



Comparing Poverty Across Countries: The Role of Purchasing Power Parities

KEY INDICATORS 2008 SPECIAL CHAPTER

HIGHLIGHTS

Asian Development Bank

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Table of Contents

- 1. Introduction 1
- 2. Purchasing Power Parities: Some Key Issues2
 - Purchasing Power Parities.....2
 - Purchasing Power Parities and International Comparisons of Poverty4
- 3. Compiling Purchasing Power Parities for Poverty Comparisons6
- 4. Purchasing Power Parity Estimates8
- 5. International Poverty Lines and Poverty Estimates 10
- 6. Prospects for Poverty Reduction: Some Scenarios 14
- 7. Concluding Remarks and Directions for Future Work 16
- References 17

List of Tables

Table 1	Market Exchange Rates and Purchasing Power Parities, 2005.....	3
Table 2	Forms of Purchasing Power Parities	7
Table 3	Comparison of Sample Quantities in the 2005 ICP Asia Pacific and Poverty-specific Price Surveys.....	7
Table 4	Comparison of Sample Qualities in the 2005 ICP Asia Pacific and Poverty-specific Price Surveys.....	8
Table 5	Comparison of Purchasing Power Parities (2005 Malaysian ringgit)	8
Table 6	Headcount Indexes: Percentage of Population Living Below the \$1.35 Per Day Asian Poverty Line	13
Table 7	Percentage of Population below the Asian Poverty Line (\$1.35 per day, 2005 PS PPP), 2005 and 2020	15

List of Figures

Figure 1	Comparison of Expenditure Shares or Weights of Food and Nonalcoholic Beverages (%).....	5
Figure 2	National Poverty Line versus GDP Per Capita, 2005 PPP \$, Annual	11

1. Introduction

The demand for internationally comparable estimates of poverty is considerable. Policy analysts, researchers, and international donor agencies often want to compare the incidence of poverty across countries. These international comparisons can be carried out globally, regionally, or even across two countries.

How does one make such international comparisons? In addition to nationally representative data on household expenditures, an international poverty line is needed that represents some predetermined threshold standard of living that is constant across the countries where poverty is to be compared.

How should such an international poverty line be chosen? By far the most widely used international poverty line is the United States (US) “\$1-a-day” poverty line introduced in the World Bank’s *World Development Report 1990: Poverty* (World Bank 1990). Comparing national poverty lines for a sample of 33 countries, World Bank researchers found the \$1-a-day poverty line to be “representative” of national poverty lines among low-income countries and proposed it as a common benchmark for internationally comparable estimates of poverty.

Crucially, the construction of the \$1-a-day poverty line (and corresponding estimates of poverty) is not based on market exchange rates, but on purchasing power parities (PPPs). PPPs are conversion factors that ensure a common purchasing power over a given set of goods and services. For example, in 2005 it took on average Rs44.10 to obtain \$1 in currency markets. But this does not mean that \$1 had the same purchasing power in the US as Rs44.10 did in India that year. In fact, the results of the 2005 round of the International Comparison Program (ICP) – a global statistical project that has been producing PPPs since 1970 – found that \$1 had the same purchasing power as Rs15.60 for the goods and services that make up household consumption in India (World Bank 2008). It should be obvious that converting \$1 either into Rs15.60 or into Rs44.10 will have a huge bearing on the resulting estimates of \$1-a-day poverty in India.

More generally, the precise value taken by PPPs can make a considerable difference to the estimates of poverty for any given international poverty line. Moreover, the value of the international poverty line itself depends on the value taken by PPPs. For these reasons, it is crucial to get the value of PPPs right.

Drawing on a research study on poverty-specific PPPs in which 16 developing member countries of the Asian Development Bank (ADB) took part (ADB 2008), the special chapter of *Key Indicators 2008* sheds light on how alternative approaches to compiling PPPs influence internationally comparable estimates of poverty. (The 16 countries are listed in Table 1.) These *Highlights* present that chapter's key findings.

2. Purchasing Power Parities: Some Key Issues

Purchasing Power Parities

In making an international comparison of an economic variable – say, for example, a comparison of gross domestic product (GDP) across countries – one must convert each country's values of the variable in question into a common currency. The simplest approach is to use market exchange rates to convert local currency values into the common currency, typically the US dollar.

However, the use of exchange rates has a drawback, because they do not necessarily reflect local currencies' purchasing power. In particular, market exchange rates can suffer from a “traded sector bias,” i.e., they are influenced by the prices of traded goods across countries, but not by the domestic prices of nontraded goods (Anand and Segal 2008).

PPPs provide a basis for converting local currencies into a common currency such that the differential purchasing power of the currencies with respect to a specific basket of goods and services is accounted for. At heart, PPPs are based on comparisons of prices of a selected set of products across countries. In the 2005 ICP, PPPs for the household final consumption expenditure component of GDP, or consumption PPPs for short, were computed in the following way. First, a basket of goods and services relevant for household consumption was identified. Second, the products in the basket were priced through a survey of retail outlets. Third, PPPs were generated at the “basic heading” level – i.e., a grouping of closely related products, for example, different varieties of rice or types of garments. Finally, basic heading PPPs were “aggregated” to generate a final set of PPPs. Crucially, the process of aggregation involves weighting basic heading PPPs by an appropriate set of expenditure weights, or shares. In particular, the expenditure shares should accurately reflect the relative importance of basic heading groups of products in consumption.

