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Issues on counting the poor

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The recognition that poverty reduction is the cornerstone of development efforts, coupled with the global commitment to meeting the Millennium Development Goals, has brought about much interest in monitoring data on poverty across countries (Table 1). Efforts in reducing poverty involve defining and measuring the extent of poverty, providing a profile of the poor, as well as tracking changes in poverty through time (Reyes 2002). An analysis of the reduction in poverty can be attributed to growth, redistribution, and interaction effects (Datt and Ravallion 1992). For instance, holding inequality constant, economic growth in the period 2000 to 2003 reduced the proportion of households in the Philippines that are poor by 4.3 percent. The growth-induced decline in poverty, however, was partially countered by inequality and its interaction with growth, which subsequently drove up the household

poverty rate by 1.3 percent. Hence, the net effect led only to 3.05 percent reduction in the household poverty incidence in the Philippines (from their 2000 levels of 27.45% to the 2003 rates of 24.41%).

Looking at the figures in Table 1 or at the downward and upward swings in the official estimates of the proportion of poor persons in the Philippines from 2000 to 2006 as shown in Figure 1, policymakers and the public, in general, may mistakenly think that obtaining such figures is a trivial exercise. In reality, poverty statistics are elaborately obtained and there are continuing discussions about what constitutes the proper measurement of poverty.

The National Statistical Coordination Board (NSCB), which releases the official poverty

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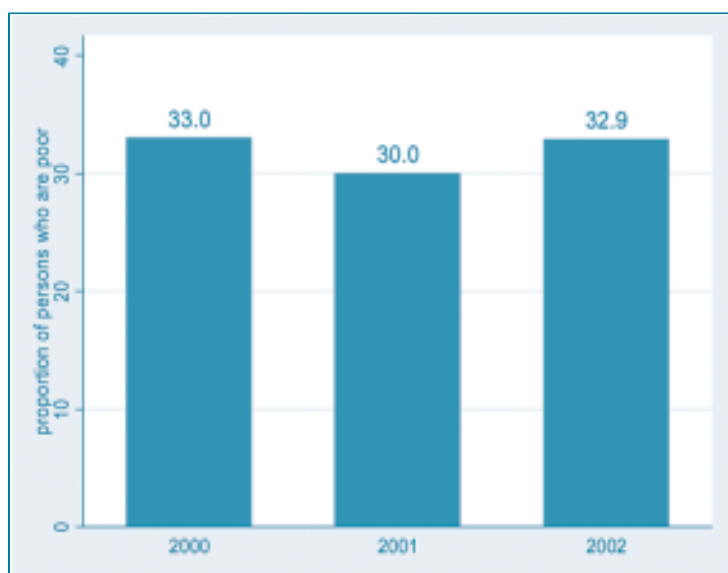
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Table 1. Latest data on proportion of the population below poverty line in selected East Asian countries

Country	Poverty Line	
	National Poverty Line	\$1 (PPP) a day
Cambodia	34.7 ³	18.5 ³
China	2.0 ⁵	10.8 ³
Indonesia	16.6 ⁵	7.7 ¹
Lao PDR	32.7 ²	28.8 ¹
Malaysia	5.1 ¹	0.0 ³
Philippines	32.9 ⁴	13.2 ²
Thailand	9.81	0.01
Vietnam	19.53	8.43

Notes: 1 =2002; 2= 2003; 3 =2004; 4=2006 5= 2007.

Figure 1. Headcount poverty rates in the Philippines, 2000–2006



Source: National Statistical Coordination Board

statistics in the Philippines every three years based on the *Family Income and Expenditure Survey* (FIES) conducted by the National Statistics Office (NSO), has a Technical Committee on Poverty Statistics to regularly

examine the official methodology and recommend changes in the measurement system, as needed.

A credible poverty measurement system is essential in order to develop the proper policy instruments for reducing poverty. Three essential steps comprise poverty measurement: (a) identifying an indicator of the welfare of households (and consequently all members of the household); (b) setting a poverty line, a minimum acceptable standard of that welfare indicator; and (c) aggregating the poverty data. A number of issues, however, remain the subject of debate regarding each of these steps. This *Policy Notes* discusses these matters to help the public understand how careful the analysis of poverty statistics should be, particularly in making comparisons across time and space.

