International Comparisons of Poverty in South Asia

TM Tonmoy Islam, David Newhouse, and Monica Yanez-Pagans*

This paper explores the methodological differences underlying the construction of the national consumption aggregates that are used to estimate international poverty rates for South Asian countries. The analysis draws on a regional dataset of standardized consumption aggregates to assess the sensitivity of international poverty rates to the items included in the national consumption aggregates. A key feature of the standardized aggregate is that it includes the reported value of housing rent for urban Indian homeowners. Using the standardized consumption aggregates reduces the international poverty rate in South Asia by 1.3 percentage points, impacting the status of about 18.5 million people. Comparing standardized and nonstandardized monetary welfare indicators to other nonmonetary indicators suggests that the latter are more consistent with the standardized consumption aggregates. Overall, the results strongly suggest that harmonizing the construction of welfare measures, particularly the treatment of imputed rent, can meaningfully improve the accuracy of international poverty comparisons.

I. Introduction

The World Bank has set an ambitious target to eradicate extreme poverty globally by 2030. Evaluating progress toward this goal requires a solid data infrastructure. In April 2013, the World Bank set two goals to guide its work in the coming years—the first is to eradicate extreme poverty from the world by 2030, while the second is to promote shared prosperity. The first goal will be achieved if the incidence of extreme poverty falls below 3% by 2030, while the second goal

can be attained by increasing the average welfare of those who earn at the 40th percentile or below in each country (Jolliffe et al. 2014). To achieve the first goal, it will be important to allocate resources to countries where extreme poverty is most prevalent. However, poverty comparisons across countries are partly influenced by the quirks of each country's surveys. A thorough analysis is needed to understand the similarities and differences of these survey data collection procedures and how much they affect reported poverty rates.

Extreme poverty is measured using the international poverty line, currently set at $1.9 per person per day in 2011 dollars (hereafter: international poverty rate).[1] Anyone consuming less than that amount, or earning less than that amount in countries that use income rather than consumption as their primary welfare measure, is assumed to be extremely poor. In addition, each country sets its own official poverty line to assess national poverty, with the line depending on the levels of consumption in each country. Therefore, official poverty lines and the subsequent national poverty rates generated using these lines are not comparable across countries (hereafter: national poverty rates). To generate international poverty estimates, the World Bank has created an international poverty line, which is applied consistently to all countries to monitor extreme poverty. A poverty line of $1 per day was first estimated in 1990 and has been repeatedly updated to take into account changes in the purchasing power parity of countries (Ravallion, Chen, and Sangraula 2009).[2] The last update of the international poverty line was done in 2015, when it was raised to $1.9 per person per day according to the 2011 values of purchasing power parity exchange rates (Ferreira et al. 2016).

Globally, the extreme poor are concentrated in sub-Saharan Africa and South Asia. Table 1 shows the number and proportion of the extreme poor in 2013 by global region. On average, 12.6% of the world's population, or about one in eight people, lives in extreme poverty. Sub-Saharan Africa and South Asia have the highest and second-highest number and proportion of the world's extreme poor, respectively, with 50.7% and 33.4% of the world's extreme poor living in these two regions.

A recent report by the Commission on Global Poverty to improve global poverty monitoring highlights the considerable uncertainty in global poverty estimates. Since adopting the twin goals mentioned above, the World Bank has devoted considerable attention to improving its measure of extreme poverty. As

---

[1]This line was calculated in the following way: (i) the national poverty lines of 15 poor countries were selected; (ii) those poverty lines were inflated to 2011 levels using the consumer price index (CPI) of those countries; (iii) the inflated poverty lines were then converted to United States (US) dollars using 2011 purchasing power parity (PPP); and (iv) those US dollar-denominated poverty lines at PPP were averaged to come up with a new poverty line, which was close to $1.9 per person per day. The countries in the reference category are Chad, Ethiopia, the Gambia, Ghana, Guinea-Bissau, Malawi, Mali, Mozambique, Nepal, Niger, Rwanda, Sierra Leone, Tajikistan, Tanzania, and Uganda (Ferreira et al. 2016).

[2]For more information, consult the World Bank. 1990. *World Development Report 1990*. https://openknowledge.worldbank.org/bitstream/handle/10986/5973/WDR%201990%20-%20English.pdf?sequence=5.

Table 1. **International Poverty Rate at $1.9 per Day and Number of Extreme Poor by Region, 2013**

Region	International Poverty Rate (%)	Number of Extreme Poor (million)
East Asia and Pacific	3.54	71.02
Europe and Central Asia	2.15	10.30
Latin America and the Caribbean	5.40	33.59
Middle East and North Africa	na	na
South Asia	15.09	256.24
Sub-Saharan Africa	40.99	388.72
World average	12.55	766.01

na = not available.
Note: All amounts are based on 2011 purchasing power parity.
Source: Authors' estimates based on World Bank. PovcalNet. http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx (accessed September 15, 2017).

part of this effort, the World Bank established the Commission on Global Poverty, chaired by Sir Anthony Atkinson, to come up with different recommendations on how to improve the measurement and monitoring of global extreme poverty. The commission's report highlighted shortcomings in the global poverty measurement infrastructure in detail and offered several suggestions on how to improve the monitoring of global extreme poverty.

An important recommendation provided by the Commission on Global Poverty's report is to calculate and include the "total error" of the poverty estimates for each country (World Bank 2016 and 2017). Specifically, Recommendation 5 suggests that poverty estimates should be based on a total error approach, evaluating the possible sources and magnitude of error, particularly nonsampling error and the error introduced by the process of determining the international poverty line. There are many factors that can affect the total error of international poverty rate estimates—such as incomplete coverage of the country's population, errors in measuring consumption data, errors in calculating the poverty line, use of the consumer price index (CPI) to deflate prices in a manner that may not be consistent with the consumption patterns of the poor, and geographic differences in prices. Because the total error may be significant, the report recommended that the World Bank provide a margin of error to help policy makers understand the accuracy of the reported extreme poverty numbers. Although it would be difficult to implement, the World Bank concluded that reporting total error with poverty estimates is one of the report's most important recommendations.

South Asia is a useful laboratory to study how methodological differences in poverty measurement can contribute to total error. This is because South Asia is home to about one-third of the world's extreme poor, but the region consists of only eight countries, making the analysis both significant from a global perspective and tractable. In South Asia, all eight countries compare consumption per capita

against the poverty line to identify the international extreme poverty status of an individual.[3]

This paper provides new evidence from South Asia on how differences in the construction of the welfare measure in each country contributes to total error in international poverty measurement. To study this in detail, we look at how countries in the region construct the consumption aggregate to assess poverty. A key source of total error is the collection and aggregation of household-level data from different countries. While all countries collect household data to measure poverty, there are differences in the methodology and the content included in the survey questionnaire, which contributes to the total error of the subsequent international poverty rate obtained for each country. For example, the list of goods included in the surveys is not consistent. Additionally, the steps in the methodology used to construct the consumption aggregate vary from country to country, which then adds to the total error of the point estimates of the international extreme poverty rate.

We examine the following three aspects of the construction of consumption aggregates to see how each of them contributes to total error: (i) sampling and survey design, (ii) spatial deflation and intertemporal deflation, and (iii) construction of the nominal consumption aggregate. The core of the paper compares poverty rates using the national consumption aggregates, which currently form the basis for poverty measurement, to standardized consumption aggregates that attempt to adjust for differences in the three aspects described above. This exercise provides an assessment of the extent to which the international poverty rates depend on methodological differences in the construction of welfare aggregates across countries.

The remainder of this paper is organized as follows. Section II lists the data sources and international poverty rates for the eight South Asian countries. Section III explains the differences in sampling and design across the surveys used to estimate poverty in these countries. Section IV analyzes how spatial deflation accounts for cost-of-living differences and how intertemporal deflation affects international poverty estimates. Section V assesses the differences in estimating a national consumption aggregate across countries. Section VI examines the extent to which the international poverty rate in each country is correlated with other nonmonetary dimensions of well-being. Section VII concludes the paper.

II. Data and Poverty Rates

National and international poverty rates are estimated using nationally representative household-level surveys that collect detailed food and nonfood consumption data. Table 2 shows the household surveys that are used by the

---

[3]This contrasts with what most countries do in Latin America and the Caribbean and in Eastern Europe and Central Asia, which use per-income-based measures to monitor poverty rather than consumption-based ones.