Table 1 compares the 16 Asian countries' market exchange rates in 2005 with PPPs from the 2005 ICP. The PPPs pertain to GDP and three of its major subcomponents.

Table 1 **Market Exchange Rates and Purchasing Power Parities, 2005**

Country	Exchange Rate (average local currency units per \$ in 2005)	Purchasing Power Parities			
		GDP	Household Final Consumption Expenditure ^a	Government Final Consumption Expenditure ^b	Gross Fixed Capital Formation
	(1)	(2)	(3)	(4)	(5)
Bangladesh	64.33	22.64	25.49	14.12	25.25
Bhutan	44.10	15.74	18.46	6.67	17.99
Cambodia	4,092.50	1,278.60	1,615.30	343.48	1,473.22
Fiji Islands	1.69	1.43	1.55	0.67	1.40
India	44.10	14.67	15.60	9.35	17.74
Indonesia	9,704.74	3,934.30	4,192.83	2,513.16	4,783.40
Lao PDR	10,655.20	2,988.40	3,741.62	927.20	3,774.99
Malaysia	3.79	1.73	2.11	0.75	1.68
Maldives	12.80	8.13	9.74	2.88	8.85
Mongolia	1,205.22	417.22	522.49	137.79	463.36
Nepal	71.37	22.65	26.47	13.54	25.15
Pakistan	59.51	19.10	20.71	10.14	25.99
Philippines	55.09	21.75	24.18	12.90	24.22
Sri Lanka	100.50	35.17	40.04	14.75	44.17
Thailand	40.22	15.93	17.47	10.63	16.89
Viet Nam	15,858.90	4,712.70	5,919.89	1,675.85	5,178.42

GDP = gross domestic product; PPP = purchasing power parity.

a Also referred to as individual consumption expenditure by households.

b Pertains to collective consumption expenditure by government.

Sources: PPPs from World Bank (2008); market exchange rates from IMF (2007).

There are two important features of the table. First, the PPPs are lower than market exchange rates in all cases. Second, PPPs vary by the particular aggregate that is being compared. For example, a PPP at the GDP level of Rs14.67/\$1 means that Rs14.67 has the same purchasing power as \$1 in terms of purchasing goods and services that make up GDP. However, if we were to focus on goods and services that make up household consumption, we arrive at a different PPP. In both cases, the PPPs for India are far lower than the market exchange rate of Rs44.10/\$1.

The general point is that the choice of the basket of goods and services is crucial for purposes of interpretation and use of a given PPP. In practice, PPPs at the GDP level are commonly used for comparing real incomes across countries. If instead the comparison involves standards of living across households, PPPs for household consumption expenditure would be more appropriate than PPPs for GDP.

Purchasing Power Parities and International Comparisons of Poverty

As noted in the introduction, PPPs are a crucial input in generating internationally comparable estimates of poverty such as the \$1-a-day poverty estimates. First, they are used for converting countries' national poverty lines into a common currency, thereby facilitating the selection of an international poverty line. For example, based on PPPs compiled by the 1993 round of the ICP, World Bank researchers updated the \$1-a-day poverty line as the median of poverty lines of 10 low-income countries (Chen and Ravallion 2001).

Second, once an international poverty line has been selected, PPPs are used to convert this line into local currency units. It is then a straightforward task to estimate the number of persons living in poverty based on nationally representative data on household expenditures.

But which set of PPPs should be used for poverty comparisons? As noted above, PPPs are available for comparisons of GDP and its various subcomponents. Among these, the PPP most naturally suited for poverty comparisons is that pertaining to household final consumption expenditures. These consumption PPPs are those that have been employed for developing the \$1-a-day poverty line and corresponding poverty estimates.

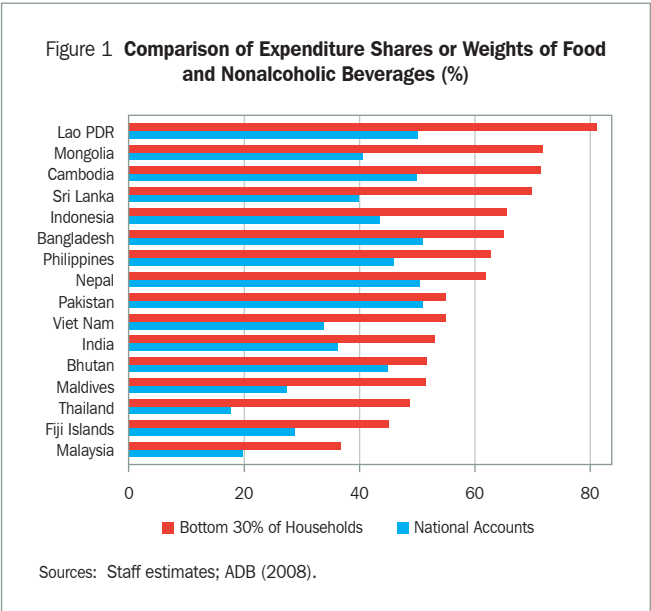
However, consumption PPPs are not ideal for generating comparable estimates of poverty. They may be inappropriate for poverty comparisons if poor households' consumption patterns are significantly different from those of the general population. Such a difference may be explained by two broad reasons.