Identifying an indicator—consumption, income, or other indicators?

The commonly used welfare indicators are monetary measures, either based on household income or household consumption. Household income is obtained by adding up income from all sources, including employment, social transfers, home production, informal support, income from rent, and the like. Aggregated consumption/expenditure, meanwhile, consists of adding up expenditures of items purchased from market sources and items obtained from other sources using imputed values at local market prices. Con-

sumption and income data are sourced from household surveys (and not censuses), which are designed to be representative of the household population in a country. In view of this, the resulting poverty statistics can only be released at national levels, or at best, at some subnational disaggregation such as regions.

For instance, in the Philippines, about 50,000 households are surveyed every three years for the FIES, with the resulting official poverty statistics found to give precise estimations only at the regional level. For the Philippine Statistical System (PSS) to generate reliable poverty statistics even at the provincial level, the current sample size of the FIES has to be multiplied by at least four times. Thus, local government units (LGUs) conduct their own surveys or monitoring systems to be able to have a sense of the state of poverty in their respective areas. Results from these, however, are incomparable unless the surveys and monitoring systems are done with standard protocols and in the same reference period.

So what is the better indicator?

On the one hand, consumption-based measures of poverty are viewed by economists as providing a more adequate picture of well-being than those based on income, especially in low- or middle-income countries. Income generally fluctuates from year to year and rises and falls in the course of one's lifetime whereas consumption remains relatively

stable. In addition, consumption is generally viewed to be more accurately measured than income. Survey respondents may be more able and willing to recall what they spent rather than what they earned, especially if more detailed questions jog or push the respondent's memory. Reported income is also likely to be underreported due to memory recall biases, reluctance to reveal accurate information for tax purposes or because some of the income may be from illegal sources. In addition, the accuracy of certain components of income such as agricultural income may be difficult to defend.

On the other hand, the extent of bias in income measurement is likely to be high on the upper tail of the income distribution, whose effect is not of particular concern in poverty analysis. Salaried and fixed income earners can also accurately tally their incomes (perhaps even better than their expenditures). The extent and direction of the bias of expenditure is also unclear: the possibility of prestige bias on the part of the poor cannot be discounted. Even the issue of jogging memory from the use of detailed questionnaires may have its limitation: respondents may suffer from information fatigue after hours of being asked information on their expenditures. The entire FIES module takes five hours of interview per household, with the household visited twice—in July, to obtain the first semester information, and in January of the following year to get the second semester information. There are also

less number of sources of income than items for consumption—thus, it is easier to collect income data. There are also other issues regarding aggregating expenditures, especially on how to handle durable goods and how to measure home production and home services. Moreover, because expenditure data may be captured through different means like the recall and diary methods, varying experiences in the resulting aggregates have been noted such as in the Cambodian case (Knowles 2008).

In view of the above, it is far from being clear whether a consumption/expenditure-based measure of poverty is a better measure of welfare than an income-based measure. What is clear at this point is that there is no perfect indicator of well-being. Nonetheless, while the debate is far from being settled, theoretical and practical arguments seem to favor consumption over income. A global survey conducted by the United Nations Statistical Division (UNSD) in 2004–2005, for instance, showed that of 84 respondent countries, half use expenditure (including Cambodia, Laos, Thailand, and Vietnam), 30 percent use income (including China, Malaysia,¹ and the Philippines), and 12 percent use both.

Some national statistical systems and private organizations have also been tracking poverty

¹ Malaysia uses household income as its official poverty indicator but considers a poverty line that varies according to the household composition. China and the Philippines (and all other countries that have welfare indicators using income data) use per capita income.

through the use of nonmonetary indicators. The Philippines' Social Weather Stations (SWS), for one, comes up with self-rated poverty figures (Mangahas 2004) where each respondent surveyed is shown a card with a line running across it. Below the line is marked "poor" and above the line, "nonpoor." Each respondent is asked "Where would you place your family in this card?"