Table 2.   **South Asian Household-Level Surveys Used to Estimate Poverty**

Country	Survey	Year
Afghanistan	Living Conditions Survey (ALCS)	2012
Bangladesh[a]	Household Income and Expenditure Survey (HIES)	2010
Bhutan	Living Standards Survey (LSS)	2012
India	National Sample Survey 68th Round (NSS)	2011
Maldives[b]	Household Income and Expenditure Survey (HIES)	2009/2010
Nepal	Living Standards Survey (LSS)	2010
Pakistan	Pakistan Social and Living Standards Measurement (PSLM)	2011
Sri Lanka	Household Income and Expenditure Survey (HIES)	2012

[a]Bangladesh conducted the latest round of the HIES in 2016–2017.
[b]Maldives conducted the latest round of the HIES in 2016, but the data were not yet available as of October 2018.
Source: South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Table 3.   **International Extreme Poverty Headcount for South Asian Countries**

Country	Year	International Poverty Rate (%)	Number of Extreme Poor (million)	GNI per Capita (2011 PPP)
Afghanistan	2011	na		$1,731.70
Bangladesh	2010	18.51	27.49	$2,783.56
Rural	2010	22.70	24.89	
Urban	2010	6.70	2.60	
Bhutan	2012	2.17	0.01	$6,452.00
India	2011–2012	21.56	239.10	$4,594.20
Rural	2011–2012	24.84	196.70	
Urban	2011–2012	13.38	42.39	
Maldives	2009	7.25	0.02	$9,714.40
Nepal	2010	14.89	4.20	$2,053.40
Pakistan	2011–2012	7.93	10.26	$4,516.50
Sri Lanka	2012–2013	1.92	0.38	$9,121.40

GNI = gross national income, na = not available, PPP = purchasing power parity.
Sources: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017); GNI per capita obtained from World Bank. World Development Indicators. https://datacatalog.worldbank.org/dataset/world-development-indicators (accessed September 15, 2017).

eight countries in South Asia to estimate poverty rates. Living standards vary considerably among countries in South Asia. Table 3 lists the international extreme poverty rates of each South Asian country, along with their gross national income (GNI) per capita and number of extreme poor. The international extreme poverty rate of each country has been determined by calculating the proportion of individuals whose per capita consumption aggregate is lower than the international poverty line. The GNI per capita for all South Asian countries is below $10,000, ranging from about $1,700 to about $9,700. Maldives and Sri Lanka have the highest and second-highest GNI per capita, respectively, while Afghanistan and Nepal have the lowest and second-lowest, respectively. International extreme

poverty rates also vary considerably in the region, largely in line with the patterns observed for GNI per capita, except for India. In Sri Lanka and Bhutan, the international extreme poverty rate is less than 3%. Pakistan and Maldives have an international extreme poverty rate in the range of 7%–8%. Nepal and Bangladesh have the highest international extreme poverty rates, ranging from 14% to 19%. India is one of the few countries in the world for which the World Bank traditionally reports international poverty rates by urban and rural regions; in rural and urban areas of India, 24.8% and 13.4% of the population live below the international extreme poverty line, respectively.[4]

According to official figures, the international poverty rate is the highest in India among the eight countries in the region. India also has the largest number of extreme poor among these countries, 239 million, which is about 28% of the world's extreme poor.[5] By far, most of the extreme poor in India are from rural areas. Bangladesh has the second-highest number of international extreme poor in South Asia (27 million) and Pakistan the third highest (10 million).

India's high rate of poverty may partly reflect methodological differences in the way in which countries construct their national consumption aggregates. The higher poverty rate in India compared to Bangladesh, for instance, is inconsistent with the GNI per capita metric, which is almost $2,000 higher for India than Bangladesh. This suggests that differences in the way in which consumption aggregates are constructed in each country might contribute to the total error. To study how the national consumption aggregates are constructed, we look at the latest rounds of household surveys available for these countries.

III. Assessing Differences in Sampling and Survey Design

In this paper, we examine eight aspects of sampling and survey design that are directly related to poverty measurement: (i) sampling design, (ii) monetary welfare measure, (iii) food consumption questionnaire and data collection methods, (iv) self-production and meals outside home, (v) nonfood durables, (vi) durables, (vii) housing expenditures, and (viii) health and education expenditures.

Sampling Design

Table 4 presents a summary of the sampling design for each of the eight countries in South Asia. With few exceptions, household-level surveys used to measure poverty in the region are nationally representative. Afghanistan, Bangladesh, and India do not survey all regions within the borders of their

---

[4]The other countries for which international poverty rates are reported separately for urban and rural areas are the People's Republic of China (PRC) and Indonesia.

[5]This proportion is calculated using PovcalNet data (accessed September 15, 2017).

Table 4. **Summary of Sampling Designs in Household-Level Surveys Used to Measure Poverty**

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Nationally representative?	Yes[a]	Yes[b]	Yes[c]	No[d]	Yes[e]	Yes[f]	Yes[g]	Yes
Sampling frame	Precensus household listing, conducted between 2003 and 2005	Population and Housing Census (2001)	Population and Housing Census (2005)	Rural: Indian Census Villages (2001); Urban: Urban Frame Survey	Population and Housing Census (2006)	National Population Census (2000)	Urban: FBS' urban frame (2003). Rural: Population Census (1998)	Census of Population and Housing (2011)
Response rate	89%	na	Urban: 92% Rural: 97%[c]	na	90%[e]	97%[f]	na	81%[h]
Rural household sample size	86.5% 20,828	59.0% 12,240	48.5% 8,968	59.0% 101,662	64.3%[i] 1,832	79.1% 7,180	60.5% 16,341	77.4%[j] 20,540
Sampling ratio	0.64	0.04	7.01	0.04	3.71	0.12	0.08	0.40
Individual sample size	159,224	55,580	39,825	464,960	11,588	34,815	108,933	80,534
Reference period (survey)	Apr 2011– Aug 2012[(1)]	Feb 2010– Jan 2011[b]	2012[c]	Jul 2011– Jun 2012[d]	Sep 2009– Sep 2010[e]	2010[f]	Jul 2010– Jun 2011[g]	Jul 2012– Jun 2013[h]

FBS = Federal Bureau of Statistics, na = not available.

[a]National Risk and Vulnerability Assessment 2011–2012, Afghanistan Living Conditions Survey Report. Helmand and Khost provinces were excluded from consumption information.

[b]Statistical Division of the Ministry of Planning, 2011 Bangladesh Household Income and Expenditures Survey: Key Findings and Report.

[c]Asian Development Bank, 2013 Bhutan Living Standard Survey 2012 Report.

[d]All States and Union Territories except Andaman and Nicobar Islands and the remote areas of Nagaland. Indian Central Statistical Office: Note on Sample Design and Estimation Procedure of the National Sample Survey 68th Round.

[e]Male: Sep. 2009–Jan. 2010; Atolls: Feb. 2010–Sep. 2010. Department of National Planning 2012, Household Income and Expenditures Survey 2009–2010.

[f]Central Bureau of Statistics, 2011 Nepal Living Standard Survey: Highlights.

[g]Statistic Division of the Government of Pakistan, Pakistan Social and Living Standards Measurement Report.

[h]Sri Lanka Department of Census and Statistics, 2015 Household Income and Expenditures Survey.

[i]Atolls are considered rural areas.

[j]There is an additional 5% in the estate sector, which consists of tea plantations.

Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

respective countries. In 2011–2012, Afghanistan excluded the provinces of Helmand and Khost from the survey for poverty measurement.[6] These two provinces had an estimated population of 864,600 (Helmand) and 537,800 (Khost) in 2012 (Government of Afghanistan, Central Statistics Organization 2017). The total population of Afghanistan in 2012 was about 24.8 million, so these two provinces combined represented around 5.7% of the population. Bangladesh did not traditionally include the slum population as part of the sampling frame for the Household Income and Expenditure Survey (HIES) until 2016–2017. According to the 2012 Bangladesh Bureau of Statistics' Census of Slum Areas and Floating Population, the slum population was about 2.22 million, which corresponds to 5.5% of the total population in urban areas (Government of Bangladesh, Bureau of Statistics 2012).[7] The 68th round of the National Sample Survey (NSS) from India excluded from its sampling frame the remote areas of Nagaland and Andaman and Nicobar Islands. The population of Andaman and Nicobar Islands is 0.38 million, while that of Nagaland is 1.98 million. Given that India had a population of 1,247 million in 2011, the share of the total population excluded from the survey was just 0.2%.

Sample sizes vary widely across household-level surveys used to measure poverty. Maldives surveys about 1,800 households, while India surveys over 100,000. The range of individuals covered by these household surveys varies from 11,500 in Maldives to over 464,000 in India. This translates to a wide span of sampling ratios—from 0.04% in Bangladesh to 7% in Bhutan.

Monetary Welfare Measure

Countries in the region use broadly similar methods to measure per capita consumption aggregates. All countries in South Asia use consumption rather than income to measure poverty. To estimate international poverty, total household consumption is divided by the number of individuals in the household to get a per capita estimate. This matches the methodology used by all countries in the region to estimate national per capita consumption aggregates, except for Pakistan. Pakistan uses per capita equivalence scales when measuring national poverty rates, though its international poverty rate is calculated using a simple per capita consumption aggregate metric.

---

[6]The provinces of Helmand and Khost were included in the household survey, but these are not used to estimate poverty as there are issues with consumption data quality in these two provinces.

[7]There is a longstanding debate in Bangladesh about the size of the slum population. The Census and Mapping of Slums collected by the Center for Urban Studies in 2009 estimated that 35.2% of the urban population in Bangladesh lived in slums, while the UN-Habitat Global Report on Human Settlements released in 2013 estimated the proportion of urban slum dwellers in 2009 at 61.6%.

Food Consumption Questionnaire and Data Collection Methods

The questionnaire design methodologies for recording the data vary considerably across countries in the region. A comprehensive study analyzing survey questionnaires from 100 low- and middle-income countries noted the large variation in the way surveys are designed in each country (Smith, Dupriez, and Troubat 2014). This variation is also apparent across the South Asian household survey questionnaires. Table 5 lists the contents of the questionnaires from South Asian countries, which show significant differences in the way food consumption data are collected.

An important source of differences is the number of food items in the consumption questionnaire. Surveys with more food items listed tend to elicit higher levels of consumption, which lowers the reported poverty rate (Lanjouw and Lanjouw 2001). Pakistan has the lowest number of food items listed in the survey at 69, while Sri Lanka has the highest at 227. Afghanistan, Maldives, Nepal, and Pakistan all have fewer than 100 food items listed in their survey, while India, Bangladesh, and Bhutan have 143, 141, and 130 items listed, respectively. Similarly, there is a large variation in the number of nonfood items listed in these surveys. Among nonfood expenditures, Nepal asks its respondents to recall only 95 items, Pakistan and Sri Lanka ask for 99 and 97 items, respectively, while Maldives lists 483 nonfood items for households to recall. India, Bangladesh, and Bhutan ask their households to recall whether they consumed 338, 221, and 122 nonfood items, respectively.

