988	1991	1994
NCR	2476	3095	4754	6494
REG 1	2972	3325	4964	6415
REG 2	3113	3355	4948	6250
REG 3	3036	3564	5353	6679

Table A2 (continued)

Region	1985	1988	1991	1994
REG 4	2977	3278	502	6245
REG 5	2702	3049	4717	5882
REG 6	2574	2899	4551	5603
REG 7	2994	2793	4578	5685
REG 8	2849	3148	4677	5965
REG 9	2673	2970	4532	5654
REG 10	3039	3286	4794	6039
REG 11	3066	3329	4595	5713
REG 12	2699	3042	4641	5808
CAR		3504	5246	6679
ARMM			4765	5933

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