First, poor households may consume different types of products from the general population, i.e., the basket of goods and services priced for compiling consumption PPPs may not match up well with the basket of goods and services consumed by the poor. Some of the differences in the products consumed by the poor and by the general population may be quality related. For example, while both the poor and nonpoor may consume rice, the former may consume a lower-quality variety than the latter. Alternatively, some products are consumed by only one group or the other – automobiles, for example. A further twist can appear if the prices paid by the poor versus the nonpoor differ in some systematic manner. In particular, to the extent that the poor and nonpoor purchase items in different quantities and/or at different types of retail outlets, one can expect the prices paid by the two groups to differ. For many products, the unit price may well decline as purchase quantities increase. Since the poor are less likely to be able to afford large purchase quantities, they may end up paying more per unit of the product. Conversely, if

the poor frequent fresh-produce markets as opposed to modern supermarkets – where the retail prices may well incorporate the costs of air conditioning, parking space for cars, and other amenities for shoppers – more often than the nonpoor, they may pay less.

Second, even if both groups consume identical products and purchase them in similar quantities and from similar retail outlets, they are likely to spend very different proportions of their total expenditures on these products. Thus for example, even if the poor and the nonpoor purchase and consume the same variety of rice and buy it in similar quantities and from similar retail outlets, the poor can be expected to spend a larger proportion of their total expenditures on rice than the nonpoor. Since PPPs are ultimately based on aggregating relative prices by expenditure shares, using the expenditure shares of the general population rather than those of the poor may well yield PPPs that are less than ideal for comparisons of poverty across countries.

Figure 1 presents expenditure shares, or weights for food and nonalcoholic beverages, in the 16 countries. Expenditure weights are provided for two different population groups in each country. The first is based on national accounts weights, i.e., weights are drawn from the national accounts and refer to the whole population in the country. The second is drawn from household expenditure survey data and is based on the expenditure patterns of individuals in the bottom 30% of the distribution of per capita expenditures. While the overlap between these individuals and those who are “poor” in



terms of a given absolute poverty line is unlikely to be perfect, the bottom 30% should capture the expenditure patterns of the poor better than the expenditure patterns of the entire population for any reasonable poverty line. As expected, the poor – defined here to be the bottom 30% – tend to spend a significantly larger share of their outgoings on food and nonalcoholic beverages. For example, the shares of food and nonalcoholic beverages are 65.6% and 51.1%, respectively, for the poor and for the general population in Bangladesh. More generally, the expenditure weights presented in Figure 1 show systematic and significant differences in the purchase patterns of the general population and of the bottom 30%.

In a nutshell, the practice of using consumption PPPs for international comparisons of poverty implies that the PPPs are derived via a list of products and associated prices that may not be representative of products consumed by the poor and the prices paid by them. Additionally, the consumption PPPs are derived using expenditure weights, or shares from the national accounts, i.e., they reflect the expenditure patterns of the general population and *not necessarily the poor*.

To what extent do these two factors affect the generation of international poverty lines and associated poverty rates? There can be no general presumption on this. For instance, pricing higher quality products may not pose a major problem if the relative levels of prices of items included in the ICP list are similar to the relative levels of prices of items commonly consumed by the poor. For example, if good quality rice costs Rs15 in India and RM2 in Malaysia, this implies a PPP of Rs7.5/RM1 on the basis of such rice. If at the same time, a much inferior quality rice costs Rs7.4 in India and RM1 in Malaysia, the PPP for that rice is Rs7.4/RM1. In this latter case, even though the better rice is not representative of the consumption of the poor, the PPP based on this item is a reasonable approximation to the PPP based on the inferior rice. Ultimately, the issue can be answered only by comparing PPPs compiled using different approaches, as discussed in the following section.

3. Compiling Purchasing Power Parities for Poverty Comparisons

In addition to consumption PPPs, the special chapter compiles two sets of poverty PPPs – i.e., PPPs developed expressly for the purposes of comparing poverty incidence across countries. The first of these poverty PPPs uses prices pertaining to household consumption and that were collected for the 2005 ICP Asia Pacific. Thus the underlying prices are the same as those used in

constructing the consumption PPPs. However, they are derived in the way suggested by the Poverty Advisory Group (PAG), a group of experts brought together by the Global Office of the ICP at the World Bank for the 2005 ICP. That is, they are derived using expenditure shares that reflect the expenditure patterns of the poor as opposed to the general population.¹ We call these ICP PPPs for short (the full form is in the second row of Table 2).