Other systems such as BPS Statistics Indonesia also use a composite poverty index for all households taken in their census based on nonmonetary indicators that include, among others: floor size per capita, type of floors in dwelling, toilet facility, source of drinking water, type of lighting, type of fuel, household's ability to buy meat/chicken/milk, frequency of eating, ability to go to a doctor, main occupation of household head, and education of household head. The resulting poverty index is meant to identify very poor, poor, and nearly poor households in Indonesia, complete with their addresses, in order for government to provide these households with unconditional direct transfers (Suhariyanto 2008).

Setting poverty lines—the various methods

For most welfare indicators, one has to define a poverty line or the value of the welfare indicator deemed necessary to maintain a minimal standard of well-being. For nonmonetary indicators like size of floor area per capita where a household dwells, interna-

tional recommendations are set at eight square meters as the poverty line. For monetary welfare measures based on income or consumption, the poverty line represents what is required to purchase a bundle of essential goods (typically food and nonfood items).

\$1 PPP line

A well-known monetary poverty line used to monitor global poverty is the \$1 purchasing power parity poverty (PPP) line. This poverty line essentially means converting the equivalent of one US dollar to a local currency based on 1990 rates (using PPP exchange rates), and updating this by inflation. The PPP exchange rates are essentially the cost of living indices among countries. The first of the Millennium Development Goals (MDGs) adopted by the United Nations in 2000 is to have the proportion of persons with income less than a dollar a day brought down by half of their 1990 levels by the year 2015. The World Bank is currently monitoring global poverty using this poverty line.

Criticisms, however, have been raised against this approach. Reddy and Pogge (2008), for instance, point out that the use of \$1 poverty lines is not adequately anchored on the real cost requirements of purchasing basic necessities. The World Bank has thus come up recently with global poverty estimates that have been revised upward, incorporating new PPP exchange rate data from the 2005 International Comparability Programme, suggesting

that poverty has not been reduced as much as previously thought of (Chen and Ravallion 2008). The new \$1.25 PPP poverty line for the year 2005 is considered to be the equivalent of the earlier 1993 poverty line of \$1.08. The Asian Development Bank (ADB) also came up with its own set of poverty estimates for Asia using its own benchmark of what constitutes a poverty line for Asia, i.e., \$1.35 (ADB 2008).

Countries may have their own sense of what their poverty line is; hence, they may have their own ways of setting their national poverty lines. While there have been efforts toward adopting a standard methodology in the setting of a poverty line, there has been no full consensus because of the belief that ultimately, poverty lines are somewhat arbitrary and resonate with social norms. Yet, there is a common understanding of what represents a minimum standard of living in society. The differences in methodologies in coming up with the poverty line (as well as the choice of the welfare indicator and the approach for data capture) across countries make poverty comparisons with national poverty lines quite problematic.

Absolute poverty lines

In developing countries, the poverty lines used for measuring monetary poverty are “absolute” poverty lines based on a fixed welfare standard that is merely updated across time by price changes, and whose differing nominal values across subnational areas

merely reflect cost of living differences. There are two fundamental issues regarding the use of an absolute poverty line: (a) the referencing problem, i.e., what is meant by minimum basic needs, and (b) the identification problem, i.e., how the amount necessary to achieve these minimum basic needs is estimated.

Philippines' CBN approach

The commonly used methodology in developing countries, including the Philippines, for setting absolute poverty lines is the cost-of-basic needs (CBN) approach. This methodology entails the use of food consumption bundle, anchored on calorie requirements, as an artifice to determining the cost of the minimum food nutritional (calorie) requirements. This is the food component of the poverty line, often called the food poverty line (FPL). A nonfood allowance based on the nonfood budget shares of poor households is then added to the FPL to obtain the poverty line.

The Philippines differs in its implementation of the CBN approach by its adoption and use of "low-cost" menus for rural and urban areas in each region as the artifice for estimating the FPL. All other countries that adopt the CBN approach use a basket of items. The menus are valued with provincial prices to come up with provincial urban/rural FPLs. These menus meet the 100 percent Recommended Dietary Allowance (RDA) adequacies for energy and protein as well as the 80 percent RDA adequacies for other nutrients

and vitamins. The Food and Nutrition Research Institute (FNRI) of the Department of Science and Technology (DOST) prepared these low-cost menus which were validated through regional consultations. The menus take into account the availability of food commodities that are cheap and nutritious. Some costly food items such as milk and pork liver are also included in the menu when these food items are the only sources of the nutrient requirements, say for iron adequacy. The menus are attractive to the extent that they can be formulated to satisfy other nutrient requirements besides calories.

