

CHAPTER 2

Updating Vietnam's Poverty Monitoring System

Vietnam's poverty monitoring system was updated to reflect changing economic conditions since the first Vietnam Living Standards Survey was conducted in 1993. New, comprehensive consumption aggregates were created using data from the 2010 Vietnam Household Living Standards Survey and adjusted for spatial cost-of-living differences using updated regional price indexes. The GSO-WB poverty line was also updated, yielding a national poverty rate of 20.7 percent in 2010.

Vietnam has a robust system for monitoring changes in poverty, based on a long-running system of nationally representative, comparable surveys—the Vietnam Living Standards Survey (VLSS) and the subsequent Vietnam Household Living Standards Surveys (VHLSS)—consistent estimates of household welfare, and a poverty line that was kept constant in real purchasing power since the mid-1990s, when it was agreed between the General Statistics Office (GSO), the World Bank (WB), and other development partners.¹ Consistency in methodology and comparability over time are two of the great strengths of Vietnam's poverty monitoring system. However, by 2009, it had become clear that key aspects of the system were outdated. The methods used to measure household welfare and construct the original GSO-WB poverty line were based on economic conditions and consumption patterns of poor households in the early 1990s. Conditions have changed: Vietnam today is very different from Vietnam in the 1990s. The economy is more diversified and better integrated in the global economy. Connectivity and access to markets have improved, even for households living in more remote rural areas. In addition, the production structure of households has changed: households have access to a much wider array of consumer goods, and they purchase more food from the market and produce less food at home than before. Incomes are more diversified, and there has been a rapid shift out of agriculture and into industry and services. These changes affect households across the income

distribution. Especially important for defining the poverty line, the consumption patterns of poor households today are substantially different from those of the 1990s.

This chapter describes revisions and updates to Vietnam's poverty monitoring system, including (a) improvements to the 2010 VHLSS (and subsequent rounds), (b) revisions to the definition of household welfare to make it a more comprehensive measure of well-being, (c) new indexes to adjust for spatial cost-of-living differences, and (d) an update to the original GSO-WB poverty line. The methodology used to construct the new poverty line is consistent with the original GSO-WB methodology, but it is based on new information from the 2010 VHLSS.² The revisions described in this chapter result in higher estimated poverty for 2010 than the original GSO-WB poverty line would have yielded and higher estimated poverty, particularly for rural areas and areas with high numbers of ethnic minority households, than those of the Ministry of Labor, Invalids, and Social Affairs (MOLISA) using official poverty lines. Reasons for these differences are also discussed.

The chapter also describes a new methodology for estimating “subjective” poverty lines for Vietnam, drawing on experimental questions introduced in the 2010 VHLSS. Poverty estimates based on the subjective poverty line are very similar to those using the updated GSO-WB poverty line.

Due to the design of the survey and size of the sample, the 2010 VHLSS can only produce reliable estimates of poverty at the national level, for urban and rural areas, and by region. Chapter 3 describes a small-area (poverty mapping) methodology that is used to estimate poverty at lower levels of spatial disaggregation—in Vietnam's case, for provinces and districts—and presents new district- and provincial-level poverty maps based on the 2009 Housing and Population Census and the 2010 VHLSS.

Rethinking poverty in Vietnam

Poverty is defined as *unacceptable deprivation in well-being*. But well-being can encompass a multitude of dimensions, and there are many different views about what constitutes an acceptable (or unacceptable) standard of living. In many countries, setting (or revising) the poverty line involves active public debate and a careful balancing of political and scientific considerations. The enormous public response, in India and internationally, to the Indian Planning Commission's announcement of new poverty estimates and revised urban and rural poverty lines provides a recent example of the challenges inherent in updating poverty lines, with some interesting parallels to current discussions in Vietnam (box 2.1).

The official poverty lines developed for the 2011–15 Socio-Economic Development Plan (SEDP) are more akin to Abhijit Banerjee's concept of an administrative poverty line: they aim to help the government to target limited public resources to those most in need and should be assessed

BOX 2.1 Do India's new official poverty lines measure up?

The Indian Planning Commission released a new set of poverty estimates and new poverty lines in March 2012. Many observers believe that the new poverty lines are much too low—Rs 29 per person per day for rural households (just under US\$1.25, 2005 purchasing power parity [PPP]) and Rs 32 per person per day for urban households (US\$1.65, 2005 PPP). The Planning Commission's new estimates showed a 7-percentage-point drop in poverty, the largest drop since the official poverty rate was first calculated in 1962. The announcement caused a furor in the Indian and international press: Indian poverty lines have always been low by international standards, and the new lines were seen as a missed opportunity to rectify this.

One important criticism is that the nutrition standards embedded in India's new lines continue to be based on the sparse diet that the poor consumed per the 1973–74 National Sample Survey. Like in Vietnam, consumption patterns in India have changed substantially since these standards were set. Another criticism is that India's new poverty lines do not “constitute an adequate definition of poverty because they do not take into account malnutrition, sanitation, drinking water, housing, and health needs” (Gill 2012). Similar criticisms were leveled at Vietnam's long-standing GSO-WB poverty line. The new 2010 poverty line takes full account of housing, durables, nutrition, clean water and sanitation, and health needs.

If India is using the same methodology it used in the past, why the big controversy now? Over time, the Indian poverty line has increasingly been used as a cutoff to determine eligibility for India's social welfare schemes and targeted poverty reduction programs. People who fall below the poverty line are eligible for a range of social benefits; states receive funds for some poverty reduction programs (for example, the Public Distribution System, which distributes subsidized rice to poor households) according to the number of residents who fall below the official poverty line. So where the poverty line is set is not just a statistical artifact, but an important policy decision that determines the eligibility of millions of families for public support. The Indian government cannot afford a poverty cutoff that is too high, and—as the controversy continues—it appears that the people of India will not accept a poverty cutoff that is too low.

In a recent article in the *Hindustan Times*, Abhijit Banerjee, Ford Foundation International Professor of Economics at the Massachusetts Institute of Technology, suggested that the way out of the current muddle is to have “two different poverty lines: an ethical poverty line to describe the standard we should aspire to . . . and an administrative poverty line which tells us how to best target our limited resources. As [India] gets richer, perhaps the latter will be raised till it is effectively the same as the former. But right now we don't want to hurt the poorest [by spreading resources too thinly] in the name of being more aggressive about poverty” (Banerjee 2011).

against this objective. The updated GSO-WB poverty line better captures what Banerjee refers to as an ethical poverty line; it reflects what Vietnam should aspire to achieve. The good news is that compared to the situation in the 1990s, the gap between Vietnam's administrative poverty lines

and the monitoring poverty line has become much smaller. Moreover, the official poverty lines do indeed help to target poverty reduction policies and programs to those most in need and thus help Vietnam to achieve its poverty reduction goals.

Capturing different dimensions of poverty

Measuring poverty is a challenging and complicated task, because poverty itself is complex and multidimensional. This chapter focuses primarily on conventional approaches to measuring poverty, including absolute poverty lines and consumption-based measures of welfare. While familiar to the public and policy makers in Vietnam, the standard methodology may not fully capture other important dimensions of well-being. For example, households living in large, prosperous cities like Hanoi or Ho Chi Minh City may have access to better-quality schools and health facilities than households in other regions. But students attending higher-quality schools do not necessarily face higher school fees; in fact, households living in areas with poor schools may have to pay more—for instance, for extra tutoring to compensate for quality differences. Poor households that live in areas with low-quality schools but cannot afford to pay more may be at an additional disadvantage not captured in standard poverty analysis. Similarly, two households that look the same in terms of schooling and skills endowments may not earn the same income if one of the households faces discrimination in hiring—due to ethnicity or gender—that limits its future prospects.

A variety of economic and social factors—some subtle and difficult to capture in standard poverty analysis—must be examined to get a full picture of poverty. Conventional poverty measures provide an important starting point for analyzing other dimensions of poverty. The profile of poverty presented in chapter 3 looks explicitly at other dimensions of poverty—for example, deprivations in education and skills, poor health status, and deprivations in access to basic services such as clean water and sanitation. The aim of multiple-topic surveys of living conditions (like the VHLSS) is to facilitate the measurement and analysis of poverty in multiple dimensions. The human development index (HDI) described in chapter 1 is a composite measure of well-being, as is the child poverty index (described in chapter 3) and the broader multidimensional poverty index proposed by several United Nations organizations.

Additional information on other dimensions of deprivation experienced by the poor can be identified by soliciting their perceptions and insights through discussions and open-ended interviews. Many participatory poverty assessments (PPAs) have been carried out over the years in Vietnam, including three new field studies carried out as input for this book (see chapter 1). Findings from these studies are referred to throughout the

book. These studies let the poor themselves give voice and context to the story that emerges from more conventional statistical analyses—poor men and women in Vietnam highlight concerns about lack of skills and education, access to good jobs and stable employment, and access to land and job security. They also speak about poverty in terms of risks—linked to health shocks, aging, and disability; job loss and uncertain wages; and weather shocks that destroy crops and affect rural incomes. Many of the poor are highly indebted, and risk can undermine new economic initiatives. The importance of social identity is also evident; in rural areas, minority status is often equated with being poor.

Updating methods for measuring poverty

Two important decisions are required in order to measure poverty: first, how should welfare be measured—in income or expenditure terms—and second, what poverty threshold or line should be used. Both issues have been the subject of debate in Vietnam, as discussed in box 2.2.

The GSO-WB approach uses per capita expenditures from the VHLSS as a measure of individual welfare. The poverty line is constructed using a standard cost-of-basic-needs (CBN) approach, based on the observed consumption behavior of the poor, as reported in the VHLSS. It includes an allowance for food and nonfood spending. The food allowance (or food poverty line) is based on a single reference food basket for poor households, scaled up or down as needed to meet caloric norms and priced using a vector of national food prices. An additional allowance is added for essential nonfood spending, for example, on fuel, housing, schooling, health care, and clothing based on nonfood spending of households whose food spending is equal to the food poverty line (World Bank 1999).