Full Form	Short Form	Type of PPP	Source of Prices	Expenditure Patterns
Household Final Consumption Purchasing Power Parities	Consumption PPPs	Consumption	2005 ICP Asia Pacific	General Population
International Comparison Program Poverty Purchasing Power Parities	ICP PPPs	Poverty	2005 ICP Asia Pacific	Poor Population
Poverty Survey Poverty Purchasing Power Parities	PS PPPs	Poverty	Poverty-specific price surveys	Poor Population

ICP = International Comparison Program; PPP = purchasing power parity; PS = poverty survey.

A second set of poverty PPPs relies, like the ICP PPPs, on the expenditure patterns exhibited by the poor; however, it uses prices collected by special “poverty-specific” price surveys carried out in the 16 countries. In contrast to the ICP survey of prices, the products priced by these surveys are those deemed by poverty analysts, price statisticians, and household expenditure survey statisticians from participating countries to be directly relevant to the poor. Moreover, these products have been priced in quantities in which the poor are likely to make their purchases, and at retail outlets that they are more likely to frequent. We call this second set of PPPs, PS PPPs for short (the full form is in the third row of Table 2).

There are significant differences between the 2005 ICP Asia Pacific and the poverty-specific price surveys in terms of product lists, item specifications and characteristics, and outlets. Table 3 shows that the 2005 ICP Asia Pacific

Product	Items Priced	
	2005 International Comparison Program Asia Pacific	Poverty-specific
Coarse rice	10 kg	1 kg
Beef, nonspecific cut	1 kg	250 g
Chilies – dried, red	100 g	50 g
Candle	1 piece from a pack of 4–6 candles	1 piece

Source: ADB (2008).

¹ The expenditure shares of the poor are derived from household expenditure survey data drawing upon Dupriez (2007). The poor are identified using an iterative process along the lines of Pradhan et al. (2001) and Deaton et al. (2004).

price surveys target purchases made in larger quantities. Table 4 shows differences in the quality of the products targeted for price surveys. Given such differences, one would expect that prices paid by the poor would be lower, reflecting the lower quality of the products purchased.

Table 4 Comparison of Sample Qualities in the 2005 ICP Asia Pacific and Poverty-specific Price Surveys		
Product	Items Priced	
	2005 International Comparison Program Asia Pacific	Poverty-specific
Rice	Coarse, brown, white, premium	Coarse, ordinary
Meats	Choice cuts, nonspecific cut	Nonspecific cut
Vegetables	Good quality	Low quality
Bicycle	Good quality with additional features	Cheap quality and basic features
Garments	Local popular brand, medium quality	Cheapest brand, low quality
Towel	"Top quality" and close to 100% cotton	"Cheap quality" and composed of coarse cotton with a thread count of 40 to 50

Source: ADB (2008).

4. Purchasing Power Parity Estimates

Table 5 presents the three estimates of PPPs with the Malaysian ringgit as the reference currency. Column 1 presents consumption PPPs. These are the same type of PPPs that would be used in the construction of the \$1-a-day poverty line if past practice were to continue. Columns 2 and 3 present ICP PPPs and

Table 5 Comparison of Purchasing Power Parities (2005 Malaysian ringgit)					
Country	Consumption PPP	Poverty PPPs		Difference (%)	
		ICP PPP	PS PPP	Consumption PPP vs ICP PPP	ICP PPP vs PS PPP
	(1)	(2)	(3)	(4)	(5)
Bangladesh	12.44	12.01	10.17	-3.5	-15.4
Bhutan	8.89	8.73	8.25	-1.8	-5.5
Cambodia	787.85	798.17	806.34	1.3	1.0
Fiji Islands	0.75	0.66	0.67	-11.3	1.6
India	7.50	7.33	6.42	-2.2	-12.4
Indonesia	2,025.54	2,009.00	1,595.89	-0.8	-20.6
Lao PDR	1796.49	1,893.06	1,923.62	5.4	1.6
Malaysia	1.00	1.00	1.00	-	-
Maldives	4.72	4.17	4.62	-11.5	10.8
Mongolia	253.59	239.19	255.07	-5.7	6.6
Nepal	12.62	12.19	11.79	-3.4	-3.3
Pakistan	10.06	9.75	9.05	-3.1	-7.1
Philippines	11.85	11.12	12.52	-6.2	12.6
Sri Lanka	19.07	18.01	15.97	-5.6	-11.3
Thailand	8.29	7.81	7.17	-5.8	-8.1
Viet Nam	2,872.04	2,794.57	2,351.89	-2.7	-15.8

- = not applicable.

ICP = International Comparison Program; PPP = purchasing power parity; PS = poverty survey.

Note: Some computations may not yield the exact figures shown above because of rounding.

Sources: Staff estimates.

PS PPPs. In both cases, household expenditure survey data have been used to capture the expenditure patterns of the poor.