The collection of consumption data also varies from country to country. Consumption data are generally collected using two methods: (i) diary, where the household records all consumption data over a certain period in a notebook; or (ii) recall, where the household lists what they consumed over the past few days from memory. While the diary may seem to be a better method, in practice, interviewers often assist in completing the diary, effectively blurring the line between the two methods (Beegle et al. 2012). Sri Lanka uses both the diary and recall methods to collect consumption data, Maldives uses diary for all items, while other countries use recall to collect the data.

The length of consumption recall is another source of differences. Respondents are asked to recall their food consumption for the day, last week, last 2 weeks, and last month. For food items, Bangladeshi enumerators spend 2 weeks in the primary sampling unit, visiting each household seven times in a 2-week period. During each visit, the household is asked about their food consumption in the past 2 days, so this covers a total of 14 days of food consumption. In addition, information about spice consumption in Bangladesh is collected once a week during those 2 weeks. Bhutan asks the respondents to recall the last week, last month, and last year of food consumption. India and Maldives ask the households to recall food items consumed in the last month. Nepal asks for 1 week to 1 month of recall depending

Table 5. **Summary of the Consumption Questionnaire Design**

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Food expenditures (No. of items)	91	141	130	143	92	74	69	227[a]
Diary versus recall	Recall	Recall	Recall	Recall	Diary	Recall	Recall	Diary and recall
Reference period (Food consumption)	Daily and 7 days	Daily and weekly (for 2 weeks)	7 days, 1 month, and 1 year	1 month	1 month	1 week per typical month	2 weeks per month	1 week
Food quantities available	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes[b]
Nonfood expenditures (No. of items)	38	221	122	338	483	95	99	97[c]
Reference period (Nonfood expenditures)	1 and 12 months	1, 3, and 12 months	1 and 12 months	1 and 12 months	1 and 12 months	1 and 12 months	1 and 12 months	1, 6, and 12 months

COICOP = classification of individual consumption according to purpose.
[a]This includes six liquor and tobacco COICOP codes among food expenditures.
[b]Units of measure are specified in the questionnaire but not in the datasets.
[c]Tobacco and drugs excluded.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

on the item, and Pakistan asks for between 2 weeks and 1 month of recall. Lastly, in Sri Lanka, enumerators visit the household three times during a week and ask for information about food consumption through a diary, while the information on nonfood items is collected by recall. When it comes to nonfood items, the length of recall is 1 month and 12 months for Afghanistan, Bhutan, India, Maldives, Nepal, and Pakistan. Bangladesh asks respondents to recall the last 1, 3, and 12 months of nonfood consumption, while Sri Lanka asks for the last 1, 6, and 12 months.

Recall length has a large effect on the magnitude of the national consumption aggregates. For example, when India changed the length of recall of consumption goods from 30 days to 7 days, consumption numbers reported by households went up, and poverty rates fell by half (Deaton 2005). This simple change in the method of collecting data "lifted" 175 million Indians out of poverty. Similarly, Beegle et al. (2012) found that changing the recall period from 1 week to 2 weeks in Tanzania, while holding other things equal, increased the poverty rate from 55% to 63%. Joliffe (2001) and Gibson, Huang, and Rozelle (2001) also show that poverty and inequality measures are significantly sensitive to the income recall period.[8]

Self-Production and Meals Outside Home

Another difference in the construction of the national consumption aggregates is the treatment of miscellaneous consumption items like self-production and meals bought from outside. Besides food expenditures, there are generally several other categories of expenditures included in the national consumption aggregates. Table 6 summarizes the other food and nonfood items that South Asian countries include as part of the construction of the national consumption aggregates.

All countries include self-production in the national consumption aggregate, but the questionnaire design to extract information on home production varies across countries. Most countries ask separate questions about the value of home production and the value of either market or total consumption for each item. In Afghanistan, Bangladesh, and Maldives, however, households are only asked about the value of total item consumption and are asked to identify whether the primary mode of acquisition was through the market or home production.

With respect to food away from home, Bangladesh, Pakistan, and Sri Lanka do not include food or meals bought from outside the household as part of the national consumption aggregate, but other countries do. In Maldives, the survey asks the quantity of and expenditure on meals bought outside the household, while Nepal asks how many months in the past year the household purchased food from outside and the total estimated amount spent on it. Bhutan asks the number of times the members eat out in a month, number of those meals they pay for, and average

---

[8]For a general discussion of the issue and policy recommendation on questionnaire design, see also Browning, Crossley, and Weber (2003) and Gibson (2006).

Table 6. Summary of Other Food and Nonfood Items Included in the National Consumption Aggregates

	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Food expenditures								
Is self-production accounted for?[a]	Yes[a]	Yes[a]	Yes[b]	Yes	No[a]	Yes	Yes	Yes
Are meals outside the household accounted for?	Yes	No[c]	Yes[d]	Yes[e]	Yes[f]	Yes[g]	No	No
Nonfood expenditures								
Number of items included		193	85	286	401	62	74	47
Number of items excluded		10	26	0	28	35	31	35
Are consumer durables accounted for?	Yes	Yes[h]	Yes[h]	Yes[h]	No	Yes	No	Yes[h]
Housing								
Actual rent included?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Imputed rent included?	Yes	Yes[i]	Yes[i]	No	No	Yes[j]	Yes[i]	Yes[i]
Health and education								
Health expenditures?	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Education expenditures?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Others								
Main items excluded	Weddings, celebrations, donations, talisman, and other miscellaneous expenditures	Occasional expenditures, income tax, interest charges, and insurance	Agricultural input, tax and insurance, and other	None	Occasional expenditure, durables, rent, mortgage, and loan brokerage services	Occasional expenses[k]	Occasional expenditures, durables, tax, and annual items[l]	Occasional expenditures, tax, insurance, and contributions funds, durables

COICOP = classification of individual consumption according to purpose.
[a] Total consumption, including self-production, is reported in one question per item. In other countries, market and self-production are reported separately for each item.
[b] Self-production is also accounted for among nonfood items (Block 10 of the questionnaire).
[c] Questionnaire: Section 9A2 item 14.
[d] Questionnaire: Variables at the end of Block 8.
[e] Questionnaire: Block 12, served processed food and packaged processed food.
[f] COICOP: 1111.
[g] Section 5: COICOP 131.
[h] No consumption flow estimated, expenditure items included at purchase price.
[i] Questionnaire reports market equivalent values.
[j] Questionnaire reports market equivalent values; outliers and missing imputed using prediction from hedonic regressions.
[k] Some of the infrequent expenses have been kept, most notably legal expenses and insurance.
[l] Annual license fees (e.g., television, videocassette recorder, and dish antenna); annual license fee for arms.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

price of each meal. On the other hand, India includes the number of meals each member of the household consumes per month away from home and the price of cooked meals purchased during the past 30 days.

Accounting for meals eaten outside of the household can have huge implications on poverty rates. A study from Peru showed that including the consumption of food eaten outside the home raises the extreme poverty rate by 18% (Farhan, Genoni, and Vakis 2015). Furthermore, most household surveys lack proper data collection methods for food eaten outside the home. In a recent analysis of household surveys globally, 90% of the surveys asked about food eaten away from home, but few had any additional follow-up questions (Smith, Dupriez, and Troubat 2014). Only 23% of the surveys in the study collected expenditure data on food eaten away from home, and 17% collected data on meals eaten outside the home at the individual level. This becomes an increasingly significant issue as countries develop and a larger share of food is consumed outside the home.

Nonfood, Nondurable Items

Most countries include nonfood, nondurable items, but the number of items included varies from country to country. Sri Lanka includes just 47 items, while Bhutan, Nepal, and Pakistan include between 60 and 85 items. On the other hand, Bangladesh and India include over 190 items, and Maldives lists 401 items.

Consumer Durables

When it comes to consumer durable goods, Maldives and Pakistan do not include them in the consumption aggregate, but the rest of the countries do. In Afghanistan and Nepal, the monthly value of the consumption of durables is imputed, following recommended practice (Deaton and Zaidi 2002). In Bangladesh, Bhutan, India, and Sri Lanka, however, only the previous year's expenditures on consumer durables are included.

Housing Expenditures

All countries in South Asia include actual rent for urban and rural areas, except for India and Maldives, which do not include imputed rent for homeowners. However, Deaton and Zaidi (2002), in their comprehensive study about how to construct consumption aggregates, recommended including imputed rent for homeowners in their consumption aggregate and only excluding it in extreme cases. The India NSS asks urban homeowners, but not rural homeowners, to estimate rent. Although the NSS collects imputed rent from urban dwellers, this is not included in the consumption aggregate of urban dwellers.

Health and Education Expenditures

All countries except for Afghanistan and Nepal have an estimate of health expenditures included in the national consumption aggregate. All countries include education expenditures in their national aggregate.

IV. Spatial Deflation to Account for Cost-of-Living Differences and Intertemporal Deflation

Spatial Deflation of National Consumption Aggregates to Account for Cost-of-Living Differences

Spatial deflation is an important requirement to properly assess the number of poor by adjusting for cost-of-living differences across geographical areas so that poverty is not overstated in low-cost areas. For example, prices are generally higher in urban areas compared to rural areas, meaning that an urban household would need to spend more to maintain the same standard of living as that of a rural household. Failing to adjust for cost-of-living differences overestimates poverty in rural areas and underestimates it in urban areas. Empirically, many studies have shown the importance of using regional price indexes. For example, Hill and Syed (2015) show that using urban–rural price differentials reduces the gross domestic product estimate of the People's Republic of China (PRC), and Weinand and von Auer (2020) show a wide dispersion of prices in different regions of Germany.

