

Chapter 6

Poverty-Specific Price Surveys in the 2005 ICP Asia Pacific

Introduction

A significant milestone for the poverty PPP study in the 2005 ICP Asia Pacific is the inclusion of a feasibility study to conduct price surveys specifically designed for the purpose of compiling PPPs for converting the IPL. The surveys represent a major step forward from the PAG methodology. The PAG recommended the computation of poverty PPPs with the use of price data for consumption items that are collected as part of the general ICP along with expenditure weights of the poor. The innovation in PAG's recommendation is the recognition that budget shares reflecting the purchase patterns of the poor are likely to differ significantly from the patterns observed for the general population. The PAG methodology also articulates an iterative procedure to resolve the circularity issue arising out of the need to identify the poor to elicit the expenditure patterns needed in computing poverty PPPs, and the need to use poverty PPPs to identify the poor in the first place. The resolution of the circularity problem is a crucial step in the computation of poverty PPPs.

The PAG recommendation considered the issue of suitability of prices collected for items specified for the general ICP for the purpose of poverty PPP computation. While recognizing the use of ICP price data for poverty PPP as a possible setback, the PAG was of the opinion that taking account of differences in expenditure share weights between the poor and the general population is likely to be more important. It also felt that it would not be feasible to conduct special price surveys as part of the current ICP round.

Consequently, the current baseline methodology for poverty PPPs recommends aggregation of PPPs for basic headings generated from the ICP using the expenditure patterns of the poor.

The Regional Office of the 2005 ICP Asia Pacific at ADB, however, recognized the need to examine further the feasibility of conducting price surveys specifically for the poverty PPP study. The decision to pursue the poverty-specific price survey approach was made after a discussion of the issues between the Regional Office and the national price statisticians involved in the 2005 ICP Asia Pacific. Several questions were raised about the meaning and feasibility of price surveys specifically to measure prices paid by the poor. The first and most difficult question was, obviously, Who are the poor? Not knowing who the poor are, how can we conduct such a survey? Where are the poor located? What do they typically consume? Where do the poor shop? What are the types of outlets used by the poor? What about the variation across countries in the region?

This chapter is devoted to a description of the general process underlying the conduct of poverty-specific price surveys, including the process of preparing the product list for the poverty-specific price surveys. The following sections give details on country participation and the process involved, the product lists and item specifications, the general survey framework that guided the poverty-specific price surveys in different countries, and validation of the poverty-specific price survey data collected. Two sections make a comparative assessment of the

prices collected as part of the poverty-specific price surveys and prices of comparable products from the 2005 ICP Asia Pacific price surveys. PPPs at the basic heading level computed using poverty-specific price survey data are presented and compared with those derived using 2005 ICP Asia Pacific price surveys. The chapter also addresses the issue of whether the price data collected through poverty-specific price surveys correspond to the unit values²⁹ (or average item prices) observed for poor households. The unit values considered here are derived from HES and poor households are identified using the national poverty lines.

Country Participation

Sixteen countries participated in the poverty PPP study, which was carried out as an extension of the 2005 ICP Asia Pacific. The preparation of the product lists for poverty PPPs was undertaken in two steps.

Step 1. Endorsement of the conduct of a poverty-specific price survey and provision of the initial product list by countries.

This first step was undertaken during the 2005 ICP Asia Pacific workshop held on 21–22 November 2005, when the participating countries endorsed the idea of conducting price surveys for poverty PPPs. In the ensuing months, each country provided the Regional Office with a product list consisting roughly of 50 to 60 items. In preparing the product lists, the participating countries sought advice from poverty specialists, price statisticians, and HES statisticians in their respective countries. The Regional Office analyzed the lists and identified patterns of overlapping products across countries. A workshop to finalize the product lists was held thereafter.

Step 2. Finalization of the product list using the subregionalized approach.

The consolidated product lists showed clear patterns driven by subregional groupings of countries. Therefore, it was decided that a subregional approach

would be adopted in the finalization workshop held on 16–17 June 2006. During the workshop, the second step, operationalizing the preparation and finalization of the products list for the poverty-specific price surveys, was taken.

Three subregions were considered: the South Asian region comprising Bangladesh, Bhutan, Fiji Islands, India, Maldives, Nepal, Pakistan, and Sri Lanka; the Mekong region comprising Cambodia, Lao PDR, Thailand, and Viet Nam; and the East Asian region and others comprising Indonesia, Malaysia, Mongolia, and Philippines.

Representatives from countries of the subregions deliberated on their subregional product lists and highlighted the salient features of their lists. The main consideration in preparing the lists was the quality of the products that are commonly purchased by the poor. It was generally recognized that the quality of products purchased by the poor would be inferior compared with the purchases of the more affluent sections of the population. The typical purchase quantity was also considered. That the poor tended to purchase small quantities was usually cited as a reason why they may be paying higher prices. The final consideration was the type of outlets where the poor generally make their purchases. General and wet markets and small shop outlets are considered typical sources of purchases.

Product Specifications and Product Lists

The final consolidated list based on the subregional lists has 155 products belonging to 45 basic headings identified in the 2005 ICP Asia Pacific. In comparison, the 2005 ICP Asia Pacific list has over 656 products covering 110 basic headings of ICEH. An implication is that the participating countries felt that the remaining 65 basic headings consist of items that are not of major significance to purchases made by the poor. For purposes of illustration, a sample list is given in Table 9. Only six varieties of rice are included in the basic heading “rice” for poverty-specific price surveys. The lower quality of the products included here is reflected in the quality specifications. Most of the rice items refer to the ordinary coarse variety that may have a high percentage of broken rice. An interesting feature of the list is the inclusion of two varieties of subsidized rice, which are common in some South Asian countries. The product list also indicates the regions where the given items are considered

²⁹ Deaton (2004) and Rao and O’Donnell (2004) make use of unit values from household expenditures to derive PPPs for food items. Deaton’s work is on India and Indonesia; Rao and O’Donnell focus on Ethiopia and Uganda. Unit values from household expenditures are considered an additional source of price data.

Table 9. Sample Products and Specifications for Poverty-Specific Price Surveys

BH Code	Product Name	SAR	Mekong	Others	Quality	Quantity	UOM	Package	Other Specification	Outlet
1101111	Coarse #6 - parboiled, 15–50% broken	X			Coarse, 15– 50% broken (Medium quality)	1	kilo	Loose	Parboiled	Open markets; Small local shops; Weekly market for rural
1101111	Coarse rice, ordinary, loose (a) (subsidized)	X			Coarse, ordinary	1	kilo	Loose	Subsidized; Not parboiled	Open markets; Small local shops; Weekly market for rural
1101111	Coarse rice, ordinary, loose (b) (not subsidized)	X			Coarse, ordinary	1	kilo	Loose	Not subsidized; Not parboiled	Open markets; Small local shops; Weekly market for rural
1101111	Coarse rice, 20–50% broken, not parboiled		X		Coarse, 20– 50% broken (Medium quality)	1	kilo	Loose	Not parboiled	Open markets; Small local shops; Weekly market for rural
1101111	Coarse, >50% broken, not parboiled		X		Coarse, >50% broken	1	kilo	Loose	Not parboiled	Open markets; Small local shops; Weekly market for rural
1101111	Glutinous rice		X	X	Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101111 Count	6									
1101112	Bajra flour	X			Low	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Beaten rice (Chira)	X			Low	500	grams	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Dahl - Kasari	X			Low-medium	250	grams	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Dahl - Musur/Lentil	X			Low-medium	250	grams	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Dahl - Split peas	X			Low-medium	250	grams	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Maize flour	X			Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Sawtu	X			Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Wheat flour - loose			X	Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Wholemeal flour (Atta) (not subsidized)	X		X	Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112	Wholemeal flour (Atta) (subsidized)	X			Low-medium	1	kilo	Loose		Open markets; Small local shops; Weekly market for rural
1101112 Count	10									

UOM = unit of measure.

important from the perspective of the poor. The last column shows the outlets that are considered typical sources for purchases by the poor.

Appendix Table 3 gives the full list of products included in the poverty-specific price surveys.

In summary, there are significant differences between the 2005 ICP Asia Pacific and the poverty PPPs in terms of the product lists, item specifications and characteristics, and outlets. Tables 10 and 11 highlight the differences.