How does one interpret the differences between the various PPP estimates? Consider, for example, what RM100 can be expected to buy in India. Based on the products considered for the 2005 ICP Asia Pacific, and assuming that the products are purchased in quantities that would reflect their share in national accounts, RM100 should yield in Malaysia exactly what Rs750 can purchase in India. If, though, we were still concerned with the ICP product bundle, but these were now purchased in quantities reflecting the expenditure patterns of the poor, RM100 would yield in Malaysia the same bundle that Rs733 would yield in India. Of course, this is not a very significant difference. Switching to the poverty survey product bundle would change things more dramatically, however. In this case, RM100 would yield in Malaysia the same bundle that Rs642 would yield in India.

The differences between consumption PPPs and ICP PPPs are not particularly large in many cases. In the cases of Bhutan, Cambodia, India, and Indonesia, they are around 2% or less, while in Fiji Islands, Lao PDR, Maldives, Mongolia, Philippines, Sri Lanka, and Thailand, they are 5% or more. But with the exception of Fiji Islands and the Maldives, the differences tend to be well under 10%.

When comparing the two sets of poverty PPPs – i.e., ICP PPPs and PS PPPs – in 10 out of 15 cases, the differences turn out to be larger than the differences between consumption PPPs and ICP PPPs. In 11 out of 15 cases, the direction of change is the same in going from consumption PPPs to ICP PPPs as from ICP PPPs to PS PPPs.

For example, compared to the 2.2% decrease in India's PPP estimates as one moves from consumption PPPs to ICP PPPs (column 4), the decrease in PPP estimates as one moves from ICP PPPs to PS PPPs is more than 12% (column 5). Thus, restricting attention to product specifications more in line with the products consumed by the poor, we find that RM100 should yield in Malaysia the same bundle that Rs642 can purchase in India. This can be compared with the Rs733 needed to purchase the ICP product list.

The switch to PS prices from ICP prices leads to large decreases (more than 10%) in the PS PPPs in Bangladesh, India, Indonesia, Sri Lanka, and Viet Nam. In contrast, the opposite happens in the case of the Maldives and the Philippines, where the PS PPPs increase by more than 10%. Clearly, the switch in the source of prices is associated with a number of large changes in PS PPPs.

5. International Poverty Lines and Poverty Estimates

Each of the three sets of PPPs described so far can be used to obtain internationally comparable poverty estimates. However, an international poverty line is needed. In the spirit of the World Bank's \$1-a-day poverty line based on 1993 consumption PPPs (Chen and Ravallion 2001), we set an "Asian poverty line" as the median of the national poverty lines of the countries considered here.²

To do this, we first assemble the national poverty lines of 15 of our 16 countries expressed in local currency units, and in per person per day terms. (The national poverty line for the Fiji Islands is omitted because it is expressed in per adult equivalent terms.) Next, the national poverty lines are converted into a common currency – the Malaysian ringgit – using PPPs. Since there are three sets of PPPs available – consumption PPPs, ICP PPPs, and PS PPPs – the precise value of the national poverty lines in terms of the ringgit will vary depending on the PPPs (except of course in Malaysia). Finally, for expositional purposes, we convert all monetary values into the US dollar.³

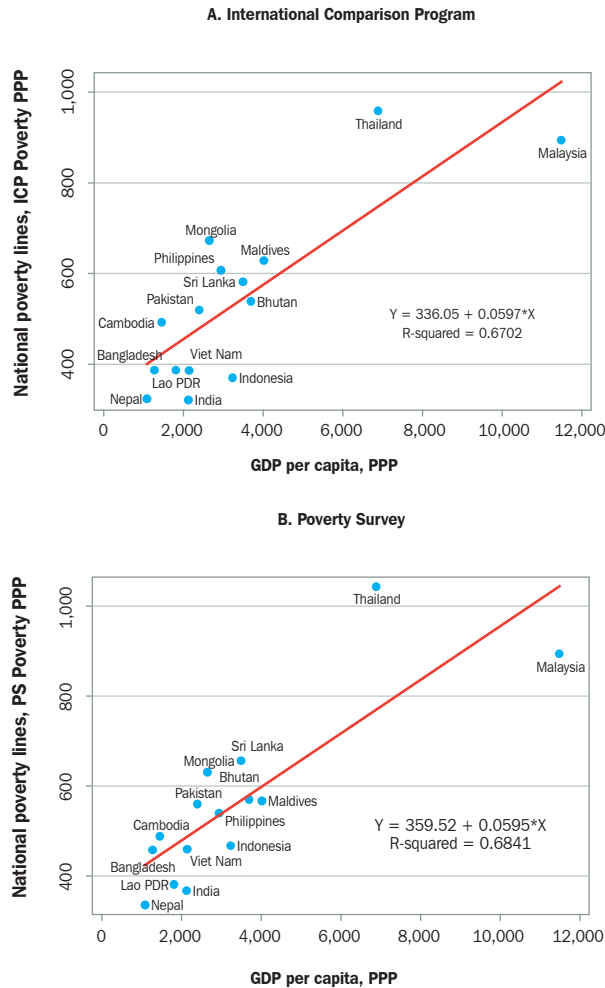
Figure 2 plots the country-specific poverty lines and the GDP per capita. Panel A pertains to poverty lines converted into Malaysian ringgit using ICP PPPs; panel B is based on PS PPPs. As may be seen, there is a tendency for national poverty lines to rise with income levels. As can also be seen, there is considerable variance in the value of poverty lines across countries. However, the variance falls somewhat if one omits the poverty lines for Malaysia and Thailand. Once this is done, the poverty lines of the other countries tend to be bunched around a range of almost \$0.90 and \$1.80 per person per day.