As pointed out by David and Maligalig (2002), two major criticisms have been raised by experts against the use of the menus for estimating the FPL: the level of accuracy of the resulting FPLs, and the comparability or consistency of the FPLs. As regards accuracy, the authors point out that *"the main issue is whether the cost of the one-day menu multiplied by 365 will come close to the total annual food budget of the poor Filipino family or individual."* Regarding consistency, Ravallion (1998) points out that the poverty lines used across time and space should be the same value, except for inflation and cost of living adjustments, respectively, in order to be the same yardstick for measuring poverty. For varying nominal poverty lines to be consistent, this means that two persons with the same level of welfare are treated the same way according to the poverty measurement system.

There is an argument posed that the use of a single nutrient benchmark of 2000 kilocalories per person per day in the regional urban/rural menus results in having one standard of welfare across the country. However, there is lack of assurance that the menus reflect the same standard of living across the country. Differences in the menus across the country have substitution effects interspersed with effects of regional preferences that could include issues of qualitative differences.

There are difficulties regarding maintaining the same level of utility to make the artifact comparable and consistent even if a single nutrient benchmark of 2000 calories per person is used across the country. People in richer areas tend to get their energy and protein from higher quality and higher-priced sources. Hence, the use of menus will undoubtedly capture such quality differences. As David and Maligalig (2002) argue, such differences cannot be merely eliminated by deflation, not even with the use of spatial price indices, even if these spatial price indices are somehow built into the menus.

Common CBN approach

The more common practice in implementing the CBN approach is to select a single food basket for all the population groups to ensure consistency in terms of welfare standards. There is, however, diversity in practices for selecting the number of items used in the single food basket. In the Asia-Pacific region,

some countries use as low as less than a dozen items (Myanmar, 10; Bangladesh, 11) but others may use a hundred or more food items (Republic of Korea, 100; Cambodia, 150), as was indicated in the 2004–2005 Global Survey undertaken by the UN Statistics Division. Typically, to address the referencing problem, the average food composition of a certain “reference” group is taken (for example, the second quintile, or those around what is thought to be the poverty line, etc.). Studies by Molano et al. (2002) and Pedro et al. (2002) show that having a reference population for a menu matters: the FPLs they developed for all income groups were much higher than those derived using the bottom 30 percent of the income distribution.

A number of studies have looked into either revising the menu (e.g., Florentino 2006) or revising the weights used in the menu (e.g., Castro et al. 2007) by way of the test for revealed preferences. Castro et al. (2007) find that most of the provinces in the Philippines pass the test of revealed preferences. Following the same line of thinking of Ravallion and Lokshin (2003), the results of Castro et al. (2007) suggest that the menus do not yield consistent FPLs, and that there is no way of adjusting the weights for the menus to yield consistent FPLs.

Table 2 shows the results of an exercise to estimate the FPLs with the use of a nationally representative food basket sourced from the

2000 FIES.² The quantities of each item in the reference food basket were established by considering the consumption pattern of a reference population, comprising households belonging to the second to the fourth deciles of the income per capita distribution. For each of the 62 food items, the average quantities consumed per person were scaled up³ in such a way that the resulting basket provided a total of 2,100 kcal per person per day. The cost of the basket was calculated

using the median unit prices for each item paid by the reference population.

