Designing Household Survey Questionnaires for Developing Countries: Lessons from Ten Years of LSMS Experience

Edited by Margaret Grosh and Paul Glewwe

Chapter 17: Consumption

Angus Deaton
Princeton University

Margaret Grosh
Development Research Group
The World Bank

First Version, May, 1997
This Version, July 1998
Fiona's 1st Version: October 23, 1998
Angus and Margaret: November 12, 1998

This research paper is funded by the Research Support Grant 679-61 "Increasing the Policy Relevance of LSMS Surveys."

The authors are grateful for useful comments to Richard Blundell, Martin Browning, Paul Glewwe, John Hoddinott, Alberto Martini, Andrew McKay, Raylynn Oliver, and, especially, Christopher Scott. The Statistical Institutes of Armenia, Ecuador, El Salvador, Jamaica, and Latvia and the Kiev Institute of Sociology in Ukraine conducted experiments in the collection of consumption data that are summarized. Eric Edmonds, Dean Jolliffe, Kinnon Scott, Diane Steele, Tilahun Temesgen, and Wlodek Okrasa contributed to the analysis that underlies some of the discussion.

Introduction

The measurement and understanding of living standards are overarching goals of the living standards surveys. Much of the focus is on poverty or deprivation, the lack of adequate living standards. Standard economic measure of deprivation are concerned with the lack of goods, or the lack of resources—income, expenditure, or assets—with which to obtain goods. But it is always important to keep in mind that many of the most important aspects of deprivation go beyond purely material deprivation. Deprivation of health, deprivation of education, deprivation of freedom from crime, and deprivation of political liberty are all important—and often more important than deprivation of material living standards. The role of development in freeing people from deprivation in a wide sense has been forcefully argued by Amartya Sen, see Sen (1999) for a recent and comprehensive account. Data from the living standards surveys frequently help us take a broad view of poverty, particularly data from the modules on health and education. Other important aspects of broadly construed living standards, such as life-expectancy, infant mortality, or the threat of crime, must be constructed in other ways. Nevertheless, measuring the material basis of living standards will always play an important role in the assessment of levels of living, and how to collect data for a consumption-based measure is the topic of this chapter.

The measurement of consumption has been a central objective of the LSMS program since its inception in 1980 and has remained so throughout some 50 surveys, all of which have been used to document living standards and poverty. Although the program has always acknowledged that living standards have many dimensions and has taken care to measure them in its surveys, the narrowly economic aspect of living standards in the program title was taken to mean not income, as had been the case in many previous surveys, but consumption. This consumption focus differentiated the LSMS surveys from some surveys in developing countries that immediately preceded the establishment of the LSMS, such as RAND's Malaysian Family Life Survey. However, many earlier surveys, including the Indian National Sample Survey (NSS), had long used per capita household expenditure as its measure of living standards and its basis for counting poverty.

The basic ideas underlying the measurement of consumption are straightforward. Nevertheless, there are various practical complexities, many of which are discussed in this chapter. Although income and wealth are what enable people to obtain goods and services, it is those goods and services themselves that directly generate economic well-being. The consumption module of the LSMS survey is designed to measure the consumption of these items in some detail and in the aggregate (with the aggregate being the total value of consumption at suitable prices). At its simplest, the module collects data on how much people spend on various goods and services. How best to gather such information and in how much detail, how to deal with goods that are not obtained through the market, and how to obtain accurate data on prices are among the topics discussed in this chapter.

The LSMS surveys differ from many other household surveys in that their primary concern is not the estimation of *means* or of *totals*. Instead, the single most important concern of the LSMS surveys is documenting the *distribution* of living standards -- measuring poverty (often but not exclusively the fraction of the population in the left tail of the distribution) and, to

a lesser extent, inequality. The LSMS data are also used to illuminate a wide range of policy issues from descriptive tabulations to econometric modeling.