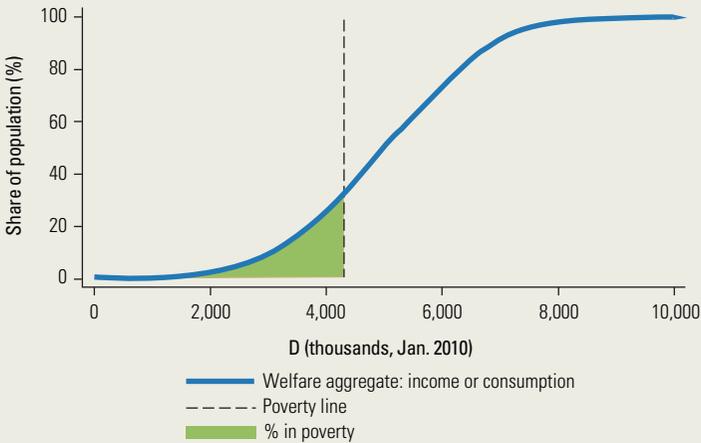
Vietnam carried out two living standards surveys in the 1990s—the 1992–93 and the 1997–98 VLSS—with extensive technical support from international partners. Vietnam then carried out a series of government-led living standards surveys—the VHLSS—in 2002, 2004, 2006, and 2008, using a similar approach to the earlier VLSS. The design of the core expenditure and income modules of the VHLSS questionnaires were kept broadly consistent with similar modules of the VLSS, with the specific and laudable aim of maintaining comparability over time. As noted, comparability has been one of the great strengths of Vietnam's poverty monitoring system.

But by 2010, strict comparability was coming at too high a cost. The 2010 VHLSS and related welfare aggregates represent a break with the 2002–08 VHLSS series in three important respects: first, the 2010 VHLSS was based on a new master sample based on the 2009 Housing and Population Census, including a new set of communes and enumeration areas; second, the VHLSS household questionnaire was substantially revised (including revisions to the core consumption module) and shortened; and

BOX 2.2 How is poverty measured?

The poverty rate (or headcount index) is defined as the proportion of the population in a specific period whose welfare (consumption per capita) falls below the poverty line (figure B2.2.1).

FIGURE B2.2.1 Conventional poverty measurement methodology



Choice of welfare indicator

Welfare is typically measured in terms of per capita consumer expenditures or per capita incomes. On a conceptual level, income is a measure of welfare opportunity—the level of well-being a household can afford to purchase at a particular point in time. Consumption can be thought of as a measure of welfare achievement—the level of well-being that a household actually achieves at a point in time. However, incomes are often more variable than expenditures: for example, farmers produce more in years when the weather is good than in years with unseasonable temperatures, droughts, and flooding. Households smooth income variations by saving in good years and not saving in bad years. Annual expenditures typically reflect a longer-run concept of income—that is, permanent income—rather than a shorter-run concept of annual income. It is therefore not surprising that income-based poverty statistics can be very different from consumption-based statistics. In the United States, for example, 30 percent of the income-poor own their own home compared to only 15 percent of the consumption-poor, and the food share is only 24 percent for the income-poor compared to 32 percent for the consumption-poor. It is generally assumed that poor households are less likely to own their own home (at least in high-income countries like the United States) and, according to Engel's law, spend a higher proportion of expenditures on food.

(Box continues next page)

BOX 2.2 (continued)**Defining the poverty line**

The most commonly used approach to setting poverty lines is the cost-of-basic-needs (CBN) approach, which is widely applied in countries throughout the world and described in Ravallion (1998) and Ravallion and Bidani (1994). The CBN approach consists of first defining a basket of food and nonfood items that are adequate for satisfying the basic consumption needs of a household and then calculating the cost of this basket. Conceptually, a CBN poverty line measures the minimum income necessary for households to purchase a basic-needs basket of food and other commodities so that members have sufficient food to remain healthy and productive and have the means to participate fully in society. In practical terms, the poverty line is constructed by first defining a reference food basket (reflecting consumption patterns of the poor), anchoring it in an agreed nutrition norm (for example, 2,100 calories per person per day), and then adding an allowance for nonfood spending on essential goods (health care, education, housing, and durable goods) that is consistent with spending patterns of the poor.

third, an updated methodology was used to construct a more comprehensive consumption (welfare) aggregate. These improvements are summarized here and described in greater detail in Kozel, Hinsdale, and Nguyen (2013).

The VHLSS: Improved and shortened in 2010

Many improvements were made to the VHLSS in 2010, building on lessons from global best practices. The master sample for the VHLSS was updated using results from the 2009 Housing and Population Census, the household questionnaire was improved and shortened, and the survey period was adjusted to cover a full year.

Sampling

The 2002–08 rounds of the VHLSS used a master sample of communes and urban wards drawn from the 1999 Housing and Population Census. In each round of the VHLSS, half of the enumeration areas (villages) and households within the communes were kept and half were replaced, with the aim of ensuring stability in poverty measurement. While the approach helped to maintain stability, the 1999 master sample was substantially out of date by 2008. For example, it did not include large tracts of empty land in peri-urban areas, local towns, and villages that have since been turned into residential land to house Vietnam's burgeoning urban population. It is very important to maintain and update master samples in rapidly growing countries like Vietnam.

A new master sample of communes and wards was developed for the 2010 VHLSS and subsequent surveys using the 15 percent sample of the 2009 Housing and Population Census. The new master sample provides better coverage of smaller households in urban areas and somewhat better coverage of migrant households, many of whom come to work in urban areas for extended periods. Individuals who reside in an urban area for more than six months are supposed to be included in the VHLSS. Previous rounds of the VHLSS have been criticized for poor coverage of urban migrants, who in the past were assumed by local officials to be members of their rural “sending” households (Pincus and Sender 2008). A recent study of poverty in Hanoi and Ho Chi Minh City (Haughton, Nguyen, and Nguyen 2010) indicates that some unregistered short-term urban migrants—those most likely to be undersampled in the VHLSS—may be more vulnerable to income shocks and have lower living standards than longer-term residents. These issues will be explored more systematically in the future. The 2012 VHLSS includes a special module on migrants, focusing, in particular, on long- and short-term migration for work purposes.

The sample of households for the 2012 VHLSS will be drawn from the same communes as the 2010 VHLSS, similar to the design of the 2002–08 sample. For 2014 and subsequent years, the GSO is advised (a) to update the master sample through careful relisting of enumeration areas on a regular basis and (b) to refresh the sample by adding new communes to the VHLSS master sample over time, paying particular attention to good coverage in peri-urban areas where the population is growing. The GSO is also advised to explore alternative approaches to improve coverage of urban migrants, either through more comprehensive sampling approaches (which may be difficult) or through regular in-depth surveys of migrant populations. Given the high mobility of labor in Vietnam, the latter approach may be more effective.

Questionnaire design

The VHLSS was heavily criticized for taking too long to administer in the field, with related concerns about the quality and accuracy of data. In response to these criticisms, many sections of the 2010 questionnaire were shortened. The consumption modules were redesigned to collect information on food and frequent nonfood spending using a fixed reference period (30 days) rather than a “typical month” (used in 2002–08), and beginning in 2010 the VHLSS was administered in four rounds during each survey year.³ Additional sections were added to capture Vietnam’s expanding array of social insurance and social assistance programs, including more detailed measures of remittances and transfers. Improvements were made to the module on access to poverty programs, including targeting and coverage of benefits from targeted poverty reduction programs.

New, more comprehensive consumption aggregates

The first step in estimating a poverty line is to decide on the definition of the welfare aggregate. The consumption aggregates constructed from the VHLSS follow well-established practices (Deaton 1997; Deaton and Zaidi 2002). They include (a) food consumption, (b) frequent and infrequent nonfood items (personal care and hygiene, clothing, fuel, and household goods), (c) education (tuition, books and uniforms, tutoring, other fees), (d) health (curative and preventive care, health insurance), and (e) utilities (water, electricity, sanitation, trash collection). Two standard imputations are made in constructing the consumption aggregates: an annual flow of services from durables and an annual value of housing services and imputed rents.

The poverty line must be defined in the same terms as the welfare aggregate. Changes in the definition of the welfare aggregate will thus require revisions to the poverty line. Different countries use different welfare aggregates for measuring poverty; some countries use income, while others use household consumption. Within the set of countries using household consumption, there are substantial differences in how the measures are defined. For example, although many countries include health or education expenditures in the consumption aggregate, an increasing number of low-income countries in Sub-Saharan Africa do not. Moreover, if basic health services and primary education services are provided free of charge, they will not be reflected in household expenditures, however defined, unless imputations are made to value (nonpriced) publicly provided services. Instead of trying to value these directly—which can be complicated and controversial—researchers typically carry out additional analysis to measure deprivations in human development, as a complement to income- or expenditure-based measures of deprivation.

All countries include food in the consumption aggregate, including food purchased in the market, gifts and payments in-kind, and food produced at home. In the 1980s and 1990s, lack of food (basic calories) was a major cause of poverty throughout the world, and substantial effort went into obtaining good measures of food in poverty surveys and analysis. However, as countries become more affluent, the way we think about well-being and poverty is changing. Nonfood spending is becoming an increasingly important component of household welfare—including spending on local infrastructure, on amenities such as housing, electricity, and water, and on durable goods including furniture, small appliances, cell phones, and motorcycles. Spending on housing and durables needs to be handled in a different way than short-term spending on goods and daily needs. However, although broad measurement concepts may be similar—welfare is measured through a household-level expenditure aggregate—the great diversity in actual practice makes it difficult to compare national poverty

lines and poverty rates across countries, even when converted into “internationally” comparable 2005 PPP measures. One reason India’s national poverty line is low in PPP terms is because it is based on a very parsimonious consumption aggregate (box 2.1).