Table 10 shows that the 2005 ICP Asia Pacific price surveys target purchases made in larger quantities. However, it is not clear whether the poor pay higher prices as they make purchases in smaller quantities. A factor that may offset the disadvantages associated with smaller quantity purchases is the fact that the poor tend to purchase from less expensive outlets. A comparison of item-level prices from the two surveys will be presented later.

Table 10. Sample Quantities: 2005 ICP Asia Pacific Price Surveys versus Poverty-Specific Price Surveys

Product	Item Priced	
	ICP	Poverty
Coarse rice	10 kg	1 kg
Beef - nonspecific cut	1 kg	250 g
Chillis - dried, red	100 g	50 g
Candle	1 piece from a pack of 4–6 candles	1 piece

Table 11 shows differences in the quality of the products targeted for price surveys. Even when the product is the same, the quality of the product varies significantly across the two surveys. A good example is a bicycle. For the 2005 ICP Asia Pacific, a bicycle is of good quality with various features so that it becomes comparable across countries. In contrast, the poverty-specific price survey specification for the bicycle item reflects poorer quality as typically purchased by the poor. Given these differences, one would expect that prices paid by the poor would be lower, reflecting the lower quality of the products purchased.

Table 11. Sample Quantities: 2005 ICP Asia Pacific Price Surveys versus Poverty-Specific Price Surveys

Product	Item Priced	
	ICP	Poverty
Rice	Coarse; Brown; White; Premium	Coarse; Ordinary
Meats	Choice cuts; nonspecific cut	Nonspecific cut
Vegetables	Good quality	Low quality
Wine	Table wine; Premium; Native wine	Native wine
Garments	Local popular brand, medium quality	Cheapest brand, low quality
Bicycle	Good quality with additional features	Cheap quality and basic features

The Survey Framework

The countries were given specific instructions on the survey framework and the general approach to follow in conducting the poverty-specific price surveys. The target price for the survey was the average of the prices paid over all the transactions or the purchases made by the poor in a given period of time.

Given the timing of the poverty PPP study and finalization of the product list in June 2006, it was generally agreed that countries would conduct the poverty-specific price surveys over a 2-week period in the last quarter of 2006. Because seasonality could be a problem, it was agreed that price data collected would be translated back to the June quarter of 2005.

The following are the main elements of the survey framework.

- (i) **Stratification of the population.** As the survey needed to capture the purchases made by the poor in rural and urban areas, a stratified sampling approach with stratification based on rural and urban areas as well as by regions or states of the country at large was recommended.
- (ii) **Sampling frame of outlets within each stratum.** The sampling frame was to cover all relevant outlets specific to the

poor. Depending on the product, the frame covered different types of markets and outlets including open markets, wet markets, small retail shops, and weekly markets.

- (iii) **Sampling designs.** A self-weighting design with the number of price quotations collected from a location reflecting the volume of transactions was used. The volume of transactions depended on the number of the poor. In such cases it was possible to derive national average prices by taking simple averages of the price quotations. However, when a simple random sample of prices was collected from different regions and outlets, then it was necessary to use a weighted average with weights proportional to the quantities purchased from the outlets.

The countries were advised to use the existing CPI infrastructure and framework for collecting prices. If the CPI survey covered only urban areas, the countries needed to include a selection of rural areas (towns and villages). Countries were advised to ensure that all relevant types of outlets for a given product were adequately covered.

Collection and Validation of Price Data

The countries conducted their poverty-specific price surveys during the third and fourth quarters of 2006, and submitted to the Regional Office national average prices. These averages are unweighted arithmetic averages of individual price quotations. The price data submitted were analyzed and validated using standard ICP procedures, and the results were presented at the validation workshop held in March 2007.

From the reports made by the country representatives, it is apparent that the participating countries ensured adequate coverage of both rural and urban outlets used by the poor.

A general conclusion from the data validation workshop was that the reported price data were of high quality. The participating countries appeared to have benefited from their ICP price survey experience. As a result, prices submitted were clean without too many outliers. The workshop participants expressed confidence that the price data submitted represented well the prices paid by the poor in their respective countries.

Appendix Table 1 shows the coverage of basic headings in different countries. The last column shows the number of countries without any price data for the given basic heading. As a number of basic headings had only one commodity, it is possible that some countries may not have priced that particular commodity and hence the basic heading has no data. The table shows that “passenger transport by railway” was not priced in nine countries. Similarly, Cambodia, Fiji Islands, and Lao PDR had no price data for 13, 12, and 11 basic headings, respectively. At the other end of the spectrum, India, Philippines, and Thailand had priced data for all the basic headings.

Quaranta Tables for Validating Price Data

Quaranta tables (developed in 1999 by Vincenzo Quaranta from the Italian Statistical Office) are a commonly used diagnostic tool for checking the presence of outliers in the price data. To demonstrate the quality of poverty-specific price survey data collected, Quaranta tables for the basic headings of rice in Table 12, and for product item Cabbage (basic heading Fresh and Chilled Vegetables) in Table 13 are presented here.

Tables 12 and 13 are typical of Quaranta tables used in the process of validating price data. Table 12 provides information for validating data at the basic heading level while Table 13 provides information on price data for individual products that constitute a given basic heading.

In Table 13, diagnostics are presented for Cabbage, which is an item belonging to basic heading “Fresh and Chilled Vegetables and Fruits.” The NC-price (price in national or local currency) gives the average price of the product expressed in local currency units. Therefore, prices in the NC-price column are not strictly comparable. The column “Quotations” shows the number of price quotations

used in computing the national average prices. The coefficient of variation presented in the column “Var. Co.” provides a measure of reliability of the average price reported by a country. For example, in country A, the national average price is 7.011 with a coefficient of variation³⁰ equal to 8.7 indicating a high degree of reliability. The column “XR-price” converts national prices into a common currency using the market exchange rates (MER). The XR-prices are comparable across countries. Here these prices show a high degree of variability ranging from a low of 0.30 for country E to a high of 1.84 for country I.

³⁰ Coefficient of variation is defined as (standard deviation/ arithmetic mean)*100.

Table 12. Quaranta Table for Rice

Quaranta Table Diagnostics-Filters - Rice						
Basic Heading Code	1101111		Time period	Jun-05	Run date	
Scope of Coverage	Country		Upper bound	150	Lower bound	50
Averaging Method	Arithmetic mean		Imputation	CPD		
Price Attributes	NA					
Location Attributes	NA					
Product Attributes	NA					
Summary Information						
Number of items included in the analysis	6 out of 6		Average weight of basic heading in total expenditure	222.2		
Number of countries included in the analysis	16 out of 16		Average coefficient variation	14.7		
Base country	A					
Country Level Details						
Country	XR	PPP	PLI (%)	Weight*	Items	Var.Co.
A	1.00	1.00	100.0	222.2	3;*3	14.1
B	16.99	9.77	57.5	222.2	3;*3	6.9
C	11.64	9.62	82.6	222.2	3;*3	22.7
D	1080.64	569.70	52.7	222.2	4;*4	14.5
E	0.45	0.65	145.1	222.2	1;*1	0.0
F	11.64	5.50	47.2	222.2	6;*6	14.6
G	2562.58	1335.46	52.1	222.2	2;*2	29.2
H	2813.55	1801.81	64.0	222.2	3;*3	18.1
I	3.38	2.46	72.9	222.2	2;*1	12.1
J	318.24	357.77	112.4	222.2	3;*2	6.3
K	18.84	13.25	70.3	222.2	3;*3	20.5
L	15.72	8.86	56.4	222.2	1;*1	0.0
M	14.55	16.32	112.2	222.2	3;*3	15.5
N	26.54	16.44	61.9	222.2	2;*2	7.0
O	10.62	7.70	72.5	222.2	2;*2	9.0
P	4187.61	2364.72	56.5	222.2	3;*3	13.9
PLI = price level index; PPP = purchasing power parity; Var Co = coefficient of variation; XR = exchange rate.						
* Shares are multiplied by 10,000.						

It is important to see if such variations are due to intrinsic differences in price levels of countries. This is achieved using the conventional unit to express parity (CUP-price) shown in column “CUP-price.” The CUP-price is derived by converting the NC-price using the PPP for the basic heading, Fresh and Chilled Vegetables and Fruits. The CUP-prices are, therefore, adjusted for price level differences across countries and are expected to be close to each other. This is reflected in the narrow range of 0.83 for country E to 1.65 for country M. The variability in the CUP-prices is measured using the coefficient of variation in the CUP-ratios reported in the column “CUP-ratio.” For the item Cabbage, the coefficient of variation, reported at the top of the table, is 21.5 indicating fairly consistent price data across countries for this item.