This emphasis on poverty and distribution must constantly be kept in mind because it has implications for the design of any LSMS survey. A survey that yields accurate estimates of *average* levels of income or consumption may nevertheless do a poor job of documenting income and consumption among the poor or of estimating the inequality of incomes. For example, if people have difficulty remembering high-frequency purchases (for example, food) after a day or two, then asking respondents about the purchases that they made on the previous day will yield more accurate data than asking them about the purchases that they made over the previous week or month. If the main concern is to estimate mean expenditure for the population, it may be sufficient to collect data on the average of the previous day's consumption since this figure would include all purchases both for those who purchased nothing the previous day and those who purchased several days' supply. In contrast, the average of the previous week or month's purchases will be biased downward if the longer recall period implies that some purchases will be forgotten and thus not reported. However, for measuring poverty, the previous day's measure will not be sufficient because all those who did not purchase anything would be counted as poor. This means that it might be better to ask them about purchases that they made over the previous week or month in spite of its downward bias. Much of the literature on the design of surveys in general is concerned with how best to estimate means and totals and can be seriously misleading when applied to LSMS-type surveys that have different concerns. This is particularly true of most existing consumer expenditure surveys around the world, which are designed to collect weights for consumer price indexes.

Part I of this chapter briefly reviews the arguments for using consumption rather than income as a measure of living standards and for using it to measure poverty and inequality. It goes on to discuss the principal uses to which consumption data have been put; while the documentation of living standards remains the central aim of LSMS surveys, there are a number of other important policy issues that can be illuminated using consumption data. Thereafter, Part I reviews some of the experience of more than 10 years of LSMS surveys in collecting consumption data. Part II discusses the data that are needed to construct a consumption-based measure of living standards and reviews the design issues that affect the cost of collecting data as well as its eventual accuracy. Part III presents a draft consumption module, while Part IV provides explanatory notes on that draft module.

Part I: Policy Issues

There are several good arguments for using consumption rather than income as a measure of living standards and to use it in calculations of poverty and inequality.

Why Use Consumption to Measure Living Standards?

Although the LSMS surveys, in common with many surveys in developing countries, give primary emphasis to consumption rather than income, there are many other surveys concerned with well-being that do not attempt to collect consumption data. Many of these are in industrialized countries, but the income focus is also standard in most surveys in Latin America.

There are both theoretical and practical considerations that affect the choice of income or consumption, and the balance in favor of one or the other may be different in different circumstances. Thus, it is useful to start by rehearsing the main arguments for and against each measure.

Theoretical Issues and Implications for Measurement. Income and consumption are different concepts, not just two different ways of measuring the same concept. Some economists prefer income as a measure of living standards, perhaps following a "rights" approach according to which income together with assets measures a person's or family's potential claims on the economy. Other economists prefer to use consumption because it measures what people actually acquire so that, if the level of living is a measure of economic input, consumption is the appropriate concept. Both can be defended as approximations to utility; the "indirect" utility function expresses welfare in terms of resources (positively) and of prices (negatively), which in practice usually means income or resources deflated by a price index -- real consumption or income, not money consumption or income. Whether consumption or income is measured, measures of prices are going to be needed whenever analysts wish to compare people who face different prices, which will be whenever they make comparisons over time or space.

Another consideration about whether to use income (including income from assets) or consumption is the time-period over which living standards are to be measured. At one extreme, there is a lifetime living standard measured either by average consumption over a person's lifetime or by their total lifetime resources, which will be the same apart from any bequests. The issue here is that some poverty is only temporary (for example, students are poor in the short term but not over their lifetimes, while the elderly may be poor but have not been poor throughout their lives) so that short-term measures of inequality can overstate lifetime inequality. One influential theory of consumption and saving is the "life-cycle hypothesis," which asserts that a person's consumption at any age is proportional to his or her lifetime resources. If this is true, measuring consumption is not only useful in its own right but also provides an indication of lifetime resources. However, the evidence for this hypothesis is controversial to say the least; for many people, the promise of resources in the future may do little to pay the bills today. Policymakers have to take account of current poverty regardless of the long-term prospects of the poor, because saying "Don't worry, they will be OK later" about poor children or "Don't worry, they've had their turn" about the elderly are not regarded as acceptable responses.

If a lifetime is too long a reference period, a day, a week, or a month are all clearly too short. Arguments can be made in favor of using a "season" as a reference period, and there is a substantial literature on seasonal poverty (see, for example, Sahn, 1989). However, there seems to be a general consensus that a year is a sensible reference period over which to judge people's living standards, even if this is inevitably a compromise that is too long for some purposes and too short for others. There is also a good deal of empirical evidence that, even in poor agricultural societies and even without the ability to borrow much, people can smooth their incomes within a particular year and perhaps over a series of years, so that consumption will reflect at least living standards throughout the year and perhaps even over a series of years (see Bhalla, 1979 and 1980; Musgrove, 1978 and 1979; Paxson, 1992 and 1993; Wolpin, 1982; and Chapter 6 of Deaton, 1997 for a review).