Two sets of consumption aggregates have been used to analyze poverty in Vietnam. One set of aggregates (referred to as “temporally comparable”) was designed, as the name suggests, to be strictly comparable with the consumption aggregates initially developed using the 1992–93 VLSS. For example, although new durable goods were added to later rounds of the VHLSS (for example, cell phones and computers), only items available in the 1992–93 VLSS are included in the comparable aggregate. Similarly, estimates of the value of housing services are also based on spending patterns in the 1992–93 VLSS. Because Vietnam’s housing market was very underdeveloped in the 1990s, imputed rents were calculated as a fixed percentage of total nonfood consumption rather than derived using conventional hedonic methods. This same fixed percentage (from 1993) was used to calculate the housing component of the consumption aggregate in all subsequent rounds of the VHLSS through 2008.

The vast majority of research and analytic work using VHLSS data has used the comparable consumption aggregate. The original GSO-WB poverty line, used extensively in the poverty literature for Vietnam, was constructed using the comparable aggregate. It is based on a reference food basket from the 1992–93 VLSS and related spending on a minimum basket of nonfood items.

Vietnam today is different from Vietnam in the 1990s, and expenditures, including the expenditures of low-income households, are far more diversified. Real estate markets are more developed, particularly in urban areas, and many households put considerable investment into housing and land. Vietnam is similar to other fast-growing economies in this respect. Housing values reported in recent rounds of the VHLSS are more reliable than those collected in earlier rounds.

A second set of “comprehensive” consumption aggregates was constructed using the 2004, 2006, 2008, and 2010 rounds of the VHLSS; these aim to make optimal use of all the expenditure information in a given year, unencumbered by considerations of strict comparability over time. There are some minor and major differences between “comparable” and “comprehensive” aggregates (see table 2A.1 for a detailed description). The comprehensive aggregate includes the imputed value for all durables owned by the household and an updated imputed flow of services from housing. The latter is a particularly important addition (box 2.3).

Comparable and comprehensive consumption aggregates for the last four rounds of the VHLSS are described in tables 2.1 and 2.2.⁴ Comparing the numbers in these tables, it is clear that by 2010 the benefits of maintaining procedural consistency with 1993 consumption aggregates were sub-

BOX 2.3 How to value housing services in the VHLSS

Housing is an important component of household welfare, particularly as countries grow and prosper. Investments in housing are rising rapidly in Vietnam—families purchase new houses and build or add onto existing dwelling units. Housing expenditures—either actual or imputed—should be fully reflected in the consumption aggregate. In countries where housing markets function well, annual rental payments provide a good measure of the value of housing services. Using information on reported rents, a hedonic for housing can be used to impute the value of housing services (based on characteristics of the dwelling unit and neighborhood characteristics) in cases where information on rents is missing (for example, owner-occupied housing or housing supplied by employers).

However, Vietnam is an unusual case. Rental markets are still thin and there are not enough renters either in early or in more recent rounds of the VHLSS to estimate robust hedonic rent equations. Even the 2010 VHLSS includes only 243 households (out of 9,399) that report spending on rent—around 2.6 percent of total households in the sample. In contrast, the 2009 Housing and Population Census reports that 6.4 percent of all households in Vietnam rent their dwelling unit, including 13.2 percent of households living in urban areas.

Prior to 2010, the value of housing services was assumed to be a fixed percentage of nonfood consumption expenditures. Based on shares in 1992–93, the value of housing was set equal to 11.8 percent of nonfood consumption for rural households and 21.4 percent for urban households.

In constructing comprehensive aggregates, each household's annual consumption of housing services is calculated as a fixed share of the reported sales value of the dwelling unit. This fixed share is the same for all households and equals 2.88 percent, which is the median ratio of reported annual rent payments to reported sales value of the dwelling, among the subsample of households who report renting their dwelling. In essence, this method uses the information collected in the 2010 VHLSS about Vietnam's rental market to approximate the relationship that prevails in Vietnam between rental and ownership values in housing and then imputes annual consumption of housing services for all households using this relationship. While this method would not be preferable to hedonic estimation if a more comprehensive survey of Vietnam's renters were available, it has the virtue of not assuming that a household's consumption of housing remains a constant proportion of other nonfood consumption over time, an assumption made in the temporally comparable set of aggregates from 1993 to 2008. Derived directly from the reported value of each household's dwelling, the measure of housing consumption in the comprehensive aggregates is more sensitive to what each household reports about its living situation. The result is that, in 2010, housing averaged 15 percent of total consumption in the comprehensive aggregates compared to 6 percent in the temporally comparable aggregates. However, the share of housing is much lower for households in the poorest quintile (7.5 percent) and thus does not have a large impact on 2010 poverty rates.

TABLE 2.1 Comprehensive consumption aggregates for the VHLSS, 2004–10

Expenditure component	Mean consumption				Average share of total consumption			
	2004	2006	2008	2010	2004	2006	2008	2010
Food expenditure	1,753	2,378	2,993	6,515	42	42	38	46
Nonfood expenditure	1,050	1,449	2,142	3,220	21	21	22	20
Durables consumption	592	767	1,301	1,972	10	10	12	10
Education expenditure	261	334	461	769	5	5	5	4
Health expenditure	297	339	494	722	6	5	5	4
Utilities and electricity	140	183	233	373	3	3	2	2
Housing consumption	1,120	1,390	2,070	3,558	15	15	16	15
Total expenditure	5,212	6,840	9,694	17,129	100	100	100	100

Sources: 2004, 2006, 2008, 2010 VHLSS.

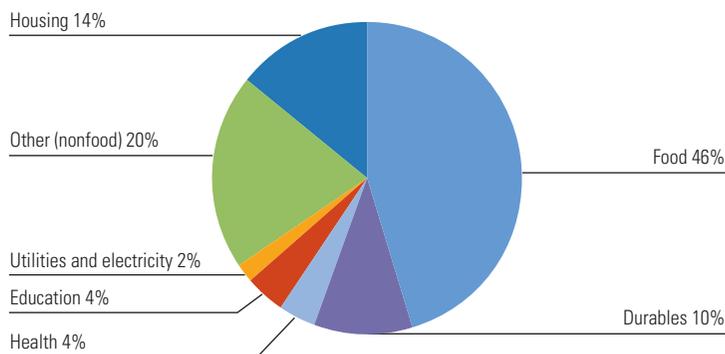
TABLE 2.2 Temporally comparable consumption aggregates for the VHLSS, 2004–10

Expenditure component	Mean consumption				Average share of total consumption			
	2004	2006	2008	2010	2004	2006	2008	2010
Food expenditure	1,857	2,502	3,153	6,401	49	49	47	54
Nonfood expenditure	986	1,396	1,987	2,975	20	21	23	21
Durables consumption	518	638	801	1,268	10	9	9	7
Education expenditure	246	330	423	732	5	5	5	5
Health expenditure	290	332	465	680	6	5	6	5
Utilities and electricity	147	191	233	378	3	3	3	3
Housing consumption	351	466	622	988	6	6	7	6
Total expenditure	4,394	5,855	7,683	13,422	100	100	100	100

Sources: 2004, 2006, 2008, 2010 VHLSS.

stantially outweighed by the resulting loss of information; there is a large and growing gap between the temporally comparable and comprehensive aggregates over time. Going forward, it is important to update the methodology for calculating consumption aggregates and poverty lines on a more frequent basis. How frequently will depend on Vietnam's rate of economic progress and how quickly consumption patterns change, particularly for households at the lower end of the income distribution. In deciding this, it is important to balance the benefits of stability and consistency over time with the ability of both the consumption aggregate and the poverty line to reflect contemporary living conditions. Given how quickly conditions are changing globally and in Vietnam, it is suggested that the methodology be revisited in five (or six) years to assess whether it is providing accurate estimates. However, despite efforts to ensure procedural consistency, comparisons between the 2010 VHLSS and earlier years using *either* comparable or comprehensive consumption aggregates must be interpreted with care.

FIGURE 2.1 Composition of per capita expenditures in Vietnam, 2010



Source: 2010 VHLSS.

As described above, some important changes were introduced in the 2010 VHLSS—such as an updated sample frame, a shift to a fixed reference period in the expenditure module, and a revised definition of welfare—that make temporal comparisons difficult. The 2010 VHLSS and the new GSO-WB poverty lines provide a baseline for consistent poverty monitoring going forward—that is, for the 2012 and future rounds of the VHLSS.

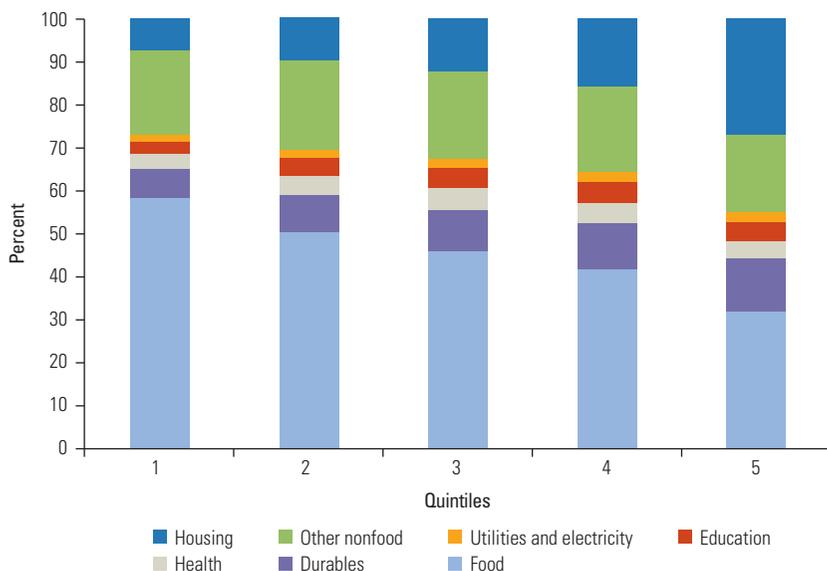
Figure 2.1 shows the overall composition of per capita expenditures in the 2010 VHLSS. Spending on food now constitutes less than half of per capita expenditures compared to 57 percent in 1998, and durable goods and housing make up nearly a quarter of aggregate welfare.