Table 12 provides summary information for the basic heading, rice. Six products are included under this basic heading. The XR column shows the MERs for 2005. The PPP column shows the basic heading PPPs computed using information on prices of six different varieties of rice using the CPD method (discussed in Chapter 5). For example, a PPP of 9.766 for country B implies that 9.766 units of country B currency have the same purchasing power as one unit

of the currency of country A. The column “PLI”, the price level index, is simply the ratio of PPP to the exchange rate (multiplied by 100). For example, a PLI of 57.495 percent for country B implies that the price level in country B are roughly half that observed in country A. The weight column shows the weight attached to the particular basic heading in each of the countries. In the table, the weights are all shown to be equal to 222.2, indicating that a dummy value was fed into the tabulation.³¹ The column “Items” shows a pair of numbers: the first number shows the number of items in the basic heading that were priced in a given country and the second number shows the number of items that are considered representative. In the poverty-specific price surveys all items are considered to be representative; therefore both numbers are the same. For example, in country F all the six varieties of rice were priced, whereas in country E only one variety was priced. The last column, “Var. Co.,” shows the reliability of price data for each country. This is a coefficient of variation of the CUP-prices for each of the rice varieties priced in a given country. A low coefficient of variation implies

³¹ Expenditure weights are not required for computing basic heading PPPs reported in the Quaranta table. These weights are needed for aggregation above the basic heading level.

Table 13. Quaranta Table for Cabbage

Item-level Details								
8811011712	Cabbage					Var.Co.: 21.5		
Country	NC-price	Quotations	Var.Co.	XR-price	XR-ratio	CUP-price	CUP-ratio	Pref. UoM
A	7.011	20	8.7	0.41	68.24	0.97	92.13	500 - Grams
B	5.763	36	24.9	0.49	81.82	1.08	102.75	500 - Grams
C	669.035	73	13.8	0.62	102.36	0.96	91.89	500 - Grams
D	0.496	17	2.8	1.11	183.51	1.07	101.93	500 - Grams
E	3.537	654	22.3	0.30	50.21	0.83	79.53	500 - Grams
F	998.236	395	25.5	0.39	64.40	0.84	79.74	500 - Grams
G	1807.640	14	10.0	0.64	106.22	1.37	130.41	500 - Grams
H	1.212	229	11.4	1.21	200.30	1.21	115.52	500 - Grams
I	6.235	58	22.5	1.84	305.00	1.28	122.49	500 - Grams
J	187.182	27	23.3	0.59	97.24	0.85	81.11	500 - Grams
K	7.219	77	25.5	0.38	63.33	0.90	86.14	500 - Grams
L	5.469	70	17.3	0.35	57.54	0.93	88.25	500 - Grams
M	17.197	255	28.8	1.18	195.47	1.65	157.37	500 - Grams
N	18.896	60	25.8	0.71	117.72	1.28	121.61	500 - Grams
O	5.411	36	22.5	0.51	84.23	0.90	85.84	500 - Grams
P	1675.920	32	23.1	0.40	66.16	1.00	95.14	500 - Grams

CUP = conventional unit to express parity; NC = price in local currency; Pref. Uom = preferred unit of measure; Var. Co. = coefficient of variation; XR = exchange rate.

that the variation in prices of different varieties of rice included in the basic heading are very similar after they are adjusted for the PPP of the basic heading. The low values reported in this column show that the price data for this basic heading are reliable.

The validation of all price data from the poverty-specific price surveys was conducted using tables similar to Tables 12 and 13. It was generally recognized that the data from the poverty price surveys was of good quality.

Adjusting Poverty-Specific Price Survey Data to 2005 Levels

The price data supplied were adjusted using CPI data available at the most detailed level to adjust the third or fourth quarter 2006 prices to June 2005. Details of the adjustment for each participating country are given in Table 14.

These adjustments to price data provided by the countries are also designed to minimize the seasonal effects on commodity prices, especially prices of fruits and vegetables. Once the price adjustments were made, price data from the poverty-specific price

surveys could be compared and contrasted with the price data for similar products collected in the 2005 ICP Asia Pacific price surveys. This forms the substance of the next section.

Comparing Price Data from the 2005 ICP Asia Pacific Price Surveys and the Poverty-Specific Price Surveys

Sets of price data from the 2005 ICP Asia Pacific price surveys and as part of the poverty-specific price surveys were used in computing PPPs for converting the IPL. The resulting PPPs are presented in Chapter 7. Two sets of comparisons are presented here. First, the raw prices from the two sources are compared. Second, the basic heading PPPs resulting from the two sets are compared. It is not clear how PPPs would change when poverty-specific price survey data are uniformly less than the 2005 ICP Asia Pacific prices in two countries under consideration. It must be noted that PPPs based on the poverty-specific price surveys would not necessarily be lower than PPPs based on the 2005 ICP Asia Pacific price surveys even if the ICP prices

Table 14. Adjustment of Poverty-Specific Price Survey Data to Mid-2005

Country	Survey Period	Data Description
Bangladesh	November 2006	CPI for November 2006 indexed on June 2005 by item level; CPI by rural and urban areas
Bhutan	August 2006	Quarterly CPI at basic heading level; 3rd quarter 2006 as index for August 2006; average of 2nd and 3rd quarters 2005 as index for June 2005
Cambodia	October 2006	Item level CPI for October 2006 and June 2005
Fiji Islands	August 2006	2004-2007 monthly CPI by commodity groups
India	September 2006	For urban prices: CPI for industrial workers by commodity groups For rural prices: CPI for agricultural laborers by major commodity groups
Indonesia	September 2006	June 2005 and September 2006 CPI by major commodity groups
Lao People's Democratic Republic	November 2006	2005-2006 monthly CPI by major commodity groups
Malaysia	August 2006	June 2005 to August 2006 monthly CPI by basic heading
Maldives	October 2006	June 2005 and October 2006 CPI by product class
Mongolia	October 2006	June 2005 to October 2006 monthly CPI by commodity groups
Nepal	August 2006	National urban CPI for June 2005 and August 2006 by subgroups (close to BH level)
Pakistan	October 2006	June 2005 and October 2006 CPI by commodity class
Philippines	August 2006	The Philippines provided adjusted prices
Sri Lanka	August 2006	Monthly 2005 and August 2006 CPI by commodity class
Thailand	August 2006	June 2005 and August 2006 CPI by commodity class
Viet Nam	August 2006	CPI for August 2006 indexed on June 2005 by commodity class

CPI = consumer price index; BH = basic heading.

are generally higher. This is mainly due to the fact that the PPPs are expressed relative to the currency of a reference country.³² The data presented here are also used in making inferences on the regularly asked question, do the poor pay higher prices?

Item-Level Prices

Before comparing the prices, it is necessary to make the items between the two sources compatible. First, not all 2005 ICP Asia Pacific items had corresponding items in the poverty-specific price survey product list. Therefore, it was necessary to establish correspondence between the products in the two lists. As the 2005 ICP Asia Pacific product list had in excess of 650 products compared with 155 in the poverty-specific price surveys, a large portion of price data from the ICP list could not be used for comparisons. Further, purchase quantities for the ICP commodities were generally a lot bigger than the purchase quantities for the poverty-specific price surveys. This is evident from Table 9. Therefore, price quotations obtained from the ICP price surveys had to be converted to a quantity unit comparable with that used in the poverty-specific price surveys. For example, prices of rice items were collected for units of 10 kg. in the ICP. They had to be adjusted to the 1 kg. purchase quantity in the poverty-specific price surveys. All prices were derived using a pro rata adjustment, which assumes a linear relationship between quantity and price.

Examination of the prices reveals that, in general, poverty-specific price survey data were lower than the 2005 ICP Asia Pacific survey prices. Price ratios of selected items from the two surveys are presented in Table 15. However, in most of the countries, there were also products for which poverty-specific price survey data were higher than prices from the 2005 ICP Asia Pacific price surveys. There can be several reasons for that. For example, because the poor usually purchase small quantities, they tended to pay higher prices when compared, on a pro rata basis, with purchase quantities used in the 2005 ICP

³² A simple example helps in understanding the mechanics of this. Suppose the ICP price for 1 chicken egg is RM0.28 in Malaysia and Rs2.00 in India. This gives a PPP of Rs7.14 per RM for the ICP. Suppose the price of chicken egg in Malaysia and India from poverty price surveys are RM0.24 and Rs1.90, respectively. This means that in both countries poverty-specific price survey data are lower than the respective ICP prices. The PPP based on poverty price surveys, based on the price of chicken egg, is Rs7.92 per RM; this PPP is higher than the corresponding PPP from ICP prices. The reason for this is that the poor in Malaysia pay a relatively lower price for chicken egg than their counterparts in India do.