The median values of the remaining 13 countries' poverty lines turn out to be \$1.37 based on consumption PPPs and \$1.35 and \$1.34 based on ICP PPPs and PS PPPs, respectively. Thus, depending on the PPPs used, one will get a particular monetary value for the Asian poverty line.

² The term national poverty lines should not be treated as synonymous with "official" poverty lines of individual countries. Even when official poverty lines exist, their monetary value varies within countries; for example, by rural versus urban sector and/or by region, province, or state. The national poverty lines used here are obtained by averaging the various subnational poverty lines. Even when weighted by the corresponding subnational population shares, they may not yield the official poverty rate when applied to household expenditure survey data.

³ The conversion factor used is RM2.11/\$1 (World Bank 2008). This is the PPP conversion factor between the two currencies for household final consumption expenditures.

Figure 2 National Poverty Line versus GDP Per Capita, 2005 PPP \$, Annual



ICP = International Comparison Program; LCU = local currency unit;
PPP = purchasing power parity; PS = poverty survey.
Notes: GDP per capita is converted from 2005 RM to \$ using the PPP conversion factor for GDP of RM1.73/\$1 (World Bank 2008). National poverty lines are converted from 2005 RM to \$ using the PPP conversion factor of RM2.11/\$1. The regressions were run using poverty lines and GDP per capita expressed in per day terms. The graph presents the two variables in annual terms for expositional convenience.
Sources: Staff estimates; GDP per capita in 2005 RM from ADB (2007).

However, for the sake of expositional convenience, we also consider a single monetary value for our Asian poverty line regardless of which set of PPPs is used. The average of the median values based on the three sets of PPPs – \$1.35 – presents itself as the common value. In what follows, we use \$1.35 per day as the Asian poverty line (regardless of which set of PPPs is used to convert this poverty line into local currency units and thence to estimate poverty incidence).

Table 6 presents three sets of estimates of the headcount index for various survey years using a common poverty line of \$1.35 per day, but based on the three different sets of PPPs (columns 2–4). Columns 5–7 present the corresponding number of poor for the three sets of PPPs. A quick examination of the total number of poor across the 16 countries clearly shows the large differences in the incidence of poverty depending on the particular PPP used. For the purposes of analysis, however, it is most useful to examine columns 8 and 9, which report the percentage point differences in the incidence of poverty resulting from use of the different sets of PPPs for converting the Asian poverty line of \$1.35 per person per day. As column 8 indicates, the switch from consumption PPPs to ICP PPPs results in a decline in the percentage of people living in poverty in 13 out of 15 cases. Only Cambodia and the Lao PDR move in the other direction.

However, the percentage point differences in the two sets of poverty estimates (i.e., between those based on consumption PPPs and on ICP PPPs) are typically not that large: the headcount index differs by more than 3 percentage points in only four countries (Fiji Islands, Maldives, and Mongolia, where it falls, and the Lao PDR, where it rises).

Larger changes in the incidence of poverty generally result from using poverty PPPs based on the poverty survey prices. Focusing on the changes to the headcount index that arise from using poverty PPPs based on the poverty survey prices (i.e., PS PPPs) as opposed to ICP prices (i.e., ICP PPPs), we see changes of 5 percentage points or more for seven countries (column 9). In fact, Bangladesh and Indonesia see declines of more than 10 percentage points. India, Pakistan, Sri Lanka, and Viet Nam experience declines of 5–9 percentage points. In contrast, Maldives, Mongolia, and Philippines experience an *increase* in poverty incidence of 3–6 percentage points.

The above results are in line with the comparisons of PPPs discussed earlier. Thus, the use of prices generated from a product list tailored to the consumption patterns of the poor, as opposed to the general population, often has a larger impact on final poverty estimates than the use of prices from a product list relevant to the general population, but aggregated using expenditure shares of the poor.