Figure 2.2 shows the composition of expenditures, categorized by food, nonfood, durable goods, housing, and other spending—broken down by quintile of per capita expenditure. The share of food falls from 58 percent (in the poorest quintile) to only 32 percent (in the wealthiest quintile). In contrast, individuals in the bottom quintile spend only 7 percent of total expenditures on housing and another 7 percent on durables compared to 27 and 12 percent, respectively, for the wealthiest quintile. These gradients are consistent with those of other countries at similar levels of development.

Consumption adjusted for household size

Our objective is to calculate a measure of individual welfare and estimate the number of people who live below the poverty line. But in households, individuals live together, eat together, and often pool their resources. Household surveys like the VHLSS measure expenditures at the household rather than the individual level. Different approaches can be used to move from the household to the individual level. One approach is to use equivalence scales and to adjust for household-level economies of scale. In the absence of a well-defined equivalence scale for Vietnam and building on

FIGURE 2.2 Composition of per capita expenditures in Vietnam, by per capita expenditure quintile, 2010



Source: 2010 VHLSS.

past practices, household expenditure is converted into per capita terms by simply dividing by household size. The implications for the poverty profile of using alternative measures, such as adjusting for adult equivalencies and household economies of scale, are discussed in chapter 3.

Consumption adjusted for temporal and spatial cost of living

One of the advantages of the CBN methodology is that it anchors the poverty line at a fixed level of well-being and consequently allows for consistent poverty comparisons over time. However, households living in different regions of the country may face different prices for similar goods due to differences in transport, storage, and marketing costs. For example, consumers pay more per kilogram to purchase rice in a market in Ho Chi Minh City than they pay to purchase the same quality of rice in a rural district in the Mekong Delta, where the rice is grown. In contrast, laundry soap may cost more in rural areas than in cities, where it is produced and packaged. Prices also change over time due to inflation and other factors. Housing costs, in particular, vary substantially between urban and rural areas and across regions of the country.

Some countries (for example, Indonesia, Mozambique, and the Philippines) account for inflation and spatial cost-of-living differences by constructing different poverty lines for each region, based on region-specific

prices and (sometimes) region-specific consumption baskets. In keeping with past practice in Vietnam, a single national GSO-WB poverty line was constructed using information from the 2010 VHLSS. The new GSO-WB poverty line is applied to spatially and temporally adjusted (that is, real) per capita expenditures to calculate poverty rates.

Temporal adjustments are straightforward; the consumption aggregates described in table 2.1 have been deflated to January of each survey year (for example, 2004, 2006, 2008, 2010) using the GSO's official consumer price index (CPI) deflators for rice, other foods, and nonfoods. Before 2010, spatial adjustments were made using regional CPI deflators provided by the GSO. For 2010, new spatial cost-of-living indexes (SCOLIs) were estimated and are used instead of regional CPI deflators to calculate poverty rates.

Rationale for the SCOLI

There are three reasons why prices collected for the CPI are poorly suited to measuring spatial differences in the cost of living. First, CPI prices are collected on a frequent basis in outlets where a wide range of consumer goods are available and shopping volumes are high. These are typically located in urban and peri-urban areas. But many of the rural population (including poor households) shop in local markets near where they live. Second, the specification of items whose prices are collected for the CPI is not the same across provinces. Vietnam's CPI price collection system maintains temporal consistency (prices for the same items are collected over time in each location) but not spatial consistency (items in the basket may be slightly different in each location). For example, prices of higher-end cotton shirts may be surveyed in large urban areas, while prices for lower-cost polyester shirts are surveyed in smaller towns or rural areas. Regional variations in the specification of items may reflect quality differences rather than capture only price differences for an identical good. Third, a CPI and SCOLI have different objectives, and the differences make it difficult for the two indexes to rely on the same set of price data. A CPI aims to give equal weight to every Vietnamese dong spent; it is used as a deflator to ensure that the real value of currency remains unchanged. Consequently, the expenditure patterns of wealthier households have more weight in a CPI because they spend more money, and a CPI price collection system targets outlets with a high volume of purchases. In contrast, a SCOLI is population weighted rather than dong weighted; it is estimated using the prices paid by the average individual from each area, and prices are aggregated into a population-weighted index that treats everyone equally. In short, compared to the CPI, a SCOLI requires different budget shares for aggregating items into an index, a different set of outlets for collecting prices, and different weights for aggregating information on individuals to form regional averages.

TABLE 2.3 Spatial cost-of-living index (SCOLI) in Vietnam, by region and sector, 2010

Region	Urban households	Rural households
Red River Delta	1.00	0.79
Midlands and northern mountains	0.81	0.79
North-central coast	0.78	0.71
Central highlands	0.83	0.78
Southeast	0.97	0.77
Mekong Delta	0.74	0.7

Source: 2010 VHLSS.

Note: Calculations are based on a Törnqvist index applied to regional average prices that are pooled over the two rounds of SCOLI data collection and using person-weighted average budget shares, with housing values based on the hypothetical values reported by all survey respondents.

Regional adjustments were based on regional CPIs in earlier rounds of the VHLSS. However, for 2010, adjustments were made for regional cost-of-living differences using market price data from a SCOLI fielded in conjunction with the second and third rounds of the 2010 VHLSS. The approach is described in annex 2B.

The 2010 SCOLI ranges between 0.7 and 1.0 (table 2.3). The Mekong Delta has the lowest overall cost of living and the Red River Delta (which is also the base region) has the highest cost of living. In all but two of the six regions, the SCOLI shows only a small difference in the cost of living between urban and rural sectors. The two exceptions are the Red River and southeast regions, where the urban cost of living is approximately 20 percent higher than the rural cost of living, largely reflecting the higher estimated cost of housing and local amenities in the metropolitan areas of Hanoi and Ho Chi Minh City. Apart from these two exceptions, the variation in the cost of living is greater across regions than it is between the urban and rural sectors within a region.

Constructing a new GSO-WB poverty line

The poverty line consists of two components—a food poverty line and an additional allocation for essential nonfood needs. The food poverty line is estimated in three steps. First, a reference food basket is defined that reflects the consumption patterns of the poor; second, quantities are adjusted to reach an agreed nutrition norm; and third, the cost of purchasing the adjusted reference basket is calculated. An allowance for essential nonfood needs is estimated using an Engel's curve regression and is then added to the food poverty line in order to construct the total poverty line.

Defining the Reference Food Basket

The reference food basket used to construct the original GSO-WB poverty line is anchored in the food consumption patterns of poor households in the 1993 VLSS.⁵ The reference food basket for the updated GSO-WB pov-

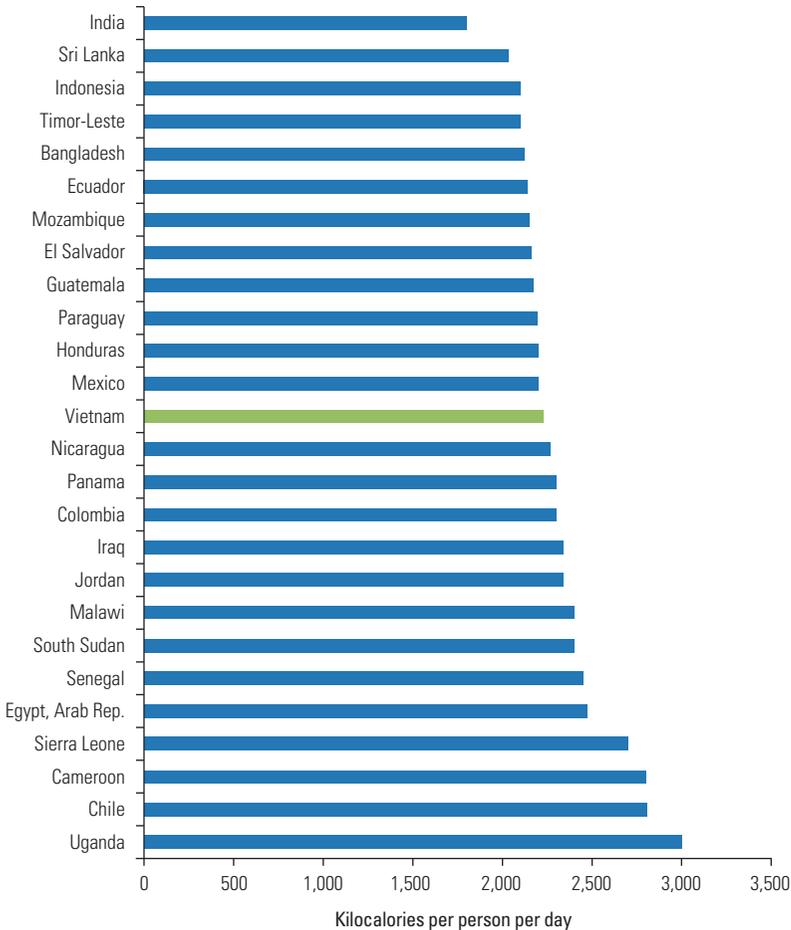
erty line is anchored in the food consumption patterns of poor households in the 2010 VHLSS.

Defining the reference basket is an iterative process; we do not know in advance which households are poor so we begin with an initial reference group and adjust iteratively (see Pradhan et al. 2001). Households are ranked according to SCOLI-adjusted and temporally adjusted per capita expenditures (henceforth referred to as real per capita expenditures) from least well-off to most well-off, and the poor are initially defined as those in the bottom 2.5–20 percent of the distribution of real per capita expenditure.⁶ The initial reference group ultimately became the final reference group; the 2010 poverty rate, based on an updated GSO-WB poverty line, was close to 20 percent.