Asia Pacific, which were typically much larger (Table 10 has some examples). Another possible reason could be that the poor may be predominantly located in the rural areas and, due to transportation costs, prices of many products, especially clothing and household goods, could be higher than the prices paid in urban locations. This particular phenomenon is evident in poverty prices collected in Bhutan. Note, however, that Bhutan made special efforts in the poverty-specific price surveys to collect prices representative of the poor and, therefore, had a good proportion of price quotations from the rural areas including some remote areas.

Table 16 summarizes the differences in the two surveys for items that could be matched. It presents the percentage of the matched items where poverty prices are lower than the 2005 ICP Asia Pacific prices, higher than the ICP prices by less than 20%, and higher than the ICP prices by more than 20%. The table also shows that a large proportion of items for Bhutan and Fiji Islands have poverty prices higher than the 2005 ICP Asia Pacific prices. Another interesting point is that for food-related items, a higher proportion have poverty prices higher than the ICP prices. A possible explanation is that as food purchases are usually made on a day-to-day basis and due to the rural location of the outlets where the poor are located, the poor might have no choice but to pay the market prices even if they are high. On the other hand, nonfood purchases like clothing can be made in urban locations nearby, thus allowing to search for lower prices.

In the “All Items” panel in Table 16, Viet Nam, Indonesia, Thailand, and India have the highest proportion of items with prices less than the corresponding 2005 ICP Asia Pacific prices. The lowest percentage is observed in Nepal with 74.68% of poverty prices less than ICP prices followed by Fiji Islands with 76.92%, Bangladesh with 77.66%, Maldives with 78.69% and Bhutan with 79.75%. There is only a small percentage of products ranging from a low of 1.03% in India to a high of 8.20% in the Maldives where poverty prices exceeded ICP prices by more than 20%.

The second and third panels in Table 16 show detailed results computed for food and nonfood items. It is interesting to note that poverty prices are below the 2005 ICP Asia Pacific prices for most of the nonfood items, with a high value of 98.31% in the case of India. For most countries, this percentage is well above 90%, with the lowest percentage at 83.33

Table 15. Price Ratios of Selected Items from Poverty-Specific Price Surveys and 2005 ICP Asia Pacific Price Surveys

Country	Chicken Egg	Cabbage	Garlic	Salt	Softdrinks (small bottle)	T-shirt - men's	T-Shirt (top) - girl's	Kerosene (open market)	House Candle	Pencil	Men's Basic Haircut –street side	Basic Body Soap
Bangladesh	1.00	1.22	0.76	0.87	0.64	0.30	0.21	0.97	0.43	0.38	0.18	0.70
Bhutan	0.58	0.71	0.56	1.01	0.81	0.61	0.61	1.03	0.78	1.02	0.82	0.45
Cambodia	0.90	0.89	0.91	1.08	0.71	0.25	0.54	1.01	0.50	0.33	0.55	0.89
Fiji Islands	1.05	0.58	1.03	1.10	1.16	0.33	0.55	0.96	0.67	0.29	0.79	0.95
India	1.03	0.61	1.81	0.48	0.58	0.30	0.37	1.05	0.44	0.73	0.34	0.65
Indonesia	0.72	0.81	1.00	0.76	0.58	0.61	0.75	1.38	0.40	0.56	0.29	0.83
Lao People's Democratic Republic	0.79	0.88	0.68	0.58	0.76	0.36	0.46	1.04	0.12	0.44	0.68	0.54
Malaysia	0.88	0.88	1.09	0.98	0.95	0.22	0.49	1.42	0.85	0.84	0.41	0.95
Maldives	0.93	0.72	0.85	1.07	1.03	0.61	0.66	0.91	0.37	0.60	0.22	0.93
Mongolia	1.07	0.76	1.15	0.97	0.81	0.22	0.24	-	0.55	0.47	0.58	0.53
Nepal	1.02	0.97	1.22	0.98	0.80	0.37	0.43	1.10	0.64	0.73	0.43	0.43
Pakistan	0.69	0.73	0.68	1.00	0.77	0.63	0.67	0.97	0.65	0.93	0.42	1.02
Philippines	0.96	1.03	0.58	0.38	0.82	0.58	0.21	0.89	1.05	0.89	0.64	0.74
Sri Lanka	1.11	0.84	0.83	0.84	0.66	0.38	0.49	1.36	0.46	0.72	0.43	0.85
Thailand	0.70	0.59	0.83	0.85	0.80	0.31	0.32	1.02	0.97	0.70	0.47	0.92
Viet Nam	0.91	0.92	0.91	0.56	0.98	0.21	0.23	1.09	0.24	0.47	0.62	0.74

ICP = International Comparison Program.

Note: Prices ratios are computed as poverty price over ICP price.

Table 16. Comparison of Prices from Poverty-Specific Price Surveys and 2005 ICP Asia Pacific Price Surveys (percent)

Country	All Items			Food Items			Nonfood Items		
	Poverty < ICP	Poverty > ICP (up to 20%)	Poverty > ICP (> 20%)	Poverty < ICP	Poverty > ICP (up to 20%)	Poverty > ICP (> 20%)	Poverty < ICP	Poverty > ICP (up to 20%)	Poverty > ICP (> 20%)
Bangladesh	77.66	17.02	5.32	60.00	30.00	10.00	90.74	7.41	1.85
Bhutan	79.75	16.46	3.80	59.38	34.38	6.25	93.62	4.26	2.13
Cambodia	83.61	9.84	6.56	73.08	15.38	11.54	91.43	5.71	2.86
Fiji Islands	76.92	15.38	7.69	45.83	33.33	20.83	95.12	4.88	-
India	91.75	7.22	1.03	81.58	15.79	2.63	98.31	1.69	-
Indonesia	92.68	4.88	2.44	88.89	8.33	2.78	95.65	2.17	2.17
Lao People's Democratic Republic	90.00	6.67	3.33	96.00	4.00	-	85.71	8.57	5.71
Malaysia	89.69	6.19	4.12	83.33	9.52	7.14	94.55	3.64	1.82
Maldives	78.69	13.11	8.20	72.00	20.00	8.00	83.33	8.33	8.33
Mongolia	83.10	9.86	7.04	60.87	26.09	13.04	93.75	2.08	4.17
Nepal	74.68	22.78	2.53	51.61	45.16	3.23	89.58	8.33	2.08
Pakistan	83.33	14.44	2.22	83.33	11.11	5.56	83.33	16.67	-
Philippines	85.71	12.09	2.20	84.21	10.53	5.26	86.79	13.21	-
Sri Lanka	85.26	9.47	5.26	75.00	20.00	5.00	92.73	1.82	5.45
Thailand	92.05	7.95	-	91.89	8.11	-	92.16	7.84	-
Viet Nam	94.57	4.35	1.09	94.87	2.56	2.56	94.34	5.66	-

ICP = International Comparison Program.

reported for the Maldives and Pakistan. Possible reasons could be, first, it is likely that the quality of the products priced in the 2005 ICP Asia Pacific price surveys are of higher quality than those priced in the poverty-specific price surveys. It is more difficult to ensure that the same quality product is priced in both surveys when it comes to nonfood items. Second, one may argue that purchases of nonfood items are made by rural households when they travel for some other purposes to urban centers, where the prices are likely to be lower.

In the case of food items, a larger proportion of food items, compared with a similar proportion of nonfood items, have poverty prices higher than the ICP prices. This difference assumes a larger significance when it is coupled with the fact that food items and their packaging in poverty-specific price surveys are of lower quality. The reasons for this observation could be that, first, the poor make food purchases as and when they need them and cannot wait until low prices are offered for the items. Second, prices of food items are likely to be higher in rural areas due to costs of transportation as well as to higher marketing margins extracted by traders.