However, it could be difficult to collect regional prices for all goods and services. To circumvent this issue, some research have promoted the use of the Engel curve approach to deflate expenditures across regions and time instead of using the national CPI to deflate prices, leading to a more accurate spatial deflator.[9] For example, Almas and Johnsen (2012) showed that using regional price indexes to deflate expenditures in the PRC resulted in a modest reduction in national poverty over time and a larger increase in inequality. They also found that using the regional price deflator understates the fall in the $1 per day poverty measurement in rural areas compared to using CPI as a price deflator, but not the $2 per day poverty measurement. Using the Engel curve to deflate prices in India would overstate the national poverty rate in that country by about 4 percentage points in both rural and urban areas (Almas, Kjelsrud, and Somanathan 2019). However, the Engel curve approach is not foolproof; the example of Viet Nam shows that it is not a good

---

[9]The Engel curve approach states that expenditure on food as a proportion to total income should fall as incomes rise. That is, if in two similar households the proportion of income spent on food is the same, then their real incomes must be equal. Using this approach, the regional price indexes are estimated using household food shares as the dependent variable, and demographic controls, income, and regional dummies as regressors. The coefficients of the regional dummies give regional price indexes.

proxy of price indexes that are constructed from actual regional prices (Gibson, Le, and Kim 2017; Gibson and Le 2018).

The other issue is whether housing costs should be included in spatial cost-of-living adjustments and how to incorporate the rental value of owner-occupied housing. Almas and Johnsen (2012) use 8% of housing value as a proxy for rent and adjust for housing debt and subsidies to obtain the true cost of housing. They find that including imputed rent into a spatial deflator reduced rural poverty rates in 1995 compared to using spatial deflators without imputed rent. However, rural poverty rates in 2002 and urban poverty rates in both 1995 and 2002 were virtually the same regardless of whether the spatial deflator had imputed rental values or not. Gibson, Le, and Kim (2017) used a hedonic price model to estimate rental values and found that including the imputed rental values has a marginal effect on the spatial price indexes.

International poverty rates in the region in most cases are based on welfare aggregates that are not spatially deflated. While all South Asian countries carry out spatial deflation when calculating their national poverty estimates, the World Bank currently only spatially deflates the welfare measures in Bhutan and Nepal when calculating international extreme poverty rates. Bhutan uses a survey-based price index to deflate prices. In this case, the spatial price indexes are derived using information from the survey. Similarly, Bangladesh and Nepal use an implicit spatial price index to deflate prices, which is constructed using region-specific poverty lines to determine the cost-of-living differences (Deaton and Muellbauer 1980).[10]

Table 7 shows the international poverty rates using the nominal and spatially deflated national consumption aggregates. Overall, the absence of spatial deflation in calculating extreme poverty rates might have a minor effect on the estimation of country-level international poverty rates, but it can have substantial impacts on international poverty measurement across regions and within countries. In all South Asian countries except for Nepal, the impact of spatial deflation is nontrivial. Without spatial deflation, urban areas have less poverty and rural areas have more poverty. For example, spatial deflation causes Nepal's urban poverty rate to be 4.3 percentage points higher and rural poverty rate to be 7.1 percentage points lower, compared with their respective nominal rates. If Bangladesh spatially deflated its consumption aggregates, then it would see an urban extreme poverty rate 3.3 percentage points higher and a rural extreme poverty rate 4.7 percentage points lower.

---

[10]As an illustrative example, consider a country with two regions. The poverty line in a region can be interpreted as the cost of achieving a reference utility level in that region. The ratio between the poverty lines in two regions can be interpreted as a true-cost-of-living index—that is, a spatial price index. Thus, the ratio between the regional poverty lines gives the cost of achieving the reference utility level in region 1 relative to region 2. This method makes strong assumptions including that the unobserved reference utility level underlying the poverty lines is constant across regions.

Table 7.   **International Extreme Poverty Rate in Urban and Rural Areas, With and Without Spatial Deflation**

	International Poverty Rate (%)		Urban international Poverty Rate (%)		Rural International Poverty Rate (%)	
	Nominal	**Spatially Deflated**	**Nominal**	**Spatially Deflated**	**Nominal**	**Spatially Deflated**
Bangladesh	18.5	16.0	6.7	10.0	22.8	18.1
Bhutan	2.2	2.2	0.21	0.2	3.4	3.1
India	21.6	19.4	13.4	26.4	24.8	16.5
Maldives	7.3	7.3	3.9	5.8	10.2	9.2
Nepal	20.0	14.9	4.7	9.0	23.4	16.3
Pakistan[a]	8.3	7.0	2.8	3.1	10.7	9.0
Sri Lanka	1.9	1.7	0.3	0.4	2.3	2.0

[a]Pakistan's values are from 2010.

Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Therefore, following Gibson, Le, and Kim (2017), it would be beneficial to collect regional price data for different durable and nondurable goods, and services. The rental cost of housing should also be collected regionally to impute the rental rate of owner-occupied housing, following Weinand and von Auer (2019), who show that housing cost is a major driver of cost-of-living variation. While the household expenditure surveys collect consumption amounts and total expenditures for each food and nonfood item at the household level, the market prices of the items are not generally collected. Thus, to get a better estimate of regional price deflators, statistical agencies need to incorporate the collection of market prices of different items in the household surveys.

Intertemporal Deflation

As the survey year may not align with the year the $1.9 international poverty line was estimated (2011), the international poverty line might need to be intertemporally deflated before it is applied to the national consumption aggregates of some countries. To do so, the international poverty line set in 2011 dollars is converted to local currency using the 2011 purchasing power parity (PPP) conversion factor. This number is then intertemporally deflated to the year the survey was undertaken, usually using the respective CPI of each country.

Table 8 lists the country-level CPI and PPP that are used to intertemporally deflate the international poverty line to local currency units. For example, to calculate the international poverty line expressed in Bangladeshi takas for the year 2010 so that it can be applied to the 2010 HIES, we do the following. First, the 2011 PPP for Bangladesh (24.85) is multiplied by the international poverty line ($1.9), and this is then deflated using the intertemporal deflator (0.9). Thus, the

Table 8. **Intertemporal Deflators**

Country	Year	2011 PPP	Intertemporal Deflator
Afghanistan[a]	2012	na	na
Bangladesh	2010	24.85	0.90
Bhutan	2012	16.96	1.11
India	2011–2012	13.78	1.04
Rural	2011–2012	12.91	1.03
Urban	2011–2012	15.69	1.04
Maldives	2009	10.68	0.87
Nepal	2010	25.76	0.93
Pakistan	2011–2012	25.41	1.05
Sri Lanka	2012–2013	42.22	1.11

na = not available, PPP = purchasing power parity.
[a]Afghanistan is not included in PovcalNet because it lacks a PPP deflator, and the government is not comfortable using a regression-based PPP.
Note: All countries use the consumer price index except for Bangladesh, which uses the Basic Need Price Index.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

daily international poverty line expressed in local currency comes out to be: $1.9 \times 24.85 \times 0.9 = 42.65$ takas.

All countries in South Asia except for Afghanistan and Bangladesh use the CPI to deflate the international poverty line. Bangladesh uses the Basic Need Price Index that is constructed based on Bangladesh's population-weighted upper poverty lines to measure changes in the cost of basic needs. This methodological approach was adopted for Bangladesh because Gimenez and Jolliffe (2014) argued that the weights used to construct the CPI are not representative of the consumption pattern of the poor. This view aligns with Recommendation No. 9 of the World Bank's (2017) report on *Monitoring Global Poverty*, which specifies that countries should consider using a price index for the poor. It is also consistent with the belief that price changes implied by the Bangladesh survey data are closer to changes in the poverty line than the CPI.

While the CPI shows how the expenditure to purchase a specific bundle of goods consumed by the average consumer changes nationally, there are a few problems with using the CPI as a deflator for poverty measurement: (i) unit-value changes of some consumption items can vary from the CPI for this item; (ii) the CPI measures how price changes nationally and not by region, so it does not reflect price changes of specific regions of the country; or more importantly, it may not accurately identify the poor in regions with high levels of deprivation; and (iii) the goods in the poor's basket may not align well with the CPI basket, as the extremely poor may consume items that are different from that of a typical consumer. This last point is validated by Dupriez (2007) and Deaton and Dupriez (2009, 2011), who document that the expenditure patterns of poor households are different from the

pattern observed in the System of National Accounts.[11] One limitation of our study is that we do not have access to satisfactory country-level price deflators that reflect the consumption bundle of the poor (because most governments do not produce such data), so we have to rely on the country-level price deflators instead to deflate the consumption expenditures. However, a recent study by Deaton and Dupriez (2011) investigating how sensitive world poverty numbers are to different deflators (i.e., PPP exchange rates and poverty-weighted PPPs) finds that the worldwide international poverty numbers are not very sensitive to the choice of the deflator.[12] Deaton and Dupriez (2011) and Castañeda et al. (2016) show that subnational spatial deflation is not the main factor in explaining cross-country differences in poverty in South Asia. In fact, whether or not one spatially deflates aggregates having only minor effects on national poverty rates in South Asia gives our poverty exercise practical validity.[13]

This section has shown that there are many sources that can substantially contribute to the total error of poverty estimates and influence international poverty comparisons. The comparison of survey design and sampling methodologies shows that differences in data collection methods across countries are relatively minor. The main source of total error involves differences in how consumption is collected and aggregated at the household level, particularly the way in which countries treat actual and imputed rent. In addition, the use of poverty lines to deflate intertemporal prices instead of the CPI can also contribute to total error in the international poverty rate estimates in the case of Bangladesh.