Analyses were carried out to assess the stability of the poverty line food basket across different reference groups; food consumption patterns of the bottom 2.5–20 percent (bottom quintile) of individuals were compared with the bottom 2.5–10 percent (bottom decile). The initial 2.5–20 percent reference group was divided further to compare (a) food baskets for bottom-quintile ethnic minorities and bottom-quintile majorities and (b) food baskets for bottom-quintile urban and bottom-quintile rural households. Details are presented in table 2A.2.

Food consumption patterns are very similar for the poorest 10 percent and the poorest 20 percent of the population. Similarly, the consumption patterns of poor minority households are, on average, very similar to consumption patterns of poor Kinh households. Dietary patterns, however, are different for urban and rural households in the reference group: urban poor households consume less rice and more higher-priced calories (meats, oils) and are more likely to consume food and drinks outside the home than rural households.

Although the GSO-WB poverty line is based on a single national reference basket for poor households, Vietnam's official poverty lines use different reference baskets for urban and rural households. Other countries, including, for example, Indonesia, Mozambique, Papua New Guinea, and the Russian Federation, define regional reference baskets that reflect local preferences and tastes. The problem with using different reference baskets, particularly for urban and rural areas, is that the different baskets often reflect diets of different quality, so the poverty line for urban areas (based on the consumption patterns of urban households) may reflect a superior standard of living than the poverty line for rural areas (based on the consumption patterns of rural households). In 2010, only a small fraction (9 percent) of the nationally defined reference group actually lived in urban areas. Given this, coupled with concerns about avoiding quality differences (that is, setting a higher standard of living for urban households), a single national reference food basket was used to construct the new GSO-WB poverty line.

FIGURE 2.3 Nutrition norms used to anchor poverty lines in different countries

Sources: United Nations Statistics Division 2005; World Bank staff estimates.

In line with standard CBN practice, food quantities in the reference basket are scaled up to an “acceptable” nutritional norm, holding constant the relative composition of the reference basket (that is, all quantities are scaled up by the same factor). But what constitutes an acceptable norm? International experience shows that countries anchor their poverty lines in very different caloric norms, ranging from a low of 1,800 kilocalories per person per day for India (India, Planning Commission 2009) to 3,000 or more kilocalories for some countries in Africa (figure 2.3).

The original GSO-WB poverty line was anchored in a caloric norm of 2,100 kilocalories per person per day. However, the composition of the Vietnamese population has changed since the early 1990s, when the 2,100

kilocalories norm was set. The share of young children in the population (who consume less food) has decreased, and the share of adults (who consume more) has increased. A new caloric norm of 2,230 kilocalories per person per day was estimated using age- and gender-specific caloric requirements for the Vietnamese population developed by the Nutrition Institute in the Ministry of Health (MOH 2006) and weighted by the relevant age-gender composition of the national population in the 2010 VHLSS. These new norms compare well with international practice

Table 2.4 compares the calorie and expenditure composition of the 1993 reference food basket used to estimate the original GSO-WB poverty line with the new reference food basket used to construct the 2010 GSO-WB poverty line. The 1993 reference basket was heavily dominated by rice (79 percent of calories, 46 percent of food spending). The 2010 basket is more diversified; although rice continues to be an important source of food for the poor (66 percent of calories, 30 percent of food spending), the poor's consumption patterns have become more diversified to include, for instance, pork and other meats and seafood, vegetables and fruits, more oils, and more calories from meals eaten outside the household. Rice calories are very cheap; calories from pork, oils, and seafood are more expensive. The cost of the 2010 reference basket is therefore higher than the original 1993 reference basket. In addition, there has been a substantial increase in the nonquantified share of consumption—that is, food reported under “other” categories and meals eaten outside the household. More than 95 percent of food consumption was recorded under quantified items in the 1998 VLSS compared to less than 80 percent in the 2010 VHLSS. An extended list of food items was included in the 2012 VHLSS, with the aim of getting better (more quantified) measures of food consumption.

Calculating the food poverty line

The food poverty line is defined as the cost of purchasing the (scaled) reference food basket. Three sources for food prices could be used to estimate the food portion of the poverty line: (a) unit values (reported value of food consumption divided by reported quantities) calculated from the 2010 VHLSS survey, (b) food prices collected by the GSO Price Department for the CPI, and (c) food prices collected through the SCOLI survey.

The original GSO-WB food poverty line was based on CPI food prices provided by the Price Department. However, Vietnam's new official poverty lines are calculated using unit values from the 2006 VHLSS and adjusted for inflation. Both the SCOLI and CPI prices cover only a subset of food items in the 2010 VHLSS. Unit values (real or imputed in the case of non-quantified consumption) are available for all food items in the VHLSS and, moreover, can be estimated specifically for low-income households, thus reflecting what the poor actually purchase (quality, brand) and what they pay. There are mixed views in the literature (Deaton 1988, 1997; Deaton

TABLE 2.4 Composition of the reference food basket for Vietnam, 1993 and 2010

Food item	1993		2010	
	Average share of total calories	Average share of total food expenditure	Average share of total calories	Average share of total food expenditure
Plain rice (including fragrant and specialty rice)	78.9	46.5	66.4	30.5
Sticky rice	2.7	2.3	4.2	2.5
Maize (in seed equivalent)	1.0	0.4	1.6	0.4
Cassava (in fresh-type equivalent)	1.9	0.9	1.0	0.3
Potatoes of various kinds (in fresh-type equivalent)	1.6	2.5	0.3	0.3
Wheat grains, bread, wheat powder	0.3	0.4	0.3	0.3
Flour noodles, instant rice noodle/porridge	0.3	0.7	1.3	1.6
Fresh rice noodles, dried rice noodles			0.4	0.5
Vermicelli			0.1	0.2
Pork (in equivalent of the pork type with removed fat)	2.4	9.3	4.0	11.1
Beef			0.1	0.8
Buffalo meat	0.0	0.5	0.0	0.2
Chicken meat	0.7	5.1	0.9	5.1
Duck and other poultry meat	0.1	0.7	0.2	1.0
Other types of meat			0.0	0.3
Processed meat			0.1	0.6
Lard, cooking oil	1.8	1.5	4.2	2.5
Fresh shrimp, fish	1.3	8.3	1.4	6.9
Dried and processed shrimp, fish			0.3	1.2
Other aquatic products and sea-food (crabs, snails, . . .)			0.1	0.5
Eggs of chickens, ducks, Muscovy ducks, geese	0.0	0.3	0.7	1.7
Tofu	0.4	0.9	0.6	1.3
Peanuts, sesame	0.7	0.8	0.5	0.4
Beans of various kinds	0.4	0.6	0.3	0.3
Fresh peas of various kinds			0.1	0.4
Morning glory vegetables	0.6	2.2	0.5	1.1
Kohlrabi	0.3	1.0	0.1	0.2
Cabbage	0.2	1.0	0.1	0.4
Tomato	0.1	0.7	0.0	0.4
Other vegetables			0.7	3.3
Orange	0.0	0.2	0.0	0.2
Banana	0.7	1.2	0.6	0.6
Mango	0.0	0.3	0.0	0.2
Other fruits			0.4	1.5
Fish sauce	0.3	2.0	0.2	1.1
Salt	0.0	0.5	0.0	0.3

(Table continues next page)

TABLE 2.4 (continued)

Food item	1993		2010	
	Average share of total calories	Average share of total food expenditure	Average share of total calories	Average share of total food expenditure
MSG	0.0	0.8	0.0	0.3
Glutamate			0.0	1.3
Sugar, molasses	1.3	1.3	1.3	1.2
Confectionery			0.6	1.0
Condensed milk, milk powder	0.0	0.1	0.2	0.7
Ice cream, yoghurt			0.0	0.2
Fresh milk	0.8	0.9	0.1	0.5
Alcohol of various kinds	0	0	1.3	1.8
Beer of various kinds			0.1	0.3
Bottled, canned, boxed beverages			0.1	0.2
Instant coffee			0.0	0.2
Coffee powder			0.0	0.1
Instant tea powder			0.0	0.1
Other dried tea	1.0	6.3	0.4	1.1
Tobacco			0.0	2.3
Betel leaves, areca nuts, lime, betel pieces			0.0	0.1
Outdoor meals and drinks			3.3	5.9
Other food and drinks			1.0	2.6

Sources: For 1993, World Bank 1999; for 2010, 2010 VHLSS.

Note: The 1993 food basket includes only a subset of the food categories in the 1993 VLSS. In particular, it does not include non-quantified food categories (for example, other vegetables) or categories with negligible levels of reported consumption. The share of consumption reported in non-quantified categories increased substantially between 1993 and 2010, and special methods were used to impute prices and estimate calories for non-quantified consumption in the 2010 VHLSS.

and Tarozzi 2005) about whether unit values are adequately well specified to be used as prices. Even well-defined items in the household consumption module, such as rice, are available in a range of qualities, and prices vary between urban and rural areas and among regions. Limiting unit values to a group of poor households will help to control for quality differences, which are usually linked to income levels (for example, wealthier households tend to purchase higher-quality, more expensive rice).

Consistent with the methodology used by the government to estimate Vietnam's official poverty lines, the new GSO-WB food poverty line is calculated using mean unit values for food purchases by poorer households (bottom 2.5–20 percent) reported in the 2010 VHLSS. National food poverty lines are estimated for each round of the 2010 VHLSS (June, October, December) using the national reference food basket and unit values from each round, adjusted for inflation, and then averaged to construct a national food poverty line in January 2010 dong.

The new GSO-WB food poverty line for 2010 is D 343,000 per person per month (D 4,116,000 per person per year).