If a year is chosen as the standard for assessing living standards but the survey in question can only hope to measure flows over a shorter period, it is better to collect consumption data than income data in order to measure living standards. Most people do not receive income every day, and many do not receive income every season or at least not an equal amount in each season. So while consumption over a week, a fortnight, or a month is likely to be a reasonable indicator of living standards over the year or over a few years, income will not be. If analysts are interested in measuring averages, this will not matter much if the survey itself is spread over a year, since some people's zero incomes would be averaged with others' high seasonal incomes. However, they are usually not only interested in means -- in fact LSMS surveys are rarely the instrument of choice for estimating mean income or mean consumption -- but in inequality and in poverty, which are sensitive to the tails of the distribution, especially the lower tail. Gathering data on the previous month's income will overestimate inequality in annual living standards and, provided the poverty line is below the mode of the distribution, will overstate the fraction of people below the line. Although there are also random irregularities and seasonal patterns in consumption, they are typically smaller than those in income, because consumption is less tied to seasonal and weather-related patterns in agriculture than is income. Even so, consumption measured over a reference period of less than a year is still likely to overstate poverty and inequality on an annual basis. Also, the overstatement may not be constant over time if seasonal patterns change with time because one year is different from another or over the long run because agriculture accounts for a shrinking share of household income as economies become richer.

These arguments provide a persuasive case that, given the choice, (perfectly measured) consumption is a more useful and accurate measure of living standards than is (perfectly measured) income. These theoretical advantages of consumption are likely to decrease as the period over which it is feasible to gather data gets longer. If it is feasible to visit households on many occasions throughout the year this will clearly capture any seasonality in the household's income. Moreover, if the survey has a panel element so that income can be averaged over a series of years, there would be little to choose between income and consumption if one can be measured as accurately or as cheaply as the other.

Practical Issues. The choice between income and consumption is often determined more by practical than by theoretical considerations. In the United States, poverty is assessed by income not consumption, which cannot be used because the US does not have a consumption survey of adequate size and quality to permit the estimation of the poverty numbers. In general, however, whenever a new or reformed survey is being planned, the designers will have to choose whether to collect data on household income or consumption, and much will hinge on the relative costs and relative precision of the data collection required.

Neither consumption nor income data are easy to collect. For consumption, the need is for data on total household expenditure on goods and services and, as will be discussed in the next section, these usually have to be gathered item by item. In some cases, a substantial fraction of consumption does not come through the market, so those imputations have to be made. In industrialized countries such as the US and Britain, the detail and the associated time and effort of asking dozens or sometimes hundreds of questions will often make it seem relatively more attractive to collect income data, especially in situations where income comes from one or two sources (for example, wages and pensions) that are easily recalled or for which independent

documentation exists. By contrast, consumer expenditure surveys are seen as among the most "difficult and expensive surveys" to field in the statistical system (McWhinney and Champion, 1974). In the US, the Consumer Expenditure Survey (CEX) costs about five times as much per household as the current population survey (CPS), which is the main source for data on income, earnings, and employment.

Even so, the concept of expenditure (in other words, giving money in exchange for a good or service) is clear both to interviewers and interviewees whereas the concept of income, especially income from self-employment or own-business activity, is not. For own-account workers in agriculture and small businesses, their personal and their business accounts are often hopelessly entangled. Thus, in agriculture and elsewhere, the only practical way to estimate income is to gather data on all transactions, business as well as personal, and then to impose an accounting framework on the resulting information. This process is extraordinarily time-consuming, and the results are subject to large margins of error. Note that these difficulties are not specific to developing countries; even in the US and Britain, the various surveys (CPS and CEX in the US and the Family Expenditure Survey in Britain) do relatively poorly in gathering data on income from self-employment (see Coder, 1991 for the CPS; Branch, 1994 for a comparison of CPS and CEX; and Atkinson and Micklewright, 1983 for the FES). The difference between developing and developed countries is the fact that formal-sector wages and salaries are much less common in the developing countries.

Note that the income of many households -- particularly but not exclusively agricultural households -- varies seasonally throughout the year. In such circumstances, measuring households' annual income (which is the minimum amount of data that would be needed to get adequate measures of poverty and distribution) would require many visits to the household or reliance on the ability of the household respondents to remember their income from many months earlier. However, if consumption is smoothed over the seasons (much of the already cited literature suggests that this is done in most households), then consumption will vary less seasonally than income. It may also be possible to collect useful data on annual consumption without making multiple visits, an issue that will be further discussed below.