General trends in the poverty-specific and 2005 ICP Asia Pacific price surveys are examined in a series of graphs presented in Figure 1 for some selected countries, namely, Bhutan, Fiji Islands, India, Mongolia, Philippines, and Viet Nam. The charts present scatter plots of poverty and ICP prices in their logarithmic form, so $\ln(\text{Poverty price})$ and $\ln(\text{ICP price})$ are used in the x-axis and y-axis, respectively. The scatter plots are based on the subsets of items that are priced in a given country in both the poverty-specific price surveys and 2005 ICP Asia Pacific price surveys. As the products are diverse, the price range is large in most countries. Because there are items like bread and bicycle on the product lists, it is more convenient to present them using a logarithmic scale. Further, the scatter plots in original prices tended to exhibit heteroscedasticity, i.e., scatter plots tend to be distributed more widely as poverty prices increased. A natural way of addressing this problem is to take logarithms of prices.

The charts show two types of trend lines. The solid line represents the line of equality between poverty and 2005 ICP Asia Pacific prices. If ICP prices were equal to poverty prices the scatter plots would be on the solid line. So all those observations above the solid line represent items for which ICP prices are above the poverty prices. The light weighted

line represents a fitted regression equation between poverty prices and ICP prices (in logarithms). While the general trend is that a majority of ICP prices are above the poverty prices, as expected, there are subtle differences between countries. In addition, all the trend lines indicate that products with high poverty prices also have high ICP prices.

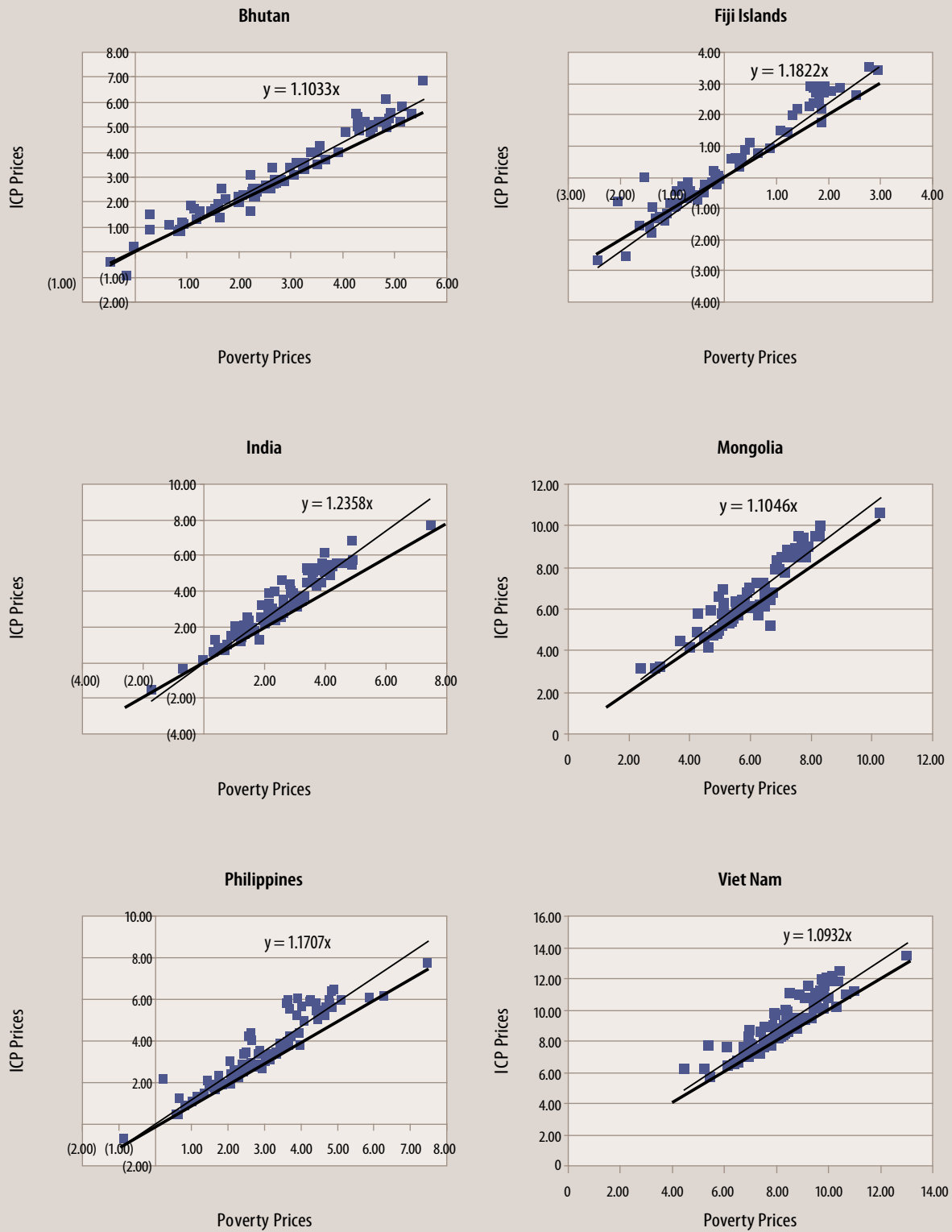
In both Bhutan and Fiji Islands, there are a number of low-end priced products for which the 2005 ICP Asia Pacific prices are lower than poverty prices. This may be due to higher transportation costs involved in making goods available in rural areas. In contrast, ICP prices in India are generally higher than poverty prices with a few exceptions. For Mongolia, there are many mid-range price products for which ICP prices are found to be lower than the poverty prices. In the case of Viet Nam, for the observed range of prices, the trend line is uniformly above the price of equality between ICP and poverty prices.

The results generally indicate the plausibility of the prices collected through the poverty-specific price surveys in the 16 participating countries.

PPPs at the Basic Heading Level from the 2005 ICP Asia Pacific and Poverty-Specific Survey Prices

Poverty price data discussed in the previous section confirm the general expectations in terms of comparative levels of poverty-specific price survey data and 2005 ICP Asia Pacific survey prices. The next question to consider is the effect of using poverty prices on PPPs at the basic heading level. As PPPs are multilateral price index numbers, it is difficult to speculate whether basic heading poverty PPPs would be higher or lower than ICP PPPs. For example, poverty prices in a given country, say India, are uniformly below the ICP prices for all the items within a basic heading. What then could be said about the basic heading poverty PPP if the reference country is Malaysia? If the Malaysian poverty and ICP prices are the same, then at least in a binary comparison, it can be said that the basic heading PPP for the Indian rupee with poverty prices would be lower than the ICP PPP for the same basic heading. This conclusion gets reversed if Malaysian poverty prices are lower than the corresponding ICP prices by a bigger proportion than in India. In other cases, it would be difficult to speculate.

Figure 1. Comparison of Poverty-Specific Prices and 2005 ICP Asia Pacific Prices for Selected Countries



A comparison of some interest would be to see if the basic heading PPPs from poverty-specific price survey data are significantly different from those obtained from the 2005 ICP Asia Pacific survey prices. There are several points to note here. There are 110 basic headings for ICEH in the 2005 ICP Asia Pacific whereas there are only 45 in the poverty-specific price surveys. Therefore, a comparison can be attempted only for 45 basic headings. The second point is that there is no a priori expectation as to which PPPs would be higher or which would be lower. The only point of interest is to see if the PPPs differ significantly. The question of whether the differences in the basic heading PPPs from the two surveys make any difference to the poverty PPPs is examined in Chapter 7.

Trends that may be present in the basic heading PPPs based on poverty and ICP prices will be clearer if charts are used in place of tables. As basic heading PPPs express the number of local currency units that are equivalent to one unit of the reference country currency, the basic heading PPPs are expected to be in a narrower range than the range for prices of items in the ICP or poverty price surveys. Therefore, the scatter plots in Figure 2 are not converted into logarithms. They are in the currency units of the respective countries.

The six charts are based on basic heading PPPs computed using 2005 ICP Asia Pacific and poverty-specific price survey data. As the poverty PPPs cover only 45 basic headings, the scatter plots are based on results for the overlapping basic headings for which there are PPPs from both sources. The fitted lines have slopes close to 1 for Bhutan, Fiji Islands, and Philippines. Slopes for the other three countries are below 1.

The equality of ICP and poverty basic heading PPPs is examined using a nonparametric test for all the countries using the Wilcoxon signed-rank test for equal means.