Calculating the total poverty line, including food and essential nonfood spending

In addition to food, an allowance is added for essential nonfood spending such as for fuel, housing, schooling, health care, clothing, and other daily needs. However, estimating the nonfood component of the poverty line is not as straightforward as estimating the food poverty line because there is no easily defined “norm” for nonfood expenditures in the way that caloric norms can be used to define food needs.

The CBN approach looks at the actual expenditure patterns of the poor in the 2010 VHLSS with the aim of estimating (a) an “austere” allowance for nonfood needs, based on the typical value of nonfood spending by households whose total expenditure just equals the cost of the food poverty line and (b) a “minimal but adequate” allowance for nonfood needs, based on the typical value of nonfood spending by households whose food spending is equal to the cost of the food poverty line, so that basic food needs are fully met.

The relationship between the share of spending on food and total per capita expenditures is measured by an Engel’s curve. Engel’s law states that the food share decreases as expenditure (welfare) rises. The average food share for each group of households is calculated using the following Engel’s curve regression (Ravallion and Bidani 1994):

$$\frac{f(y_i)}{y_i} = \alpha + \beta_1 \log\left(\frac{y_i}{b^f}\right) + \gamma'(d_i - \bar{d}) + \text{residual}_i, \quad (2.1)$$

where $\frac{f(y_i)}{y_i}$ is the food budget share, α is a national intercept, $\left(\frac{y_i}{b^f}\right)$ is total (nominal) expenditure divided by the food poverty line, and d_i is a vector of demographics with mean \bar{d} .

In keeping with international practice, we propose using the upper-bound poverty line (that is, with “minimal but adequate” allowance for nonfood) as the new GSO-WB poverty line, which is defined as the food poverty line divided by Engel’s coefficient estimated from the following regression (0.525):⁷

$$\frac{b^f}{*}. \quad (2.2)$$

The new poverty line is based on the nonfood spending of a typical household at the point on the Engel’s curve where actual food expenditure is equal to the food poverty line.

The new GSO-WB poverty line is therefore defined as D 653,000 per person per month, which is calculated as D 343,000 (food poverty line) / 0.525.

New poverty estimates for 2010: GSO-WB and official poverty methodologies

New poverty estimates were calculated using the new GSO-WB poverty line and consumption aggregates described in this chapter; they are presented in table 2.5. For purposes of comparison, the table also presents Vietnam's official household-level poverty estimates for 2010,⁸ based on current official poverty lines of D 400,000 per person per month (rural) and D 500,000 per person per month (urban). National poverty rates based on the GSO-WB methodology are higher overall—20.7 percent compared to 14.2 percent—which is not surprising given that the GSO-WB poverty line (D 653,000 per person per month) is higher than the official poverty lines. Comparing the two estimates for 2010, official estimates suggest higher rates of poverty in the north-central and south-central coastal regions compared to GSO-WB estimates and slightly lower rates in the central highlands and southeast regions. Differences in poverty estimates for the southeast primarily reflect the fact that the SCOLI methodology estimates a higher cost of living in the southeast compared to the CPI-based regional deflator. Overall, the GSO-WB methodology suggests lower poverty rates in urban areas than official estimates.

Although the methodologies are broadly similar (both use a CBN approach based on spending behavior of the poor in the VHLSS), the new GSO-WB poverty line is higher than official lines for the following reasons:

- Official lines were finalized in late 2010, before the 2010 VHLSS data were available and are thus based on a food reference basket and consumption behavior of poor households in the 2006 VHLSS. As noted, the 2010 VHLSS is different from the 2006 VHLSS in several important respects, including sampling and design of the questionnaire.
- Official poverty lines were estimated using the temporally comparable consumption aggregates rather than comprehensive consumption aggregates. As demonstrated in table 2.1, the comprehensive aggregate is higher due, in particular, to the inclusion of more types of durable goods and, most important, a better measure of the value of housing services. But using the new measure of housing services does not in itself lead to a higher poverty rate. We tested a modified comprehensive consumption aggregate that included a value of housing calculated using the original GSO-WB method and then calculated new poverty lines and poverty rates. The “old housing method” poverty rate was 21.3 percent, slightly higher than the “new housing method” poverty rate.
- Although food poverty lines are similar in the official and GSO-WB approaches, a decision was made to use a lower allocation for essential nonfood spending for the official poverty lines than indicated in the VHLSS data (see discussion in chapter 1).

TABLE 2.5 Poverty estimates for Vietnam, 2010: Comparing the GSO-WB methodology and the official methodology*Percent*

Indicator	GSO-WB poverty estimates				Official poverty estimates		Share of total population
	Poverty		Extreme poverty		Contribution to total		
	Rate	Contribution to total	Rate	Contribution to total	Rate	Contribution to total	
All Vietnam (national)	20.7	100	8	100	14.2	100	100
Urban	6	9	1.5	6	6.9	6	30
Rural	27	91	10.7	94	17.4	94	70
Red River Delta (Hanoi)	11.4	12	2.8	8	8.34	13	22
Northeastern mountains	37.3	21	17.9	26	24.2	20	11
Northwestern mountains	60.1	9	36.5	14	39.4	9	3
North-central coast	28.4	16	9.7	15	24	20	12
South-central coast	18.1	7	5.9	6	16.9	10	9
Central highlands	32.8	10	17	13	22.2	9	6
Southeast							
(Ho Chi Minh City)	8.6	7	3.1	7	2.3	4	18
Mekong Delta	18.7	17	4.8	11	12.6	17	19

Sources: 2010 VHLSS; GSO 2012 for official poverty estimates.

Other important differences between the two methodologies also might result in different poverty rates in the aggregate and across regions. For example,

- Official poverty rates for 2010 are calculated on the basis of per capita incomes in the full VHLSS,⁹ with some adjustments at the provincial level following discussions with MOLISA. As described in box 2.2, income-based poverty estimates are typically different (and yield a different poverty profile) than consumption-based estimates.
- Income-based poverty rates are adjusted for spatial cost-of-living differences using a CPI-based regional deflator rather than the SCOLI. Consumption-based poverty rates are reestimated using CPI-based spatial cost-of-living adjustments instead of the SCOLI. The impact is small, raising the poverty rate (to 21.5 percent) rather than lowering it.

Neither set of lines is inherently better than the other. As noted in chapter 1, they are designed to serve different purposes. The strength of the GSO-WB approach lies in its consistency over time coupled with its independence from budgetary or political considerations. In contrast, Vietnam's official poverty lines are intended primarily to help the government to set targets and related resource allocations for poverty reduction programs and policies under Vietnam's 2011–15 SEDP. In this sense, they are administrative lines, constrained by resource availability. In response to a recent new directive on social protection (Resolution 15), MOLISA

is revising its methodology to calculate average and minimum living standards taking into account many of the revisions described in this chapter. This new methodology will be used to identify potential beneficiaries of social assistance and social insurance policies and programs.

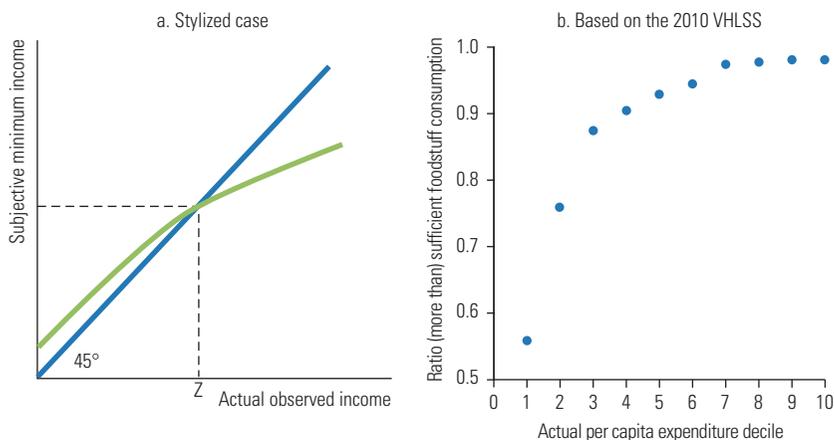
A poverty census was carried out in Vietnam at the end of 2010. Local surveys were used to identify poor and near-poor households (using short forms, proxy-means-test scorecards, and short income questionnaires), combined with village-level discussions to determine which households had incomes below the official poverty lines and were eligible to be on the list of poor households.¹⁰ The lists are updated annually, again using a mix of survey methods and village-level discussions, often applied differently across the 10,000 or so communes in Vietnam. Analysis suggests that many of those included on the lists are poor, but not all poor households are included on the list (chapter 3). In short, errors of exclusion are a greater concern than errors of inclusion.

Comparing the new GSO-WB poverty lines with citizens' perceptions

An alternative methodology was used to estimate subjective poverty lines (Kapteyn 1994; Ravallion 2012; Ravallion and Lokshin 2002), drawing on additional questions added to the 2010 VHLSS that elicited households' own assessment of whether their consumption of important items, such as foods, foodstuffs, electricity, water, clothing, and housing, was sufficient to meet their needs (see annex 2C for technical details and Marra 2012). The following question was used to assess the adequacy of food (for example, rice, basic food grains, staples) and foodstuffs (for example, meats, vegetables, condiments):

11. Has consumption of food and foodstuff by your household [...] been sufficient to meet needs over the last 30 days?		
Insufficient	1	
Sufficient	2	<input type="checkbox"/>
More than sufficient.....	3	<input type="checkbox"/>
No comment/not applicable	4	
Sufficient' means having met your household's minimum consumption needs.		

The intuition behind subjective poverty lines is straightforward: households whose observed incomes are above the subjective poverty line (that is, marked in green in figure 2.4, panel a) feel that they have enough or more than enough income to meet their needs, while households with observed incomes below the subjective line consider that their incomes are not adequate to meet their needs. The approach was implemented in a more disaggregated way for Vietnam, based on perceptions of the adequacy of specific items, for example, staple food, foodstuffs, and electricity. In the case of foodstuffs, panel b shows that, in 2010, poorer households

FIGURE 2.4 Measuring subjective poverty in Vietnam

Source: 2010 VHLSS.