It is also generally thought that respondents are more reluctant to share information about their income and (to an even greater degree) their assets than about their consumption, which means that they are more likely to give deliberately inaccurate answers to questions about their income than to give the same kind of answers to questions about their consumption. In many countries, income is taxable, at least in principle, and it may be hard for the survey interviewers to persuade respondents that the information that they give will not be passed to the tax authorities. Rich households may even refuse to grant interviews to the survey team and, even if they do, the respondent, who may be a family member or even a servant, may be more knowledgeable about the household's consumption than about its sources and levels of income. Income from assets is likely to be particularly hard to capture because the ownership of assets is highly unequal and the wealthy who own most such assets are typically thought to be the least likely to cooperate. Given the fact that most of these survey interviews in developing countries are frequently conducted of necessity in a semi-public place, respondents are often reluctant to state their wealth in the presence of relatives and friends, even when their consumption levels are in part supported by that wealth. These problems of measuring assets and asset income are likely more severe for

measuring inequality than poverty, since those households who are below the poverty line typically have few assets.

What Analyses are Consumption Data Good For?

The consumption data that can be gathered in an LSMS survey have a number of important analytical uses.

Measuring Welfare. The policy importance of measuring living standards is indisputable. Household budget analysis has been used to document and to publicize poverty since the late 18th century. Although there are many non-economic components of living standards, such as health, access to education, and political freedom, consumption is the best measure of the economic component of living standards. Formally, the real value of consumption can be thought of as an approximation to utility, or "money-metric" utility, according to which an indifference curve is labeled by the amount of money at constant prices that is required to reach it (see Chapter 5 of Deaton and Muellbauer, 1980). Total household expenditure adjusted by a price index and divided by the number of people in the household (or by some more sophisticated count such as the number of equivalent adults) is a measure of the living standard of each member of the household and is the measure recommended in this book for analyzing poverty and inequality. See Deaton and Zaidi (1999) for a more comprehensive dicussion.

LSMS surveys also collect data on a wide range of other household and community variables that help describe other dimensions of living standards. For example, they collect data, on individual and community health outcomes and facilities and on the educational attainments of individuals and the educational facilities that exist in the community. These measures are frequently used not only to document living standards but also to explore their determinants in studies, for example, of the relationship between income, assets, and consumption, between earnings and schooling, or between health status, income, and consumption.

In addition to being used to construct a single summary measure of the economic welfare of households, the consumption data that can be collected in LSMS surveys have other important uses, some of which are discussed briefly below. For a much longer account with applications, see Deaton (1997).

Evaluating the Impact of Price, Subsidy, and Taxation Policies and the Provision of Public Goods. Analysts are often concerned with the effects of the price changes caused by changes in policy – taxes or subsidies - or by fluctuations in world prices. Consumption data are invaluable for assessing these effects, in particular who gets hurt by a price increase and by how much. Many developing country governments collect a large share of their revenue through tariffs or through taxes on consumption while simultaneously subsidizing the provision of many goods and services ranging from basic foods (such as bread, wheat, or rice) to transportation, health, and education. To a first approximation, a price increase hurts consumers in proportion to the amount of the good that they purchase, so, in order to know the distributional effects of a price change, analysts need to know who consumes what and where consumers are in the overall welfare distribution. For example, do transport subsidies really benefit the poor as is often claimed, or are the beneficiaries in reality people who are much better off? Improving the quality of clinics or

increasing the number of teachers in schools will not help the poor if the poor do not use these clinics or attend the kind of schools where these teachers are employed. Even simple cross-tabulations can establish results that, if not necessarily surprising, can resolve major policy controversies, see for example Grosh (1997) on kerosene pricing in Ghana and health care use in Guyana and Deaton (1988) on rice pricing in Thailand.

More complex modeling of price reform requires estimates of how consumers respond to price changes, so analysts can calculate dead-weight loss and the tradeoffs made between equity and efficiency. Once again, data on consumption, income, and prices that are needed to estimate these responses (see Newbery and Stern, 1987; Ahmad and Stern, 1991; and Chapter 5 of Deaton, 1997).

Nutrition and Poverty Lines. There is a long tradition in development economics of counting calories and of defining poverty in terms of malnutrition, for example by counting people whose caloric intake falls below some recommended standard. The authors of this chapter do not view nutrition as an adequate measure of welfare because people consume more items than food and clearly make tradeoffs between food and other goods, so that collecting data on calories consumed is no substitute for estimating consumption. Nevertheless, the documentation of nutrition is clearly of considerable interest in its own right.