V. Assessing Differences in Estimating National Consumption Aggregates

Standardized versus National Consumption Aggregates

Because of the wide variation in the way consumption data are collected by each country, the World Bank developed a standardized dataset of consumption aggregates.[14] The standardization of the consumption aggregates was constructed by reclassifying expenditure items into the categories adopted by the International Comparison Program—which has 110 basic headings, 91 classes, 43 groups, and 13 categories—and designing strict data cleaning procedures to ensure consistency in

---

[11]Sen (1979) offers a thorough review of the pitfalls of using different price deflators (Laspyeres and Paasche Indexes) to obtain real income for welfare analysis.

[12]The paper measures the PPP exchange rates and the poverty-weighted PPPs using the Fisher Ideal Index, which is the geometric mean of the Laspeyres and Paasche Indexes, as well as the Törnqvist Index and the weighted country-product-dummy index.

[13]We also acknowledge if we are not measuring national poverty rates and instead focus on analyzing subnational poverty rates, then a local price deflator would be more appropriate.

[14]As mentioned previously, we use the term national consumption aggregates to refer to the consumption aggregates created by the statistical offices of the respective countries, while the standardized consumption aggregates refer to the consumption aggregates obtained from the standardized consumption datasets created by the World Bank.

the standardization.[15] However, this standardization has limitations (Dupriez 2007). Although consumption aggregates are standardized in the sense that they use a common data dictionary, the method of data collection and questionnaire designs affect the standardization directly and cannot be addressed.

Table 9 shows the average per capita consumption using both the standardized and national consumption aggregates.[16] The table shows that, for the most part, there is not a large difference in expenditure per capita between the two aggregates. One exception is housing expenditure in urban India. Using the national consumption aggregates, imputed rent amounts to $0.7 per day (2011 PPP), but when imputed rents for homeowners are included in the standardized consumption aggregate, the housing expenditure jumps to $1.6 (2011 PPP). The standardization of the consumption aggregates decreases housing expenditure in Bhutan and Sri Lanka. Sri Lanka also sees a fall in food and nonfood (nondurable) expenditures due to the standardization process.

Table 10 shows the budget shares for each category of goods and services using both the standardized and national consumption aggregates. Maldivian households only spend 37% of consumption expenditures on food, on average, and 53% on nonfood nondurables.[17] Households in the remaining countries spend between 44% and 59% of their consumption expenditures on food and somewhere between 18% and 29% on nonfood nondurables. Except for India, all South Asian countries spend around 10% of their consumption expenditures on health, education, and durable goods combined, with India spending at a slightly higher rate of 12%. Housing, which includes rent, imputed rent (if included in the national consumption aggregate), and expenditures on utilities range widely from a low of 6% in Nepal to a high of 33% in Maldives.

Within India, rural households spend 8 percentage points more on food, reflecting lower levels of well-being in rural India. There is some difference between housing expenditures: while rural Indian households report spending an average of 12% of their budget on housing, urban Indian households spend an average of 16% (excluding imputed rent). This implies that much of the difference in poverty rates between rural India and the rest of South Asia is driven by the lack of housing expenditure (imputed rent) data in the national consumption aggregate for rural India.

---

[15]A detailed description of the standardization of the consumption aggregates in South Asia is available in Dupriez (2007).

[16]In Table 9 and subsequent tables, we use the Uniform Reference Period (URP), which collects expenditure data on all goods over a 30-day period. India also reports the Mixed Reference Period, in which food expenditures are collected in 7- and 30-day periods, and other nonfood consumption is collected over a 365-day period (World Bank 2018). The World Bank currently uses the URP method of collecting expenditure data to measure consumption expenditures. Thus, we use the URP method here to determine household-level consumption. However, from 2020 onward, the World Bank will use the Modified Mixed Reference Period, where expenditures will be collected over a recall of 7-, 30-, and 365-day periods, depending on the category of the good (World Bank 2018).

[17]These are plutocratic rather than democratic shares.

Table 9. Average Daily per Capita Expenditure by Category of Goods and Services ($)

	Bangladesh			Bhutan	India			Maldives	Nepal	Pakistan	Sri Lanka
	All 2010	Rural 2010	Urban 2010	2012	All 2011–2012	Rural 2011–2012	Urban 2011–2012	2009	2010	2011–2012	2012–2013
National consumption aggregates											
Food	1.9	1.8	2.4	2.5	1.6	1.5	1.9	1.8	2.0	2.0	3.2
Nonfood nondurables	0.8	0.7	1.1	2.5	1.0	0.8	1.4	3.3	1.5	0.9	2.9
Health	0.1	0.1	0.2	0.5	0.3	0.2	0.3	0.5		0.1	0.3
Education	0.3	0.2	0.5	0.2	0.2	0.1	0.4	0.2	0.2	0.1	0.3
Durable goods	0.1	0.1	0.1	0.1	0.5	0.4	0.7		0.3		0.2
Housing	0.6	0.4	1.0	1.7	0.4	0.3	0.7	1.6	0.3	0.9	2.0
Total	3.7	3.1	5.2	7.5	4.1	3.5	5.6	7.4	4.3	4.0	8.8
Standardized consumption aggregates											
Food	1.8	1.6	2.2	2.5	1.5	1.5	1.7	1.7	2.0	1.8	2.7
Nonfood nondurables	0.7	0.6	1.0	2.2	1.1	0.9	1.5	2.1	0.9	1.0	1.6
Health	0.1	0.1	0.1	0.3	0.2	0.2	0.2	0.5	0.4	0.1	0.3
Education	0.2	0.1	0.3	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
Durable goods	0.1	0.0	0.1	0.4	0.1	0.1	0.2	0.9	0.5	0.1	0.3
Housing	0.5	0.4	0.9	1.3	0.7	0.3	1.6	1.8	0.3	0.8	1.1
Total	3.3	2.9	4.6	6.7	3.7	3.0	5.4	7.1	4.2	4.0	6.0

Notes: All amounts are based on 2011 purchasing power parity. India's consumption aggregates reported are based on the Uniform Recall Period.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Table 10. Budget Shares by Category of Goods and Services (%)

	Bangladesh			Bhutan	India			Maldives	Nepal	Pakistan	Sri Lanka
	All 2010	Rural 2010	Urban 2010	2012	All 2011–2012	Rural	Urban	2009	2010	2011–2012	2012–2013
National consumption expenditure											
Food	58	61	53	45	51	54	46	37	57	52	45
Nonfood nondurables	19	19	20	28	25	24	27	53	27	21	25
Health	4	4	3	4	5	6	5	7	0	3	2
Education	5	4	8	3	4	2	4	3	5	2	2
Durable goods	1	1	1	<1	3	3	3	0	4	0	1
Housing	14	13	18	19	13	12	16	33	6	21	22
Total	100	100	100	100	100	100	100	100	100	100	100
Standardized consumption aggregate											
Food	57	59	52	44	46	51	34	29	53	48	50
Nonfood nondurables	20	20	20	30	28	28	28	28	20	23	24
Health	3	3	3	3	5	5	4	7	9	3	5
Education	6	5	8	2	2	2	3	3	4	3	5
Durable goods	2	2	2	3	2	2	2	12	7	2	3
Housing	14	13	19	19	17	12	29	21	8	21	18
Total	100	100	100	100	100	100	100	100	100	100	100

Notes: India's consumption aggregates reported are based on the Uniform Recall Period.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Table 11.   **International Extreme Poverty Rate in South Asia Using the Standardized and National Consumption Aggregates**

	Year	Standardized Consumption Aggregates (1)	National Consumption Aggregates (2)	Difference (1) − (2) (3)
Bangladesh	2010	19.44	18.52	0.92
Rural	2010	23.86	22.74	1.12
Urban	2010	7.01	6.67	0.34
Bhutan	2012	3.49	2.17	1.32
India	2011–2012	19.61	21.56	−1.95
Rural	2011–2012	24.20	24.83	−0.63
Urban	2011–2012	8.13	13.38	−5.25
Maldives	2009	6.10	7.25	−1.14
Nepal	2010	14.51	14.89	−0.38
Pakistan	2011–2012	9.24	7.93	1.31
Sri Lanka	2012–2013	2.06	1.92	0.14
South Asia		**18.31**	**19.60**	**−1.29**

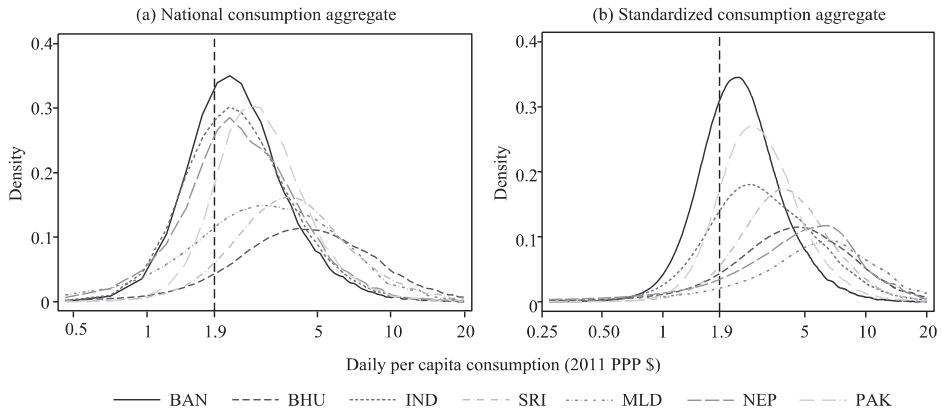Notes: India's consumption aggregates reported are based on the Uniform Recall Period.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Standardization leads to a slight change in food expenditures in all countries. With nonfood nondurables, standardization slightly increases the share of nonfood nondurables in Bangladesh, Bhutan, India, and Pakistan, but decreases the share in other countries. Standardization does not affect health care expenditures, and the proportion of housing expenditure changes little with standardization. However, Indian housing expenditures are much higher than those in the national consumption aggregate; this is driven mainly by the inclusion of imputed rent among urban households. To study this point further, we reproduce Table 8 and Table 9, but only for the poor in each country. The reproduced tables, which are presented in the Appendix as Table A.1 and Table A.2, respectively, show that much of the increase in consumption expenditures among the poor in urban India is driven by imputed rent.