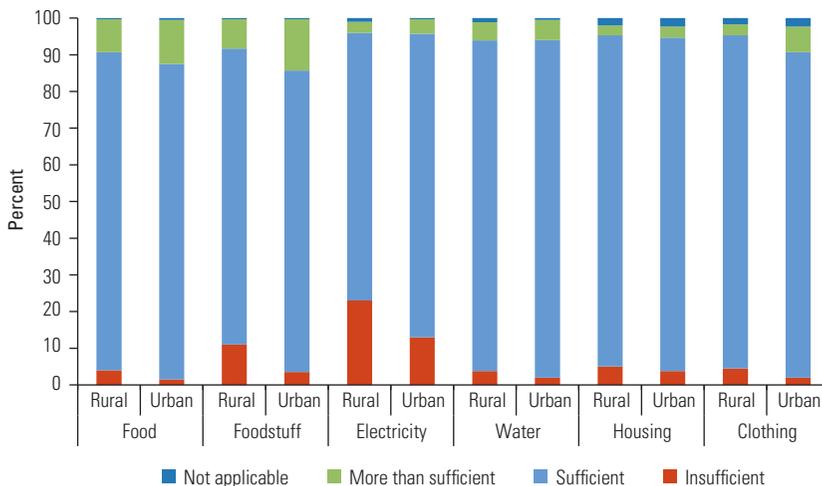
(deciles 1 and 2) were much less likely than better-off households to say that their consumption of foodstuffs is sufficient.

Based on responses in the 2010 VHLSS, less than 5 percent of Vietnamese households felt that they had consumed insufficient amounts of food in the 30 days preceding the survey. Acute hunger is no longer a major issue for Vietnam. However, 11.5 percent of households indicated insufficient consumption of foodstuffs, and the percentage was higher in rural than in urban areas—14 percent compared to 5 percent (figure 2.5). A surprisingly high percentage of households (25 percent in rural areas) reported that they were not able to consume sufficient electricity in the 30 days preceding the survey. This likely reflects supply-side problems with the quality and availability of electricity in 2010 rather than concerns about affordability; 2010 was a drought year in many parts of Vietnam, and load-shedding and brownouts were widespread.

Perceptions of sufficiency also differed across regions. Households in poorer regions (for example, the northern mountains and central highlands) were more likely to report insufficient levels of consumption. Concerns about insufficient electricity were particularly high in regions in the north of Vietnam.

The responses to these questions were used to calculate a subjective poverty line, following an approach proposed in Pradhan and Ravallion (2000). The perceived sufficiency of consumption was regressed against characteristics of the household such as total consumption, size, gender composition, age, and education of members. Different regression models were used to test for the sensitivity of results. Based on regression results, subjective poverty lines were calculated as the minimum total expenditure

FIGURE 2.5 Perceived sufficiency of consumption in Vietnam, by urban and rural location, 2010



Source: 2010 VHLSS.

needed by a household to meet sufficient (foodstuff) consumption needs. Annex 2C provides a more detailed description of the derivation of subjective poverty lines.

Subjective poverty lines ranged from a high of D 888,000 per person per month to a low of D 616,000 per person per month depending on the exact specification of the regression model. All estimates of subjective poverty lines were higher than Vietnam’s official poverty lines, and nearly all were higher than the new GSO-WB poverty line (D 653,000 per person per month). Most lines were clustered in the range of D 700,000 to D 800,000.

Estimates of subjective poverty lines suggest that the updated GSO-WB poverty lines and related poverty estimates do indeed reflect the aspirations and perceptions of the Vietnamese population.

Annex 2A Statistical tables

TABLE 2A.1 Differences between “temporally comparable” and comprehensive welfare aggregates

Item	Temporally comparable	Comprehensive
Food	Excludes consumption of tobacco and betel nut; assumes that food items listed in section 5A2 but not listed in 5A1 were consumed during Tet/holidays; Tet/holidays are considered 15.2 days long	Includes consumption of all 54 food items in VHLSS; assumes that the only food items consumed during Tet/holidays were those listed in section 5A1; Tet/holidays are considered 14 days long
Durables	Excludes consumption of certain durables: printers, photocopiers, mobile phones, microwaves, blenders, other transport; imputes using depreciation rates from the 1998 VLSS and a real interest rate of 5 percent	Includes all types of durables in 2010 VHLSS, but does not impute consumption for durables acquired more than 10 years prior; imputes using depreciation rates calculated from 2010 VHLSS data and real interest rate of 5%
Housing	Imputes housing consumption as 11.8% of other nonfood consumption for rural households and 21.4% for urban households	Imputes annual housing consumption as 2.88% of reported housing values. 2.88% is the median ratio of rental income to housing values for households in the 2010 VHLSS who are renters
Education	Equals total expenditures related to compulsory school subjects	Also includes supplemental expenditure on education, for tutors, typing classes, and so forth
Health	Equals spending on curative and preventive care, including out-of-pocket costs of inpatient and outpatient health services, expenditures for nonprescription medicine, and expenditures for medical tools	Also includes spending on health insurance
Utilities: Electricity, water, garbage	Simple sum of reported spending	Same
Other nonfood items (for example, clothing, fuel, kitchen items, and services)	Excludes spending on parties and celebrations and consumption of self-produced daily nonfood items from section 5B1	Same
Temporal deflator	GSO's rice, nonrice food, and nonfood monthly CPI	Same
Spatial deflator	GSO's regional CPI	2010 SCOLI

TABLE 2A.2 Reference food basket for Vietnam, by population group, 2010

Food item	Average share of total calories					
	2.5–20th percentile					2.5–10th percentile
	Subpopulation					
	All	Ethnic minorities	Ethnic majority	Urban	Rural	All
Plain rice (including fragrant and specialty rice)	66.4	64.2	68.2	63.1	66.7	69.1
Sticky rice	4.2	7.9	1.1	1.2	4.5	4.4
Maize (in seed equivalent)	1.6	2.7	0.6	1.1	1.6	2.6
Cassava (in fresh-type equivalent)	1.0	1.9	0.2	0.3	1.0	1.4
Potatoes of various kinds (in fresh-type equivalent)	0.3	0.3	0.3	0.3	0.3	0.2
Wheat grains, bread, wheat powder	0.3	0.2	0.4	0.5	0.3	0.2
Flour noodles, instant rice noodles/porridge	1.3	1.1	1.4	1.9	1.2	1.0
Fresh rice noodles, dried rice noodles	0.4	0.3	0.6	0.6	0.4	0.3
Vermicelli	0.1	0.0	0.1	0.1	0.1	0.1
Pork (in equivalent of the pork type with removed fat)	4.0	4.0	4.1	4.3	4.0	3.6
Beef	0.1	0.1	0.1	0.1	0.1	0.1
Buffalo meat	0.0	0.1	0.0	0.0	0.0	0.0
Chicken meat	0.9	1.0	0.8	0.9	0.9	0.8
Duck and other poultry meat	0.2	0.1	0.2	0.1	0.2	0.1
Other types of meat	0.0	0.0	0.0	0.1	0.0	0.0
Processed meat	0.1	0.1	0.1	0.1	0.1	0.1
Lard, cooking oil	4.2	4.0	4.3	4.4	4.1	3.9
Fresh shrimp, fish	1.4	0.8	1.9	1.8	1.4	1.2
Dried and processed shrimp, fish	0.3	0.4	0.3	0.3	0.3	0.3
Other aquatic products and seafood (crabs, snails, . . .)	0.1	0.1	0.1	0.1	0.1	0.1
Eggs of chickens, ducks, Muscovy ducks, geese	0.7	0.5	0.8	0.8	0.7	0.6
Tofu	0.6	0.6	0.7	0.6	0.6	0.6
Peanuts, sesame	0.5	0.5	0.6	0.5	0.5	0.4
Beans of various kinds	0.3	0.3	0.2	0.3	0.2	0.2
Fresh peas of various kinds	0.1	0.1	0.1	0.1	0.1	0.1
Morning glory vegetables	0.5	0.4	0.7	0.6	0.5	0.5

(Table continues next page)

TABLE 2A.2 (continued)

Food item	Average share of total calories					
	2.5–20th percentile					2.5–10th percentile
	Subpopulation					
	All	Ethnic minorities	Ethnic majority	Urban	Rural	All
Kohlrabi	0.1	0.0	0.1	0.1	0.1	0.1
Cabbage	0.1	0.1	0.1	0.2	0.1	0.1
Tomatoes	0.0	0.0	0.1	0.1	0.0	0.0
Other vegetables	0.7	0.7	0.6	0.8	0.6	0.6
Orange	0.0	0.0	0.0	0.1	0.0	0.0
Banana	0.6	0.6	0.5	0.5	0.6	0.6
Mango	0.0	0.0	0.0	0.0	0.0	0.0
Other fruits	0.4	0.3	0.5	0.6	0.4	0.3
Fish sauce	0.2	0.1	0.2	0.2	0.1	0.1
Salt	0.0	0.0	0.0	0.0	0.0	0.0
Sugar, molasses	1.3	0.8	1.7	1.6	1.3	1.0
Confectionery	0.6	0.6	0.7	0.8	0.6	0.6
Condensed milk, milk powder	0.2	0.1	0.2	0.2	0.2	0.1
Ice cream, yoghurt	0.0	0.0	0.0	0.1	0.0	0.0
Fresh milk	0.1	0.0	0.1	0.1	0.1	0.0
Alcohol of various kinds	1.3	1.7	0.9	1.0	1.3	1.3
Beer of various kinds	0.1	0.0	0.1	0.1	0.0	0.0
Bottled, canned, boxed beverages	0.1	0.0	0.1	0.2	0.1	0.1
Coffee powder	0.0	0.0	0.1	0.1	0.0	0.0
Other dried tea	0.4	0.3	0.4	0.3	0.4	0.3
Outdoor meals and drinks	3.3	2.1	4.3	7.6	2.9	2.1
Other food and drinks	1.0	0.8	1.1	1.3	0.9	0.8

Source: 2010 VHLSS.