Table 6 Headcount Indexes: Percentage of Population Living Below the \$1.35 Per Day Asian Poverty Line

Country	Year	Asian Poverty Line, \$1.35 Per Day (2005 PPP)				Difference in Headcount Index (percentage points)		Difference in Magnitude of Poor (million)	
		Headcount Index (%)		Magnitude		Consumption PPP to ICP PPP (8) = (3) - (2)	ICP PPP to PS PPP (9) = (4) - (3)	Consumption PPP to ICP PPP (10) = (6) - (5)	ICP PPP to PS PPP (11) = (7) - (6)
		Consumption PPP	Poverty PPPs ICP PPP PS PPP	Consumption PPP	Poverty PPPs ICP PPP PS PPP				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
Bangladesh	2005	58.2	55.7	42.9	89.26	85.30	65.79	-2.6	-12.7
Bhutan	2003	35.9	34.9	31.8	0.22	0.21	0.19	-1.0	-3.0
Cambodia	2004	35.4	36.2	36.9	4.86	4.97	5.06	0.8	0.7
Fiji Islands	2002	32.9	28.3	28.9	0.27	0.23	0.23	-4.6	0.6
India	2005	65.3	63.9	54.8	740.42	724.32	621.88	-1.4	-9.0
Indonesia	2005	39.2	38.7	24.1	88.71	87.49	54.41	-0.5	-14.6
Lao PDR	2002	48.8	52.5	53.6	2.64	2.83	2.89	3.6	1.1
Malaysia	2005	0.0	0.0	0.0	0.00	0.00	0.00	0.0	0.0
Maldives	2003	13.3	9.3	12.6	0.04	0.03	0.04	-4.0	3.3
Mongolia	2002	40.0	36.4	40.4	1.01	0.91	1.02	-3.6	4.0
Nepal	2004	59.5	57.6	55.8	15.80	15.30	14.81	-1.9	-1.9
Pakistan	2005	32.7	30.3	24.9	51.69	47.87	39.39	-2.4	-5.4
Philippines	2006	27.0	24.1	29.5	23.24	20.75	25.40	-2.9	5.4
Sri Lanka	2002	18.4	15.5	9.9	3.47	2.92	1.86	-2.9	-5.6
Thailand	2002	0.1	0.0	0.0	0.04	0.00	0.00	-0.1	0.0
Viet Nam	2004	25.6	24.2	16.0	21.48	20.28	13.39	-1.4	-8.2

ICP = International Comparison Program; PPP = purchasing power parity; PS = poverty survey.

Note: Some computations may not yield the exact figures shown above because of rounding.

Sources: Staff estimates based on unit-level data for Bangladesh, Bhutan, Fiji Islands, India, Indonesia, Malaysia, Maldives, Philippines, and Viet Nam; for the remaining countries, based on World Bank PovcalNet data; population estimates from United Nations Population Database.

6. Prospects for Poverty Reduction: Some Scenarios

The PPPs developed here can easily be used with other types of data for research-related purposes. A question of considerable interest is what the prospects for poverty reduction are like under various scenarios for economic growth and distributional change. For purposes of illustration, we consider how the incidence of poverty may evolve between 2005, the ICP 2005 benchmark year, and 2020. Poverty is measured in terms of the Asian poverty line of \$1.35 per day in 2005 PS PPP.

Since not all our countries conducted nationally representative household expenditure surveys in 2005, it is necessary to use available data to estimate what poverty in 2005 may have looked like. We carry out the necessary computations using the approach of Chen and Ravallion (2004).

As for 2020, our projections for poverty are based on assumptions about the rate of economic growth experienced by each of the 16 countries until 2020 and various scenarios on the distribution of household consumption across different households in 2020. In particular, we assume that each of the 16 countries' GDP per capita will grow until 2020 at the same rate as registered between 1990 and 2006. Next, we translate our projections of GDP per capita in 2020 into projections of mean per capita consumption expenditures in 2020 on the assumption that each 1% increase in GDP per capita is associated with a 0.6% increase in survey-based mean per capita expenditures – a relationship that stems from previous empirical work.

To estimate poverty in 2020, we need to combine the projected mean per capita consumption expenditures in 2020 with information on the *distribution* of per capita expenditures across the population. We consider three scenarios for distribution in 2020. In the first scenario we treat distribution as unchanged between 2005 and 2020 (economic growth is “distributionally neutral”). In the second scenario, we consider the possibility that the distribution works in favor of the relatively poor. More specifically, we assume that only the middle 20% experience growth in per capita consumption expenditures equal to mean growth. The bottom 40% see their per capita expenditures grow faster than the mean, while the per capita expenditures of the top 40% grow less than the mean. We label economic growth “pro-poor” in this scenario. The third scenario is where per capita consumption expenditures of the top 40% grow faster than the middle 20%, who experience growth in per capita consumption expenditures equal to mean growth; the per capita expenditures of the bottom 40% grow less than the mean. In this scenario, economic growth is termed “pro-rich.”

Table 7 presents the various estimates of poverty. Column 1 reports the percentage of the population living below the Asian poverty line in 2005. Columns 2–4 describe the projected poverty rates in 2020 for each of three scenarios for distribution. As can easily be seen, the lowest poverty rates result from pro-poor growth; the highest poverty rates result from pro-rich growth. The differences can be rather large, especially in countries starting out with poverty rates in double digits in 2005. In Bangladesh, India, Indonesia, Pakistan, and Philippines, our projected rates of poverty can differ by at least 7 percentage points depending on whether growth is pro-poor or pro-rich. Given the large populations of these countries, these differences translate into differences of 18.4 million, 126.5 million, 28.0 million, 17.5 million, and 8.2 million poor for the five countries, respectively (columns 6–8).