Table 17 shows the values of the z-statistic and the p-values of the Wilcoxon signed-rank test for equal means. The results show that the ICP and poverty basic heading PPPs are significantly different for Indonesia, Maldives, Philippines, Sri Lanka, and Thailand. The results, however, are not very useful in drawing any conclusions about the total effect of using ICP or poverty prices on the poverty PPPs generated. In any statistical test, the PPPs are considered to be a random sample. However, in combining basic

heading PPPs to derive a PPP for consumption, different weights are assigned to different basic heading PPPs. Results presented in Chapter 7 will provide an indication as to the differences in PPPs brought about by differences in ICP and poverty-specific price survey data.

A Preliminary Comparison of Poverty-Specific Price Survey Data and Household Expenditure Survey Unit Values

HES as a Source of Price Data

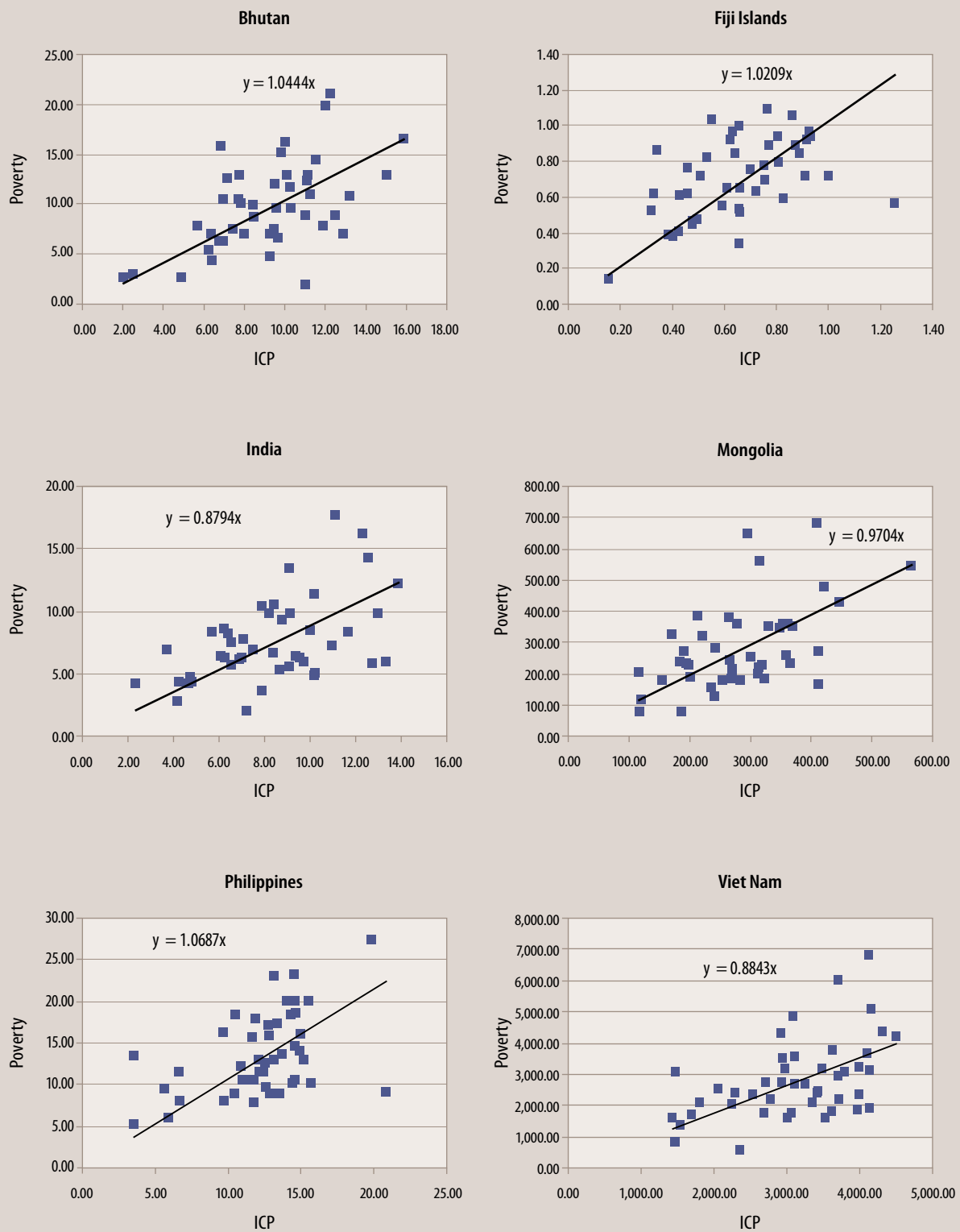
The HES are the standard sources for expenditure weights. Their main purpose is to collect data on household expenditure on different consumption items. In many countries, data are also collected on the quantities of items consumed along with the total household expenditure on the item. These quantities include consumption of purchased quantities as well as consumption of own production and payments in kind. To match the value with the quantity consumed, a value is imputed for the in-kind consumption component. If the HES data provide

Table 17. Nonparametric Tests for Equality of Means: 2005 ICP Asia Pacific and Poverty Price Consumption PPPs

Country	Wilcoxon Signed-Rank Test for Equal Means	
	z-stat	p-value
Bangladesh	1.484	0.138
Bhutan	-0.909	0.364
Cambodia	-1.264	0.206
Fiji Islands	-1.434	0.152
India	1.405	0.160
Indonesia	3.178	0.002*
Lao People's Democratic Republic	-0.311	0.756
Maldives	-2.585	0.010*
Mongolia	0.886	0.376
Nepal	-0.107	0.915
Pakistan	-0.717	0.474
Philippines	-1.676	0.094*
Sri Lanka	0.305	0.761
Thailand	1.744	0.081*
Viet Nam	2.297	0.022*

* Denotes significance at 10% or lower.

Figure 2. Comparison of Poverty and ICP Basic Heading PPPs for Selected Countries



information on expenditure as well as quantity for each household, then unit values can be computed for the items. The unit values vary from household to household.

Deaton (2004) explores the possibility of using unit values from HES as a source of price information for the purpose of computing PPPs. His work, based on data for India and Indonesia, has shown that it is possible to make use of the currently known index number methods to estimate PPPs based on unit value data. His work also demonstrates the problems associated with unit value data.

For the purpose of the poverty PPP study, unit prices are a particularly attractive source of price data. As unit values can be obtained for each household in the HES, it would be possible to obtain average prices paid by all those households in the survey that may be considered to be poor. In this case, the price data refer specifically to poor households. This is in contrast to the price data collected from the poverty-specific price surveys described earlier in this chapter. Poverty-specific price surveys provide price data collected from outlets that are the most likely sources of purchases by the poor, although the same outlets may also be used by households from different income brackets. Poverty-specific price surveys are also restricted to lower quality items and small purchase quantities, thereby enhancing the possibility that the collected prices may represent the prices paid by the poor.

The next subsection is devoted to a preliminary comparison of prices from poverty-specific price surveys and unit values from HES.

A Comparison of Unit Values and Poverty-Specific Price Survey Data

Poverty-specific price survey data were compared with unit values calculated from HES in Bangladesh, India, Indonesia, and Nepal. The prices and unit values cover food and beverage items only. The following steps were undertaken to make the comparisons.

Step 1. Match items from the poverty-specific price surveys with items for which expenditure and quantity information is recorded in the HES.

Several difficulties were encountered in this step. First, it was not always possible to match product descriptions across the poverty-specific price surveys and the HES (Table 18). In addition to the fact that certain products existed in one survey and not in the other, the product descriptions did not always match perfectly. In some cases (Table 19), products were lumped together in the HES (for example, “coffee [ground beans, instant]” versus “coffee powder” in the poverty survey in Indonesia); in other cases, the descriptions seemed to be for very similar products, but are perhaps not identical (for example, “wheat flour ” in both surveys in Nepal but with a large divergence between the poverty survey price and median unit values). Second, even if product descriptions were similar, there were cases where the units of measurement were different and could not be harmonized. For example, sometimes the HES used “pieces”, while the poverty-specific price survey expressed units in terms of a specific weight. Additionally, in Indonesia there seemed to

Table 18. Household Food and Beverage Expenditures Covered by Matched Products for Poor Households*

Country	Number of Products in Poverty Survey	Number of “Good” Matches	Total Number of Matched Products	Average Coverage of Matched Products in Household Food and Beverage Expenditures (%)**
Bangladesh (2005)	67	36	52	70
India (2004/05)	78	51	75	77
India (only samples surveyed in 2005)	78	51	75	77
Indonesia (2005)	49	32	32	54
Nepal (2004/05)	50	21	26	65

* Poor households were defined on the bases of official/national poverty lines (upper poverty lines for Bangladesh).