Total poverty lines are also calculated using the current official approach of estimating nonfood requirements indirectly. Although absolute poverty lines are supposed to be unchanging, these have to be reexamined occasionally in the wake of changing distributions of consumption and income, i.e., are they for instance still meaningful in the new

millennium given the changing consumption habits? With consistency issues raised against the menus, the availability of quantity and unit prices in the 2000 FIES and in subsequent rounds of the FIES, and the need to work toward international comparability of methodologies in setting poverty lines, the NSCB Technical Committee on Poverty Statistics can then decide to shift to the use of food bundles to settle the issue of inconsistency of

poverty lines generated from the menus. A consistent benchmark based on quantities of food items can actually be derived although there are remaining issues about the quality of information obtained from the unit prices sourced from the FIES. Price levels may be sourced from other NSO surveys meant to generate CPI. These price data, together with a spatial price index (that may be formed from the FIES to have a sense of cost of living differences), can be used to determine baseline and price updates.

Table 2. Poverty statistics derived from food bundle and food menu approaches in estimating 2000 food poverty lines (FPLs)

Approach for FPL Estimation	Selected Poverty Statistics	Urban	Rural	National
Food bundle	FPL	6,574	6,474	
	Subsistence poverty incidence (%)	3.09	17.13	10.47
	Total poverty line	9,896	9,537	
	Poverty incidence (%)	10.30	38.99	25.28
Menus	FPL	8,684	7,716	
	Subsistence poverty incidence (%)	6.11	25.29	15.82
	Total poverty line	13,541	11,102	
	Poverty incidence (%)	17.84	47.71	32.96

² Although the 2000 FIES collected data on 149 different food items eaten at home, data were available in standard quantity units for only 124 of these 149 items. For 90 food items, calories intake data could be generated, in conjunction with the FNRI's Food Composition Table. Not all the 90 goods with calorie equivalent data were, however, commonly consumed items by households belonging to the 2nd to the 4th deciles of the income per capita distribution, which was chosen as the reference population for the exercise. The choice of this reference population was based on the observation that poverty estimates across the past two decades have been within this range. The food bundle adopted here was based on 62 commonly consumed food items that accounted for nearly 80 percent of the food per capita expenses of the reference population.

³ Average calorie consumption for the reference population from the 62 items was 1,500 kcal per person per day.

In the UN's global survey, 53 out of 91 statistical systems reported making nonfood adjustments (with the rest not making specific nonfood adjustments to the FPL). Methods are even more diverse for such adjustments. About 38 percent use a basket of nonfood items, and service and price the basket. Fifty-four percent of the countries that make nonfood adjustments use an indirect method to estimate the nonfood component of the poverty line. The Philippines' official method involves estimating the average food share of household expenditure of households within a plus or minus 10 percentile band around the FPL within the income distribution, and subsequently taking the ratio of the food poverty line to this food share to obtain the total poverty line. While such approach is very practical, the weakness lies in the application of the estimation to each of the provinces. It may be possible that very few sampled households would fall in this band within a province.

Summarizing the poverty data

So far, the poverty rate or poverty incidence, i.e., the proportion of poor people, is the simplest way of summarizing poverty data. Data users, however, have to realize that it is not enough to compare poverty rates across areas because total population also varies across areas. For instance, some areas such as the Autonomous Region of Muslim Mindanao (ARMM) may have very high poverty rates but the number of poor persons in ARMM is actually much smaller than in some regions

where poverty rates are lower but where the total population is higher. Poverty rates also suffer from the inability to show the intensity of poverty and describe the severity of poverty. Other poverty measures such as the poverty gap and poverty squared gap are being monitored, respectively, for such purposes. However, these indices, especially the poverty squared gap, are not easy to interpret; hence, they are hardly used for practical field work.

Since poverty is a multidimensional phenomenon, various poverty indicators are also being monitored. Some studies, e.g., Gwatkin et al. (2000), have looked into developing a deprivation index, a weighted composite index of poverty indicators, by way of principal components analysis, and using this instead to monitor poverty. Such measures, while of academic interest, are not however of interest in practical field work because of the difficulty to interpret them.

Concluding remarks

As was earlier pointed out, there is much interest in poverty statistics since poverty reduction (and eradication) should be the ultimate goal of development. The public and private sectors, together with development partners and all concerned parties, ought to provide assistance to those who need help the most, and ensure that every member of society has at least minimum standards of well-being. Managing such efforts requires measuring poverty, and measuring poverty

well. Thus, improving methods for poverty measurement has to be grounded on the assurance that the resulting statistics are comparable across time and space so that they will become meaningful. 📄

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