While standardization of consumption aggregates does not affect the international poverty rankings for most countries, it has a significant effect on the poverty numbers for India. Table 11 shows the international extreme poverty rates calculated using national consumption aggregates and standardized consumption aggregates. In some cases, standardization increases the poverty rate, like in Bangladesh, Bhutan, Pakistan, and Sri Lanka. However, in the cases of India, Maldives, and Nepal, the standardization process decreases the international extreme poverty rate.

For the most part, the standardization process preserves the poverty rankings. When we use the national consumption aggregates to estimate the international extreme poverty rate, Sri Lanka has the lowest proportion of individuals classified

Figure 1. **Sensitivity of the International Extreme Poverty Rate When National and Standardized Consumption Aggregates Are Used to Measure Poverty**

BAN = Bangladesh, BHU = Bhutan, IND = India, MLD = Maldives, NEP = Nepal, PAK = Pakistan, PPP = purchasing power parity, SRI = Sri Lanka.
Note: The vertical line shows where the international poverty line lies.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

as extremely poor, followed by Bhutan, Maldives, Pakistan, Nepal, Bangladesh, and India. However, when we use the standardized consumption aggregates to do the same exercise, Bangladesh and India have virtually the same extreme poverty rate, whereas the extreme poverty rate is 3 percentage points higher in India when using the national aggregates. The international extreme poverty rate for South Asia as a region also falls by 1.3 percentage points, when using the standardized consumption aggregates, from 19.6% to 18.3%.

Figure 1 shows how standardization affects the distribution of per capita consumption in each South Asian country. For India, standardization has a significant impact on the distribution of the consumption aggregates, with the distribution shifting to the right and away from the $1.9 poverty line. On the other hand, it has a smaller impact on the distribution of consumption aggregates in Bangladesh and Pakistan, shifting them very slightly to the left. This reinforces the observed decline in India's poverty rates when using the standardized aggregates and the small increases in poverty rates for Bangladesh and Pakistan.

Using the standardized national consumption aggregates significantly reduces the number of poor in India and the region. Table 12 presents the estimates of the number of international extreme poor in each country using the national consumption aggregates and the standardized consumption aggregates.

Standardization of the consumption aggregates would reduce the international extreme poverty rate in South Asia by 1.3 percentage points, or around 18.5 million people, with India witnessing a reduction of about 22 million. Other countries, like Bangladesh and Pakistan would see a large increase in their

Table 12.   **Number of Extreme Poor Using Standardized and National Consumption Aggregates**

| | | Number of Extreme Poor (million) | | |
| | | Standardized Consumption Aggregates (1) | National Consumption Aggregates (2) | Difference (1) − (2) (3) |
Country	Year			
Afghanistan	2012	na	na	na
Bangladesh	2010	28.87	27.49	1.37
Rural	2010	26.12	24.89	1.23
Urban	2010	2.74	2.60	0.13
Bhutan	2012	0.02	0.01	0.01
India[1]	2011–2012	217.52	239.10	−21.58
Rural	2011–2012	191.75	196.70	−4.95
Urban	2011–2012	25.76	42.40	−16.64
Maldives	2009	0.02	0.02	<0.00
Nepal	2010	4.09	4.20	−0.11
Pakistan	2010–2011	11.96	10.26	1.69
Sri Lanka	2012–2013	0.43	0.38	0.05
Total		262.91	281.47	−18.55

na = not available.
Sources: Population numbers obtained from World Bank. PovcalNet. http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx (accessed September 25, 2017); Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

respective poverty numbers if consumption aggregates were standardized. Pakistan would see an increase in the number of extreme poor from 10.3 million to 12 million, and Bangladesh would see its number of extreme poor rise from 27.5 million to 28.9 million, mainly driven by the rural poor. As mentioned, India would experience a decrease in the number of extreme poor of about 22 million nationwide. Most of the fall would result from the decrease in the number of urban poor in India, due to the inclusion of imputed housing rent for homeowners in the standardized welfare aggregate. However, as the length of recall can affect consumption expenditures, harmonizing the length of recall in different South Asian countries could have some effect on these poverty numbers.

VI.   Consistency of Monetary International Poverty Rates with Nonmonetary Welfare Dimensions

This section considers whether the international extreme poverty rate rankings are consistent with nonmonetary dimensions of welfare. Thus far, we have examined monetary metrics of individual well-being, including the national and standardized consumption aggregates. This section assesses how the ranking of monetary welfare relates to other nonmonetary dimensions of well-being. Sen (1979) introduced the concept of capabilities, which states that a person has a set

of objectives to choose from to lead a meaningful, valued life. Many reports and papers have used Sen's capability approach to highlight the importance of reporting different indicators other than income to measure the overall well-being of a person. For example, Bourguignon and Chakravarty (2019) stressed the importance of measuring nonmonetary indicators of well-being because even though a person may have enough income to afford higher consumption, problems arise when the markets for certain nonmonetary welfare indicators either do not exist or are not perfect. Thus, different nonmonetary factors must be assessed besides income (e.g., access to clean water and educational attainment) to get a broader picture of well-being. The World Bank recently released *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*, which closely examines nonmonetary indicators to assess the poverty status of a person. The report also computes the Multidimensional Poverty Index of Alkire and Foster (2011), an index that amalgamates different monetary and nonmonetary indicators of well-being into one measure of poverty.

A country with high levels of (monetary) international poverty may perform badly in other nonmonetary welfare dimensions. Table 13 lists some indicators of nonmonetary well-being for the subpopulation of poor people identified using the national consumption aggregates. The nonmonetary indicators in most cases are broadly consistent with the monetary poverty rates, although Bhutan and Pakistan are outliers with respect to literacy. Sri Lanka has the lowest proportion of household members that are illiterate, while Pakistan has the highest and Bangladesh the second highest. In South Asia, Pakistan scores the worst when it comes to education among the extreme poor. Although Bhutan has the second-lowest extreme poverty rate in the region, its extreme poor are worse off in many categories when they are compared with India's extreme poor. For example, only 19% of the heads of households that are extremely poor in Bhutan are literate, compared to 50% in India and 29% in Bangladesh.

Bangladesh scores much worse in many of the nonmonetary dimensions than India. India has the highest proportion of extreme poor in the region, while Bangladesh has the second-highest proportion. But the Bangladeshi extreme poor have less human capital and lower levels of physical assets compared to their Indian counterparts. Bangladeshi households in extreme poverty have lower levels of educational attainment and lower ownership rates of household assets, even though the extreme poor in both Bangladesh and India have the same proportion of households engaged in agriculture.

Using the standardized consumption aggregates only partly mitigates some of the disparities observed in monetary and nonmonetary indicators. Table 14 shows the different nonmonetary indicators of well-being of the extreme poor when identified using the standardized consumption aggregates rather than the national consumption aggregates. Bangladesh still scores much worse than India in many of the dimensions. For example, Bangladeshi extreme poor have lower levels of

Table 13. Summary Statistics of Indicators of Nonmonetary Well-Being for the Extreme Poor Identified Using the National Consumption Aggregates

Variable	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Household composition							
Household size	5.73	8.40	6.43	7.53	7.16	10.01	5.60
Dependency ratio	0.97	0.73	0.78	0.67	1.16	1.42	0.70
Education attainment in household							
Household head knows how to read and write	0.29	0.19	0.50	1.00	0.37	0.28	
Proportion of household members who are illiterate	0.70	0.63	0.44	0.38	0.63	0.80	0.21
Household members with primary schooling	0.18	0.33	0.35	0.18	0.32	0.18	0.37
Ratio of female children in school to all children in school	0.54	0.41		0.48	0.53	0.35	0.47
Employment							
Household head engaged in agriculture	0.56		0.55	0.37		0.49	0.53
Household head self-employed	0.35	0.24	0.48	0.39	0.80	0.39	0.32
Household assets and facilities							
Household has a landline phone	0.01		0.01	0.12	0.02	0.01	0.09
Household has electricity	0.25	0.58	0.57		0.43	0.74	0.64
Household has a radio	0.05	0.36	0.16	0.69	0.41	0.02	0.45
Household has a television	0.10	0.12	0.29	0.97	0.16	0.19	0.49
Household has a fan	0.15	0.06	0.45	1.00	0.14	0.71	0.15
Household has a sewing machine	0.02	0.01	0.08	0.54	0.05	0.25	0.10
Household has a bicycle	0.15	0.02	0.66	0.34	0.28	0.26	0.36
Drinking water from hygienic source	0.96	0.96			0.73	0.87	0.84
Availability of proper sanitation facilities	0.3	0.61			0.1	0.28	0.74