** Average computed using household sample weights.

Note: Good matched items include correct matches, duplicates, and those whose conversions are ignored due to the comparability and closeness of values of the household expenditure survey prices with the poverty-specific survey prices.

be some products for which harmonization of units could be achieved in principle, but the resulting poverty-specific price survey data and HES unit values were very different.

Step 2: Compute unit values for matched products.

Several important points must be noted. First, household-level observations on unit values were obtained from expenditure and quantity information only when the item in question was purchased by the household. In other words, items obtained as gifts or from homegrown stock were ignored in computing unit values. Second, unit values were obtained from sample households that are below the national poverty line. Third, the unit values typically displayed a wide range (i.e., a large difference between minimum and maximum). For this reason, it was decided that the median value of the unit values would be the best one to compare with prices obtained from the poverty-specific price surveys. Fourth, statistics on unit values (such as median and mean unit values) were computed using household sample weights to derive nationally representative unit values for poor households.

Step 3: Adjust poverty-specific price survey data to synchronize with unit values from the HES year.

As they stand, the prices and unit values collected in the two sets of surveys do not pertain to the same date. While the poverty-specific price survey data were collected in 2006, the HES from which unit values were calculated were carried out in different years: January to December 2005 for Bangladesh, July 2004 to June 2005 for India, February 2005 for Indonesia, and April 2003 to April 2004 for Nepal.

The difference in timing of the two sets of surveys was dealt with in the following manner. First, the poverty-specific price survey data were converted to 2005 values using disaggregated CPI data obtained from national statistical offices. (See the section, Adjusting poverty-specific price survey data to 2005 levels.) Second, the following steps were taken for each of the countries insofar as unit values from HES are concerned.

- (i) For Bangladesh and Indonesia, no adjustments were made since the surveys were carried out in 2005.

Table 19. Ratio of Poverty-Specific Survey Prices and Household Expenditure Surveys Unit Values for Selected Products

Bangladesh						
Products		UOM	Remarks	Average Budget Share (%)	Price Ratios	
PPS	HES				PPS to HES (Median)	PPS to HES (Mean)
Coarse rice, parboiled	Rice - coarse	1 kg	Duplicate	3.8	1.00	0.95
Ordinary coarse rice #1	Rice - coarse	1 kg	Duplicate	3.8	1.07	1.03
Ordinary coarse rice #3	Rice - coarse	1 kg	Duplicate	3.8	0.99	0.94
Onion	Onion	250 g		1.2	1.35	0.98
Beef - nonspecific cuts	Beef	250 g		1.1	1.03	1.04
Betel - leaves	Betel leaf	10 pc	Duplicate	0.9	9.40	0.38
Salt	Salt	1 kg		0.9	0.93	0.88
Chicken - nonspecific cuts	Hen	250 g		0.8	1.54	1.50
Chillis - dried, red	Dried chili	50 g		0.8	0.79	0.82
Betel nut - dried (Aracanut/Arecanut)	Betel nut	50 g		0.7	1.15	1.07
Turmeric powder	Turmeric	50 g		0.7	1.40	1.44
Chillis - fresh, green, or red	Green chilli	100 g		0.6	1.21	1.09

PPS = poverty-specific price survey; HES = household expenditure survey; UOM = unit of measure; kg = kilogram; g = gram; pc = piece.

- (ii) For India, the survey was carried out from July 2004 to June 2005. No adjustments were made on the data.
- (iii) For Nepal, unit values from the HES, which was carried out from April 2003 to April 2004, were converted to 2005 values using the CPI for the food subgroup. Unfortunately, there were several drawbacks in the procedure. First, the CPI data pertained only to the food component. More disaggregated information was not available. Second, the CPI data are annual in nature; they extend from July of one year to June of the following year (and so do not match perfectly the period over which the HES was carried out). Third, it was not possible to determine in which month a household was surveyed. Therefore, the adjustments to the unit values are on the crude side.

The comparison exercise generated a huge amount of data. Summary tables showing ratios of prices from the poverty-specific price surveys and unit values from the HES for some commonly featured items (selected based on budget share) are presented in Table 19. The tables include a column labeled "Remarks." The following is an explanation of the remarks.

- (i) No remarks. Products without remarks are considered to have good matches from the HES and the poverty-specific price surveys.
- (ii) Duplicate. A product from the HES tends to have a good match with two or more products from the poverty-specific price surveys (and vice versa).
- (iii) No conversion. There are problems in harmonizing the units of measurements

Table 19. Ratio of Poverty-Specific Survey Prices and Household Expenditure Surveys Unit Values for Selected Products (continued)

India (July 2004 to June 2005)								
Product		UOM	Remarks	Average Budget Share (%)	Price Ratios			
PPS	HES				PPS (Natl) to HES (Median)	PPS (Natl) to HES (Mean)	PPS (U/R) to HES (Median)	PPS (U/R) to HES (Mean)
Coarse rice, parboiled	Rice - other sources	1 kg	Duplicate	16.0	1.06	1.05	1.03	1.01
Ordinary coarse rice #1	Rice - other sources	1 kg	Duplicate	16.0	1.11	1.09	1.08	1.06
Ordinary coarse rice #2	Rice - other sources	1 kg	Duplicate	16.0	1.03	1.02	1.00	0.99
Ordinary coarse rice #3	Rice - other sources	1 kg	Duplicate	16.0	0.92	0.91	0.89	0.88
Glutinous rice	Rice - other sources	1 kg	Duplicate	16.0	0.99	0.98	0.97	0.95
Wholemeal flour (Atta) - not subsidized	Wheat/atta - other sources	1 kg		9.0	1.59	1.45	1.55	1.41
Mustard oil - unrefined	Mustard oil	1 kg		5.8	1.03	1.03	1.02	1.03
Milk - not pasteurized (buffalo or cow)	Milk: liquid	1 L	Duplicate	5.0	1.15	1.08	1.16	1.08
Milk - pasteurized	Milk: liquid	1 L	Duplicate	5.0	1.25	1.17	1.27	1.19
Potato	Sugar - other sources	1 kg		4.0	1.11	1.13	1.07	1.08
White sugar	Potato	1 kg		3.9	0.98	0.98	0.95	0.95
Coarse rice, subsidized	Rice (PDS)	1 kg		2.9	1.07	1.06	1.04	1.03
Bidi cigarettes	Bidi	1 pc		1.9	1.13	1.00	1.20	1.06
Tea leaves	Tea: leaf	1 g		1.8	1.00	0.80	1.00	0.80
Onion	Onion	1 kg		1.8	1.31	1.26	1.25	1.20

PPS = poverty-specific price survey; HES = household expenditure survey; UOM = unit of measure; kg = kilogram; g = gram; pc = piece; L = liter; PDS = public distribution system.

between a product from the HES and the corresponding product from the poverty-specific price surveys.

- (iv) Ignoring conversion. These are cases where there is close correspondence between price and median unit values if two commodities of different units of measurements are not converted/harmonized (and poor correspondence if they are converted/harmonized on the basis of the units reported in the surveys). This may have happened because enumerators did not actually use the units reported in the HES.

The most appropriate comparison would be between the poverty-specific price survey data and the median unit values observed from the HES. It should be noted that the unit values cover all households below the poverty line. As the unit values are known

to have errors reflected as outliers, it is better to use the median prices derived from the HES.

The most notable observation in Table 19 is that poverty-specific price survey data are often above the median unit values. There are a few exceptions to this general observation. If the focus is on items that may be considered essential, like rice and milk, the poverty prices appear to be close to the median unit values observed.

Tables 20–23 list the results of some simple pairwise and Spearman rank correlations involving well-matched products as well as others.