Annex 2B Spatial cost-of-living estimates for 2010 VHLSS

A detailed price survey of 64 items was conducted in the main market in all communes in the October 2010 round of the VHLSS sample ($n = 1,049$) and in half the communes in the December 2010 round ($n = 539$). The 64 items included 45 specifically identified foods (including outdoor meals) and another 19 specifically identified nonfoods, including some durable goods and services.

To ensure consistency over space in the list of 64 items and to avoid problems with missing observations, surveyors were given detailed specifications (aided by photographs to ensure standardization) and were instructed to take two observations on the price of the detailed specification and to record whether that particular specification was the most common one in the market. A particular size—and brand name (for packaged goods)—was specified to avoid variation due to either bulk discounting or quality discounting. In almost 80 percent of the market-item combinations, the specification listed in the questionnaire was indeed the most common; it was available but not the most common in approximately 5 percent of markets. To deal with the problem of missing prices in the remaining market-item combinations, surveyors also collected the price of the most commonly available specification that was not the target specification. The price of the target specification was regressed against the prices of the alternate specifications (using brand-name fixed effects or, for unbranded items, creating quasi-brands by dividing products into intervals based on their unit prices) and a set of regional fixed effects. The regressions were used to impute the price of the target specification in about 10 percent of markets. District- or province-level average prices were used to impute the missing commune-level prices in the few cases remaining.

Various indexes are used to adjust for cost-of-living differences. The CPI is typically based on a Laspayres index. For purposes of the SCOLI, new prices were combined with regional budget shares from the 2010 VHLSS in order to calculate a Törnqvist price index. The Törnqvist index is the geometric average of the price relativities between region i and the base region, weighted by the arithmetic average of the budget shares for the two regions.

$$T = \exp \left[\sum_{j=1}^J \left(\frac{S_{kj} + S_{ij}}{2} \right) \ln \left(\frac{P_{ij}}{P_{kj}} \right) \right], \quad (2B.1)$$

where P denotes prices in each region and S is the budget shares.

The Törnqvist index specifically accounts for the fact that consumers will substitute away from items that are expensive in their own region, relative to the base region, by using the budget shares of both the base region and their own region when weighting the price relativities. Technically, it closely approximates a true cost-of-living index for any arbitrary

utility function, whereas the Laspeyres index (used for the CPI) is an exact measure of the cost-of-living index only when items are consumed in fixed proportions, without allowing for substitutions.

Because only 64 items had prices obtained in the SCOLI survey, compared to more than 100 consumption items listed in the VHLSS (including the consumption of housing services and the service flow from durables), prices were mapped to budget shares, and the price relativities for some closely related items were used as a proxy for the missing price relativities for other items. Two exceptions were for utilities, where the trimmed median unit value of electricity tariffs in each region and sector was used as the proxy to form a price relativity and flow of accommodation services from dwellings. For the imputed rents, detailed econometric analysis of the housing section of the VHLSS questionnaire was undertaken, to estimate a hedonic house value equation, which allowed for regional differences in the cost of constant-quality housing.

Annex 2C Subjective poverty in Vietnam

It is often argued that, as countries develop and become less poor, societies' standards also evolve. Even if the basic point of departure is to measure poverty with an "absolute" poverty line that is held fixed in real terms over time, societies will need to update this poverty line from time to time so that it remains relevant to a country's specific circumstances. As noted in chapter 2, as countries grow, their national poverty lines increase over time. Regardless of how carefully an absolute poverty line is developed, it is not possible to avoid some degree of arbitrariness. Challenges in setting a poverty line are grouped by Ravallion (2012) into (a) a referencing problem that includes the choice of reference group and basket and (b) an identification problem that involves translating households' utility function into measurable expenditures.

An alternative method for analyzing poverty that has received growing attention builds on subjective welfare questions included in household surveys. A *subjective* poverty line built up from such questions can offer an alternative entry point into the derivation of the poverty line and help with the interpretation of the conventionally derived CBN poverty line. This subjective poverty line exercise is particularly interesting in the context of Vietnam given the proposed update to the 2010 CBN poverty line.

Van Praag (1968) introduced subjective welfare assessment by constructing utility functions based on respondents' answers to the question asking how much income they regarded as "very bad," "bad," and so forth to "very good." A similar method, the minimum income question asks about the minimum income that respondents perceive to be necessary "to make ends meet" (Kapteyn 1994). However, applicability of the minimum income question methodology to the poorest countries has been debated (Deaton and Zaidi 2002; Pradhan and Ravallion 2000; Ravallion and Lokshin 2002; Krueger and Schkade 2008). Pradhan and Ravallion (2000) propose adapting Kapteyn's method by asking households if their consumption of food (and other things) has been adequate to "meet their needs." The 2010 VHLSS included a set of similar questions, allowing us to follow a similar estimation methodology. The exact framing of the question, asked of the household head, is the following:

11. Has consumption of food and foodstuff by your household [...] been sufficient to meet needs over the last 30 days?			
Insufficient	1	Food	Foodstuff
Sufficient	2	<input type="checkbox"/>	<input type="checkbox"/>
More than sufficient.....	3		
No comment/not applicable	4		
Sufficient' means having met your household's minimum consumption needs.			

The same question was asked about "water," "electricity," "housing," and "clothing and footwear."

Out of total respondents to the 2010 VHLSS consumption section, 440 reported insufficient food consumption, 8,218 reported just sufficient food, and 686 indicated that their food consumption was more than sufficient (54 households did not respond). Satisfaction with the adequacy of foodstuff consumption (including higher-cost calories from meat, vegetables, oils, and condiments) was lower: 1,079 respondents reported inadequate consumption of foodstuffs, 7,580 indicated sufficient consumption, and 678 claimed that their consumption was more than sufficient.

To calculate a subjective poverty line, we follow Pradhan and Ravallion (2000) in regressing perceived sufficiency of consumption on household expenditure and household (head) characteristics, using sufficiency of foodstuff as the dependent variable. Responses of “not applicable” were excluded, and the other three categories were subjected to an ordered probit regression including actual household consumption, household size, and characteristics of the household head. Regression coefficients, presented in table 2C.1, were also used in calculating a range of subjective poverty lines, including those reported in the chapter.

TABLE 2C.1 Subjective welfare regression and variables at country means

	Regression results		Means of variables	
	Coefficient	S.E.	Mean	S.D.
Log total household expenditure	0.717***	0.029	10.978	0.731
Log household size	-0.475***	0.049	1.435	0.381
Household head is female	-0.092**	0.040	0.22	0.414
Household head has a wage job	-0.172***	0.031	0.407	0.491
Household has at least one widow(er)	-0.040	0.042	0.186	0.389
Highest grade household head	0.022***	0.005	7.313	3.683
Household head is registered within the commune	0.046	0.034	0.256	0.437
Household head is of ethnic majority (Kinh)	0.516***	0.044	0.854	0.353
Share of household < 18 years old	0.206***	0.078	0.256	0.206
Share of household > 59 years old	0.009	0.093	0.072	0.175
Log land area owned by household	0.029***	0.005	4.859	3.757
Urban	-0.148***	0.041	1.297	0.457
Cutoff 1	6.264***	0.277		
Cutoff 2	9.327***	0.289		
Number of observations	9,337			
Pseudo R ²	0.139			

Note: The dependent variable is “perceived sufficiency of foodstuff consumption” with the following answer codes: 1 = insufficient, 2 = sufficient, and 3 = more than sufficient (“not applicable” is recoded as missing). The results are from an ordered probit regression. The natural logarithm is used for the log variables. The means of the variables and the regression are both weighted by population.

*** $p < .01$, ** $p < .05$.

Notes

1. The original GSO-WB poverty line was prepared as input to the 2000 poverty assessment, *Vietnam Development Report 2000: Attacking Poverty* (World Bank 1999).
2. A similar methodology was used in 2005 by a team of local and international experts, led by the Ministry of Labor, Invalids, and Social Affairs (MOLISA), to update Vietnam's official poverty lines for the 2006–10 Socio-Economic Development Plan (SEDP) and, led by MOLISA and, more recently, the GSO, to construct official poverty lines for the 2011–15 SEDP.
3. The decision to move to a fixed reference period was triggered by difficulties in measuring expenditures and prices during bouts of high inflation (for example, 2008) and an effort to capture seasonality in consumption patterns better.
4. These aggregates are in real terms; they are adjusted to January of the survey year and for regional cost-of-living differences.
5. The methodology is described in annex 2 of the *Vietnam Development Report 2000: Attacking Poverty* (World Bank 1999). Food consumption of the third quintile of households, ranked nationally based on per capita expenditures, was used to construct the reference food basket.
6. The group is restricted to the bottom 2.5–20 percent to avoid potential problems with outliers and measurement error.
7. Where α^* is defined as $\alpha^* \alpha + \beta_1 \log\left(\frac{1}{\alpha^*}\right)$.
8. Official estimates reflect the number of households, not the number of individuals, on the poverty list. To the extent that poor households are larger, on average, than nonpoor households, official estimates of the share of individuals below the poverty line would be higher than the share of households.
9. Each round of the VHLSS includes around 46,000 households. Detailed information on household income is collected for all households, but consumption information is collected for only 20 percent of households (three in each enumeration area) or 9,400 households in total. Only unit record data from the 20 percent sample (income plus consumption) are released to the public.
10. Prime Minister's Directive no. 1752/CT-TTg.

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