Note: All reported summary statistics are population weighted.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Table 14. Summary Statistics of Indicators of Nonmonetary Well-Being for the Extreme Poor Identified Using the Standardized Consumption Aggregates

Variable	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Household composition							
Household size	5.68	8.18	5.60	7.58	7.20	9.68	5.68
Dependency ratio	0.47	0.40	0.95	0.41	0.53	0.57	0.41
Education attainment in household							
Household head knows how to read and write	0.27	0.21	0.50	1.00	0.34	0.31	
Proportion of household members who are illiterate	0.69	0.62	0.45	0.43	0.62	0.76	0.20
Household members with primary schooling	0.18	0.33	0.14	0.17	0.33	0.20	0.35
Ratio of female children in school to all children in school	0.52	0.49		0.51	0.53	0.37	0.49
Employment							
Household head engaged in agriculture	0.54		0.54	0.59		0.41	0.46
Household head self-employed	0.37	0.14	0.42	0.43	0.83	0.37	0.31
Household assets and facilities							
Household has a landline phone	0.01		0.006	0.07	0.02	0.02	0.13
Household has electricity	0.29	0.65	0.55		0.38	0.82	0.74
Household has a radio	0.05	0.35	0.14	0.65	0.43	0.02	0.48
Household has a television	0.12	0.22	0.23	0.93	0.13	0.29	0.60
Household has a fan	0.19	0.06	0.40	1.00	0.12	0.78	0.22
Household has a sewing machine	0.03	0.01	0.05	0.55	0.04	0.25	0.17
Household has a bicycle	0.16	0.04	0.59	0.30	0.28	0.23	0.35
Drinking water from hygienic source	0.96	0.98			0.75	0.86	0.87
Availability of proper sanitation facilities	0.33	0.61			0.08	0.34	0.79

Note: All reported summary statistics are population weighted.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

educational attainment and physical assets compared to their Indian counterparts, even though their dependency ratios and the proportion of households engaged in agriculture are similar. This is consistent with the common view that Bangladesh is poorer than India.

While the international extreme poverty rate shows that India has a much higher poverty rate than Bangladesh, further analysis of the nonmonetary dimensions of well-being shows that the depth of deprivation is higher in Bangladesh than in India, strongly suggesting that the extremely poor in Bangladesh are worse off than those in India. Monetary measures of poverty show that India and Bangladesh have similar rates of poverty when imputed rent is included for urban households, and that India would have a lower extreme poverty rate if imputed housing rent were included for rural households.

VII. Conclusions

The World Bank has set an ambitious target of eliminating international extreme poverty by 2030 and has taken steps to obtain proper estimates of extreme poverty. One of the key challenges in the measurement of poverty is how to identify the poor. The World Bank uses an international poverty line to identify the extreme poor, which is currently set at $1.9 per person per day in 2011 PPP dollars. Measuring the consumption of goods and services by households is challenging and very sensitive to survey design and data collection methods. Thus, differences in the way that household surveys are designed and collected across countries can have significant effects on poverty measurement, which are amplified when doing international poverty comparisons.

In this paper, we examine how the construction of consumption aggregates at the country level in South Asia adds to the total error that is implicitly part of any international poverty rate estimation. Indeed, when the World Bank recently convened a group of experts to identify how to improve the measurement of international extreme poverty, one of their main recommendations was to provide a margin of error with every poverty estimate. The rationale for this recommendation is that nonsampling errors, or total error, could create a biased estimate of international extreme poverty. Although the region includes only eight countries, it has both the second-highest number and proportion of the world's extreme poor. Additionally, all South Asian countries use the national consumption aggregate as the basis to identify the poor. This makes the analysis both tractable and significant in the global context.

For each country, we document in detail the differences in survey design and sampling, highlight the use of spatial deflation and intertemporal deflation, and assess the sensitivity of the international poverty rate to the methodology used to construct the consumption aggregates. We find that there is a significant variation in the methods used to measure poverty across countries in South Asia. Each country

collects a different list of food items from households. For instance, Sri Lanka collects just 47 nonfood nondurable items, while Bangladesh and India include over 190 items, and Maldives includes 401 items. Maldives, Pakistan, and Sri Lanka do not add durable goods to the consumption aggregate, but the rest of the countries in the region do. Afghanistan and Nepal do not include health care expenditures, and India and Maldives do not include imputed rent of owner-occupied housing. Moreover, the methodology to collect consumption data also varies from country to country. For instance, Maldives does not include home production of goods in the national consumption aggregate, and Bangladesh, Pakistan, and Sri Lanka do not include meals bought outside the home as part of the national consumption aggregate.

Still, by far, the most important source of differences in the construction of consumption aggregates is the treatment of imputed rents. Except for Maldives, all the other countries in South Asia collect imputed rent of owner-occupied housing as part of the consumption aggregate. While India does not include imputed rent as part of its national consumption aggregate, it does collect this information for urban dwellers. We find that the absence of imputed rent of owner-occupied housing from the national consumption aggregate of India is the main factor that makes its proportion of international extreme poor the highest in South Asia.

Using the standardized consumption aggregate reduces the number of extreme poor in South Asia and makes India appear equally poor as Bangladesh. While India has the largest proportion of international extreme poor when the national consumption aggregates are used to measure poverty, Bangladesh becomes home to the largest proportion of international extreme poor in South Asia when standardized datasets are used. This is mainly being driven by housing expenditures. The standardized dataset includes imputed rent of owner-occupied housing in urban regions of India. However, some of the results we obtain are affected by the differences in recall rates in different countries, and harmonizing them would help to obtain a more accurate poverty number.

The choice of CPI also plays an important role in determining the number of extreme poor. Each country deflates the international poverty line to align it with the year the survey was undertaken. Except for Afghanistan and Bangladesh, all other countries use the CPI to deflate prices. The evidence from Bangladesh shows that if the CPI were used to measure international extreme poverty (instead of the official Basic Need Price Index), then the proportion of the extreme poor would be overstated.

Spatial deflation has minor impacts on the international poverty rates measured at the country level, but it significantly affects urban and rural poverty rates. Currently, among countries in the region, only Bhutan and Nepal spatially deflate their national consumption aggregates when calculating the international poverty rate. The estimation of international poverty rates is not sensitive to spatial

deflation, but this could be an important issue to study subnational international poverty rates.

Nonmonetary measures of poverty are more consistent with the standardized than the national consumption aggregates. To understand the standard of living of the international extreme poor of each country, we also look at other nonmonetary welfare indicators. We find that, in some countries, the extreme poor fare better than in other countries. For example, the Pakistani extreme poor have the lowest levels of educational attainment, while Sri Lankans have the highest. We also find that India's extreme poor have better indicators of nonmonetary well-being compared to the extreme poor of Bangladesh. This matches well with the notion that India overall is less deprived than Bangladesh.

Our analysis indicates that the ex post harmonization of welfare aggregates would make international poverty comparisons more accurate. While household-level data provide valuable information at the country level, their idiosyncrasies may introduce noise into cross-country comparisons and, importantly, contribute to the total error of poverty estimates. Countries collect different numbers of consumption items, use different lengths of time for recall, include different categories of goods in the consumption aggregate, and use CPI to deflate prices, which all affect poverty estimates. This paper shows how differences in the methodologies of data collection and calculation of poverty rates across South Asia can affect countries' international poverty rates. These rates change significantly when standardized welfare aggregates are used. India and Maldives do not include imputed rent in the consumption aggregate, but other countries do, and adjusting for this reduces the number of extreme poor in India substantially. Standardizing the consumption aggregates, which includes adding imputed rent from urban Indian households, reduces the number of extreme poor in South Asia by almost 18.5 million, or by about 1.3 percentage points, with India leading the way with a decline of almost 21.6 million.

Our study shows that including imputed rent in the consumption aggregate would substantially improve its measurement and help researchers in getting a more accurate assessment of the number of poor. From the perspective of the cost of collecting this data, it should not be very difficult or expensive to add one more question about imputed rent in the consumption surveys. For example, in the case of India, the NSS already collects imputed rent data from urban areas, and so, using the same questionnaire for rural areas would allow for a harmonized collection of imputed rent data from across the country. Poverty experts can then include imputed rent when calculating per capita consumption aggregates to get a more accurate measurement of poverty. This endeavor is worthwhile given the large decline in poverty that we see when imputed rents are included in the consumption aggregate. However, we also note that poverty experts should study whether any changes in housing supply can affect imputed rent and whether that could impact the changes in poverty rates. Thus, in the coming years, it will be important

to explore the effects of adopting a consistent approach to the construction of welfare aggregates, particularly with respect to the treatment of housing rent, when estimating international poverty rates. This can lead to a more accurate assessment of the world's progress toward eradicating extreme poverty.

References

Alkire, Sabina, and James Foster. 2011. "Counting and Multidimensional Poverty Measurement." *Journal of Public Economics* 95 (7–8): 476–87.

Almas, Ingvild, and Åshild Johnsen. 2012. "The Cost of Living in China: Implications for Inequality and Poverty." Norwegian School of Economics Working Paper.

Almas, Ingvild, Anders Kjelsrud, and Rohini Somanathan. 2019. "A Behavior-Based Approach to the Estimation of Poverty in India." *The Scandinavian Journal of Economics* 121 (1): 182–224.

Beegle, Kathleen, Joachim De Weerdt, Jed Friedman, and John Gibson. 2012. "Methods of Household Consumption Measurement through Surveys: Experimental Results from Tanzania." *Journal of Development Economics* 98 (1): 3–18.