The reported correlations show a strong correlation between unit values and prices from the poverty-specific price survey. However, strong correlations do not necessarily mean equality of prices from the poverty-specific price survey and unit

Table 19. Ratio of Poverty-Specific Survey Prices and Household Expenditure Surveys Unit Values for Selected Products (continued)

Indonesia						
Products		UOM	Remarks	Average Budget Share (%)	Price Ratios	
PPS	HES				PPS to HES (Median)	PPS to HES (Mean)
Coarse rice, subsidized	Rice (local, high quality, imported)	1 kg	Duplicate	28.4	0.31	0.30
Ordinary coarse rice #3	Rice (local, high quality, imported)	1 kg	Duplicate	28.4	1.32	1.29
Brown sugar	Granulated sugar	100 g	Duplicate, Ignoring conversions	4.5	1.11	1.04
White sugar	Granulated sugar	100 g	Duplicate, Ignoring conversions	4.5	1.30	1.22
Cooking oil - vegetable	Other cooking oil	250 ml		4.2	1.20	1.05
Coconut oil - unrefined	Coconut oil	250 ml		2.3	0.97	0.91
Onion	Shallot	250 g	Ignoring conversions	1.9	1.94	1.54
Salt	Salt	1 kg		1.6	16.43	10.63
Coffee powder	Coffee (ground, beans, instant)	100 g	Ignoring conversions	1.6	1.74	1.21
MSG (monosodium glutamate)	MSG (monosodium glutamate)	10 g	Ignoring conversions	1.1	1.39	1.01
Garlic	Garlic	100 g	Ignoring conversions	1.1	0.90	0.71
Chillis - fresh, green or red	Red chilli	100 g	Ignoring conversions	1.0	0.76	0.73
Tea - dust	Tea	50 g	Ignoring conversions	1.0	0.85	0.72

PPS = poverty-specific price survey; HES = household expenditure survey; UOM = unit of measure; kg = kilogram; g = gram; ml = milliliter.

value prices but they tend to exhibit a strong linear relationship. As already mentioned, the median unit values tend to be generally below the poverty prices. A point to note here is that what is required is a PPP that adequately represents prices paid by those households that are located around the poverty line. If price tends to increase with income, it may be that unit values for households around the poverty line may even be closer to the prices collected through the poverty-specific price surveys.

Suitability of Poverty-Specific Price Survey Data to Represent Prices Paid by the Poor

The analysis presented here provides useful insights regarding the suitability of the price data from the poverty-specific price surveys for representing the prices paid by the poor. The preliminary analysis gives encouraging signs. However, the results have

to be interpreted with caution. In attempting a comparison between poverty-specific price survey data and HES unit values, a number of adjustments had to be made. Further, the price data for poverty-specific price surveys were collected in late 2006 and adjusted backward using CPI data usually available at an aggregated level.

Notwithstanding these adjustments, the two sets of prices show encouraging consistency reflected in strong correlations, especially when the correlations are computed using unit values for products that may be considered as good quality matches. In general, the poverty-specific price survey data tend to be higher than the median unit values computed. For a number of important items like rice and cooking oil, the differences between unit values and poverty-specific price survey data are only marginal.

Table 19. Ratio of Poverty-Specific Survey Prices and Household Expenditure Surveys Unit Values for Selected Products (continued)

Nepal						
Products		UOM	Remarks	Average Budget Share (%)	Price Ratios	
PPS	HES				PPS to HES (Median)	PPS to HES (Mean)
Coarse rice, subsidized	Coarse rice	1 kg	Duplicate	28.1	1.04	0.98
Ordinary coarse rice #1	Coarse rice	1 kg	Duplicate	28.1	1.16	1.09
Mustard oil - unrefined	Mustard oil	250 ml		6.6	0.88	0.91
Wheat flour - loose	Wheat flour	1 kg		4.9	1.90	1.83
Coarse rice, parboiled	Fine rice	1 kg		3.0	1.28	1.23
Salt	Salt	1 kg		2.8	1.41	1.28
Maize Flour	Maize flour	1 kg		2.6	1.66	1.64
Beaten rice (Chira)	Beaten rice (Chira)	500 g		2.4	1.22	1.20
Chicken - nonspecific cuts	Chicken	250 g		2.3	1.04	1.04
Potato	Potatoes/Colosia	500 g		2.3	1.58	1.59
Ruai/carp	Fish	500 g	Duplicate	2.1	1.36	1.32
Small fresh fish	Fish	500 g	Duplicate	2.1	1.15	1.11
White sugar	Sugar	100 g		1.9	1.32	1.26
Dhal - Musur	Lentil (Masuru)	250 g		1.6	0.99	1.03

PPS = poverty-specific price survey; HES = household expenditure survey; UOM = unit of measure; kg = kilogram; g = gram; ml = milliliter.

**Table 20. Pairwise Correlation:
All Matched Items**

Poverty Survey	Household Expenditure Survey		
	Median	Mean	Observations
Bangladesh	0.881	0.885	52
India (National ^a)	0.896	0.891	75
India (Urban/Rural ^{**})	0.901	0.896	75
India (National ^a) - 2005	0.895	0.898	75
India (Urban/Rural ^{**}) - 2005	0.900	0.902	75
Indonesia	0.788	0.779	33
Nepal	0.964	0.970	21

* Poor households were defined on the bases of official/national poverty lines (upper poverty lines for Bangladesh).

** Average computed using household sample weights.

**Table 22. Spearman Correlation:
All Matched Items**

Poverty Survey	Household Expenditure Survey		
	Median	Mean	Observations
Bangladesh	0.889	0.903	52
India (National ^a)	0.958	0.957	75
India (Urban/Rural ^{**})	0.958	0.958	75
India (National ^a) - 2005	0.959	0.957	75
India (Urban/Rural ^{**}) - 2005	0.959	0.957	75
Indonesia	0.756	0.761	33
Nepal	0.962	0.962	21

* Poor households were defined on the bases of official/national poverty lines (upper poverty lines for Bangladesh).

** Average computed using household sample weights.

**Table 21. Pairwise Correlation:
Only "Good" Matched Items**

Poverty Survey	Household Expenditure Survey		
	Median	Mean	Observations
Bangladesh	0.948	0.904	38
India (National ^a)	0.985	0.984	51
India (Urban/Rural ^b)	0.988	0.987	51
India (National ^a) - 2005	0.983	0.988	51
India (Urban/Rural ^b) - 2005	0.986	0.990	51
Indonesia	0.788	0.779	33
Nepal	0.964	0.970	21

^a and ^b: See Step 3 in the subsection on comparison of unit values and poverty-specific price survey data.

Note: "Good" matched items include correct matches, duplicates, and those whose conversions were ignored due to the credibility of the household expenditure survey.

**Table 23. Spearman Correlation:
Only "Good" Matched Items**

Poverty Survey	Household Expenditure Survey		
	Median	Mean	Observations
Bangladesh	0.953	0.912	38
India (National ^a)	0.989	0.988	51
India (Urban/Rural ^b)	0.990	0.989	51
India (National ^a) - 2005	0.989	0.988	51
India (Urban/Rural ^b) - 2005	0.990	0.989	51
Indonesia	0.756	0.761	33
Nepal	0.962	0.962	21

^a and ^b: See Step 3 in the subsection on comparison of unit values and poverty-specific price survey data.

Note: "Good" matched items include correct matches, duplicates, and those whose conversions are ignored due to the credibility of the household expenditure survey.

Conclusion

At the beginning of this chapter, a number of questions that cast doubt on the feasibility of conducting price surveys to capture prices paid by the poor were canvassed. The main purpose of this chapter is to report the results from surveys conducted specifically for the purpose of compiling poverty PPPs. This chapter described the processes followed in preparing the product lists and the surveys designed to capture the prices paid by the poor. The analysis using the Quaranta tables for data validation reveals that the price data collected as part of the poverty-specific price surveys are of high quality. This is partly due to the fact that the product list is small and the participating countries appeared to have benefited from their prior ICP price survey experience. The preliminary analysis juxtaposing the poverty-specific price survey data and prices from the 2005 ICP Asia Pacific price surveys shows the plausibility of the

prices. Contrasting the poverty-specific price survey data with unit values for commodities that could be matched between HES and poverty-specific price surveys also reveals a high degree of consistency. On the basis of the preliminary analysis, it appears that it is possible to design and conduct surveys especially for the purpose of collecting prices of goods and services that are typically purchased by the poor from the most commonly used outlets. The analysis conducted here suggests the need for further investigation of the data from those two important sources.

The next step, which will be considered in Chapter 7, is to examine if prices from the poverty-specific price surveys are likely to make a big difference to the poverty PPPs compared with the PPPs derived, as suggested by the PAG, using 2005 ICP Asia Pacific basic heading PPPs with expenditure weights for the poor.