While the methodology used in generating these numbers could be criticized as simplistic, it is useful for reminding us that while sustained economic growth is imperative for poverty reduction, policies that can also make growth more inclusive remain the gold standard that policy makers should pursue in so far as poverty reduction is concerned.

Table 7 Percentage of Population below the Asian Poverty Line (\$1.35 per day, 2005 PS PPP), 2005 and 2020								
Country	Headcount Index (%)				Magnitude ^a (millions)			
	2005	2020			2005	2020		
		Pro-poor	Neutral	Pro-rich		Pro-poor	Neutral	Pro-rich
		Distribution	Distribution	Distribution		Distribution	Distribution	Distribution
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bangladesh	42.9	17.5	21.3	27.0	65.8	33.9	41.1	52.2
Bhutan	31.5	7.0	8.2	13.7	0.2	0.1	0.1	0.1
Cambodia	31.4	4.2	4.9	9.5	4.4	0.8	0.9	1.7
Fiji Islands	30.1	23.9	25.4	30.1	0.3	0.2	0.2	0.3
India	54.8	20.4	23.1	29.6	621.9	281.2	318.6	407.7
Indonesia	24.1	9.0	11.2	19.7	54.4	23.6	29.2	51.5
Lao PDR	44.4	16.6	19.2	25.4	2.5	1.2	1.4	1.8
Malaysia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maldives	10.7	0.0	0.0	2.3	0.0	0.0	0.0	0.0
Mongolia	32.0	18.2	20.5	24.6	0.8	0.5	0.6	0.7
Nepal	55.6	44.7	46.1	48.6	15.1	16.0	16.5	17.4
Pakistan	24.9	11.5	14.0	19.9	39.5	24.0	29.1	41.4
Philippines	30.6	21.1	22.9	28.7	25.9	23.0	24.9	31.2
Sri Lanka	5.9	0.0	0.0	1.3	1.1	0.0	0.0	0.3
Thailand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Viet Nam	13.5	0.0	0.0	0.0	11.5	0.0	0.0	0.0

a Magnitudes of poverty based on headcount ratios from columns 1–4 and population estimates and projections from United Nations Population Database.

Source: Staff estimates.

7. Concluding Remarks and Directions for Future Work

The special chapter of *Key Indicators 2008* sheds light on how alternative approaches to constructing PPPs influence internationally comparable estimates of poverty. In particular, it considers three sets of PPPs: the standard consumption PPPs used in generating the World Bank's \$1-a-day poverty estimates, and two sets of "poverty" PPPs – ICP PPPs and PS PPPs. Crucially, the PS PPPs are based on prices collected from special, poverty-specific surveys of prices. We believe that these PS PPPs are the more relevant of the two sets of poverty PPPs to be used in making international comparisons of poverty.

Comparing consumption PPPs with the two sets of poverty PPPs is revealing. Incorporation of the expenditure shares of poor households into PPP construction, while maintaining the use of prices collected for the 2005 ICP Asia Pacific, can lead to large differences in the values of PPPs for several countries vis-à-vis the standard consumption PPPs. However, the use of prices from the poverty-specific surveys tends to have even larger effects on PPPs. They also have larger effects on corresponding estimates of poverty.

In terms of an "Asian poverty line" fixed at \$1.35 per day, the total number of poor in 2005 across the 16 countries is estimated at 1,042 million, on the basis of consumption PPPs. This number declines to 1,013 million when ICP PPPs are used. A far bigger drop appears when PS PPPs are used, to an estimated 843 million. These findings on the sensitivity of PPPs and corresponding estimates of poverty indicate that the selection of the PPP can impact significantly on international comparisons of poverty. In particular, the largest changes in estimates of poverty are seen not so much when one incorporates the expenditure patterns of the poor (in terms of expenditure shares or weights) in the compilation of PPPs, but rather when one uses prices collected on the basis of a list of products that are typically consumed by the poor.

Given the demonstrated feasibility of developing product lists relevant to the poor and collecting the corresponding prices, the findings reported in the special chapter suggest that the next round of the ICP, in 2011, should seriously explore the collection of poverty-specific prices as part of its regular pricing activities. Additionally, and more generally, the analysis of PPPs for the 2005 ICP Asia Pacific and the study of poverty-specific PPPs have highlighted a priority area for national statistical systems: strengthening the systems for collecting prices and producing consumer price indexes (CPIs). One weakness in many countries is the lack of CPIs relevant for rural areas.

Given that the majority of developing Asia's population still live in rural areas, this is a fundamental weakness. There is also scope for harmonizing the ICP and CPI price collection. This would not only benefit future rounds of the ICP by simplifying price data collection for future PPP calculations, it would also benefit countries through the use of innovative ICP methodologies for collecting and validating prices, and developing PPPs for subregions within countries.

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