Bourguignon, François, and Satya R. Chakravarty. 2019. "The Measurement of Multidimensional Poverty." In *Poverty, Social Exclusion, and Stochastic Dominance*, edited by Satya Chakravarty, 83–107. Singapore: Springer.

Browning, Martin, Thomas F. Crossley, and Guglielmo Weber. 2003. "Asking Consumption Questions in General Purpose Surveys." *Economic Journal* 113: F540–F567.

Castañeda, Andrés, Dung Doan, David Newhouse, Minh Cong Nguyen, Hiroki Uematsu, and João Pedro Azevedo. 2016. *Who Are the Poor in the Developing World?* Washington, DC: World Bank.

Centre for Urban Studies, National Institute of Population Research and Training, and Measure Evaluation. 2006. "Slums of Urban Bangladesh: Mapping and Census, 2005."

Deaton, Angus. 2005. "Measuring Poverty in a Growing World (or Measuring Growth in a Poor World)." *Review of Economics and Statistics* 87 (1): 1–19.

Deaton, Angus, and Olivier Dupriez. 2009. "Global Poverty and Global Price Indexes." https://www.rrojasdatabank.info/deatonpppnov2009.pdf.

_____. 2011. "Purchasing Power Parity Exchange Rates for the Global Poor." *American Economic Journal of Applied Economics* 3: 137–66.

Deaton, Angus, and John Muellbauer. 1980. "An Almost Ideal Demand System." *American Economic Review* 70 (3): 312–26.

Deaton, Angus, and Salman Zaidi. 2002. *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*. Washington, DC: World Bank.

Dupriez, Olivier. 2007. "Building a Household Consumption Database for the Calculation of Poverty PPPs." World Bank. Mimeo.

Farhan, Gabriela, María Eugenia Genoni, and Renos Vakis. 2015. "You Are What (and Where) You Eat: Capturing Food Away from Home in Welfare Measures." World Bank Policy Paper No. WPS7257.

Ferreira, Francisco H.G., Shaohua Chen, Andrew Dabalen, Yuri Dikhanov, Nada Hamadeh, Dean Jolliffe, Ambar Narayan, Espen Beer Prydz, Ana Revenga, Prem Sangraula, Umar Serajuddin, and Nobuo Yoshida. 2016. "A Global Count of the Extreme Poor in 2012 Data Issues, Methodology, and Initial Results." *The Journal of Economic Inequality* 14 (2): 141–72.

Gibson, John. 2006. "Statistical Tools and Estimation Methods for Poverty Measures Based on Cross-Sectional Household Surveys." In *Handbook on Poverty Statistics: Concepts, Methods and Policy Use*, United Nations Statistics Division, 128–203. New York.

Gibson, John, Jikun Huang, and Scott Rozelle. 2001. "Why Is Income Inequality So Low in China Compared to Other Countries? The Effect of Household Survey Methods." *Economic Letters* 71 (3): 329–33.

Gibson, John, and Trinh Le. 2018. "Improved Modelling of Spatial Cost of Living Differences in Developing Countries: A Comparison of Expert Knowledge and Traditional Price Surveys." Working Papers in Economics No. 18/08, University of Waikato.

Gibson, John, Trinh Le, and Bonggeun Kim. 2017. "Prices, Engel Curves, and Time-Space Deflation: Impacts on Poverty and Inequality in Vietnam." *The World Bank Economic Review* 31 (2): 504–30.

Gimenez, Lea, and Dean Jolliffe. 2014. "Inflation for the Poor in Bangladesh: A Comparison of CPI and Household Survey Data." *Bangladesh Development Studies* 37 (1/2): 57–81.

Government of Afghanistan, Central Statistics Organization. 2017. "Settled Population by Civil Divisions 2012–2013." Kabul.

Government of Bangladesh, Bureau of Statistics. 2012. "Census of Slum Areas and Floating Population." http://203.112.218.65:8008/PageWebMenuContent.aspx?MenuKey=423.

Hill, Robert J., and Iqbal A. Syed. 2015. "Improving International Comparisons of Prices at Basic Heading Level: An Application to the Asia-Pacific Region." *Review of Income and Wealth* 61 (3): 515–39.

Jolliffe, Dean. 2001. "Measuring Absolute and Relative Poverty: The Sensitivity of Estimated Household Consumption to Survey Design." *Journal of Economic and Social Measurement* 27: 1–23.

Jolliffe, Dean, Peter Lanjouw, Shaohua Chen, Aart Kraay, Christian Meyer, Mario Negre, Espen Prydz, Renos Vakis, and Kyla Wethli. 2014. *A Measured Approach to Ending Poverty and Boosting Shared Prosperity: Concepts, Data, and the Twin Goals*. Policy Research Report. Washington, DC: World Bank.

Lanjouw, Jean, and Peter Lanjouw. 2001. "How to Compare Apples and Oranges: Poverty Measurement Based on Different Definitions of Consumption." *Review of Income and Wealth* 47: 25–42.

Ravallion, Martin, Shaohua Chen, and Prem Sangraula. 2009. *Dollar a Day Revisited*. Washington, DC: World Bank.

Sen, Amartya. 1979. "Equality of What." The Tanner Lecture on Human Values. http://www.ophi.org.uk/wp-content/uploads/Sen-1979_Equality-of-What.pdf.

Smith, Lisa, Olivier Dupriez, and Nathalie Troubat. 2014. *Assessment of the Reliability and Relevance of the Food Data Collected in National Household Consumption and Expenditure Surveys*. Rome: Food and Agriculture Organization of the United Nations and World Bank.

UN-Habitat. 2013. "Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements." https://unhabitat.org/sites/default/files/download-manager-files/Planning%20and%20Design%20for%20Sustainable%20Urban%20Mobility.pdf.

Weinand, Sebastian, and Ludwig von Auer. 2020. "Anatomy of Regional Price Differentials: Evidence from Micro-Price Data." *Spatial Economic Analysis* 15 (1): 1–28.

World Bank. 2017. *Monitoring Global Poverty: Report on the Global Commission on Poverty*. Washington, DC.

_____. 2018. Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle. Washington, DC.

Appendix

Table A.1. Average Expenditure per Day by Category of Goods and Services for the Poor ($)

	Bangladesh			Bhutan	India			Maldives	Nepal	Pakistan	Sri Lanka
	All 2010	Rural 2010	Urban 2010	2012	All 2011–2012	Rural 2011–2012	Urban 2011–2012	2009	2010	2011–2012	2012–2013
National consumption aggregates											
Food	1.04	1.04	1.03	0.90	0.91	0.92	0.87	0.75	1.05	0.96	0.89
Nonfood nondurables	0.25	0.25	0.26	0.35	0.30	0.29	0.30	0.57	0.31	0.32	0.19
Health	0.05	0.05	0.04	0.03	0.06	0.06	0.06	0.03		0.05	0.03
Education	0.04	0.04	0.05	0.07	0.03	0.02	0.04	0.03	0.03	0.02	0.01
Durable goods	0.01	0.01	0.01	0.00	0.02	0.02	0.02		0.03		0.01
Housing	0.18	0.18	0.22	0.18	0.21	0.20	0.23	0.17	0.05	0.27	0.32
Total	1.56	1.56	1.59	1.53	1.52	1.52	1.52	1.56	1.46	1.63	1.44
Standardized consumption aggregates											
Food	1.00	1.00	0.98	0.83	0.86	0.87	0.77	0.73	0.97	0.92	1.08
Nonfood nondurables	0.29	0.29	0.31	0.38	0.35	0.35	0.31	0.31	0.27	0.35	0.30
Health	0.04	0.04	0.04	0.01	0.06	0.06	0.05	0.06	0.09	0.06	0.05
Education	0.04	0.03	0.04	0.05	0.02	0.02	0.03	0.06	0.03	0.03	0.07
Durable goods	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.14	0.04	0.01	0.02
Housing	0.18	0.18	0.22	0.25	0.23	0.20	0.39	0.25	0.11	0.27	0.18
Total	1.56	1.56	1.59	1.54	1.52	1.52	1.57	1.54	1.52	1.63	1.69

Notes: All amounts are based on 2011 purchasing power parity. India's consumption aggregates reported are based on the Uniform Recall Period.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).

Table A.2. **Budget Shares by Category for the Poor (%)**

	Bangladesh			Bhutan	India			Maldives	Nepal	Pakistan	Sri Lanka
	All 2010	Rural 2010	Urban 2010	2012	All 2011–2012	Rural 2011–2012	Urban 2011–2012	2009	2010	2011–2012	2012–2013
National consumption expenditure											
Food	67	67	65	60	60	60	58	56	71	59	61
Nonfood nondurables	15	15	16	22	19	19	19	39	20	20	12
Health	3	3	3	2	4	4	4	2	0	3	2
Education	2	2	3	4	2	1	2	2	4	1	0
Durable goods	1	1	1	0	1	1	1	0	2		0
Housing	12	12	14	12	15	14	16	13	3	17	23
Total	100	100	100	100	100	100	100	100	100	100	100
Standardized consumption aggregate											
Food	64	64	62	55	55	56	45	50	64	56	66
Nonfood nondurables	18	18	19	23	24	24	23	18	17	22	14
Health	3	3	2	1	4	4	3	4	6	3	5
Education	2	2	2	3	1	1	2	4	2	2	4
Durable goods	1	1	1	1	1	1	1	8	3	1	1
Housing	12	12	14	17	16	14	25	17	8	17	17
Total	100	100	100	100	100	100	100	100	100	100	100

Note: India's consumption aggregates reported are based on the Uniform Recall Period.
Source: Authors' estimates based on South Asia Harmonized Micro Dataset (accessed September 15, 2017).