In some surveys, a household's calorie consumption is estimated directly by nutritionists who enter the household and observe what is eaten by each household member, either by weighing and measuring foods as they are consumed or by asking the members questions about their dietary intake during the previous 24 hours. It is possible to imagine a module of this sort that could be added to a multi-topic survey, although, because it would be a lengthy module, it may displace other modules in the questionnaire as a whole. Swindale (forthcoming) provides guidelines on how to collect dietary intake data. Many writers believe that such methods are necessary to obtain accurate estimates of calorie intake -- see, for example, Bouis (1994) and Bouis and Haddad (1992). However, such dietary surveys also involve a number of difficulties. The survey techniques are invasive and may cause people to alter their behavior. There may also be enough variation in a household's consumption from one day to another to make a 24-hour recall period too short to yield accurate data with which to estimate poverty, yet longer periods may be too expensive or too invasive. A more common (albeit probably less accurate) way to count calories is the "indirect" method, which is usually used in an expenditure survey. Figures for the quantity of each good that the household has consumed can be obtained either by having the survey interviewers ask direct questions about the physical quantity consumed by the household as well as about the household's expenditure on the good or by collecting data only on expenditures and then deflating these expenditure figures by the prices of the commodities in question as obtained in the community or price questionnaires. Standard conversion tables are then used to convert quantities into a count of the number of calories contained in the food purchased, a measure known as "caloric availability."

Data on caloric availability has been used together with data on household income or expenditure to calculate calorie Engel curves, which plot the average household calorie consumption at each level of income or expenditure. Following work that was done in India over 25 years ago (see Dandekar and Rath, 1971a and 1971b and Government of India, 1993 for a

review), income or total expenditure poverty lines are obtained by calculating the income or total expenditure level at which the calorie Engel curve gives the recommended calorie intake. If the calorie Engel curve has a relatively high slope, then increasing household income will eliminate hunger relatively rapidly. If, as some recent writers have suggested, the elasticity of calorie consumption with respect to income is close to zero, economic growth alone will not eliminate hunger. This means that poverty can only be reduced by direct intervention, an approach which is closer to the basic needs philosophy. (See Behrman and Deolalikar, 1987 and Bouis and Haddad, 1992 -- who also argue that estimates are biased when caloric availability is used rather than direct dietary surveys -- as well as a contrary position by Subramanian and Deaton, 1996 and a review by Strauss and Thomas, 1995.)

The demand analysis discussed in the previous subsection can also be applied to calories, so as to calculate the effect on calorie intake of changes in prices, for example, of the elimination of subsidies on basic foods (see Laraki, 1989).

Intrahousehold Allocation and Gender Bias. Expenditure data are an important tool for researching the allocation of resources within the household and for testing different models of how that allocation might work. In recent years, many studies have found different outcomes for males and females, particularly boys and girls, within the same household. In some countries, infant mortality is higher among girls than among boys, and, in even more countries, educational outcomes are worse for girls than for boys. Several scholars have explored the possibility of using data on household expenditures to cast light on these different outcomes for boys and girls, as well as other groups, for example adult women compared with adult men or the elderly compared with prime-aged adults or widows compared with other household members. (See Chapter 24 on intrahousehold issues for a fuller discussion, as well as Chapter 4 in Deaton, 1997.)

It is costly and time-consuming for surveys to collect complete data on the consumption of every item by each family member. In fact, this may be impossible for the many joint (or household public) goods that are shared by all household members. As a consequence, most multi-purpose surveys, including the LSMS surveys, have collected household-level data on consumption and have made little effort to collect individual data. Nevertheless, there are some cases where consumption at the individual level can be inferred from household data such as health expenditures that are linked to an identified episode of illness on the part of one member or expenditures on men's clothing when there is only one man in the household. In some surveys, data on expenditures have been collected using the diary method, in which each adult family member has been asked to keep a diary about who spends what in the household, even if not on who consumes what. Even when data are to be collected by interviewers, it is probably possible to collect more individual data than has typically been done in the past if the interviewer can find out who consumes how much of such obviously private goods as tobacco, transportation, clothing, or entertainment.

Even when individual-specific data are not collected, it is possible to examine the effect of household characteristics, including the composition of the household, on the way that households allocate their budgets. For example, it may be that household expenditures on food and children's clothing are higher when there are relatively more women in the household or when a large share of household resources are earned by, and thus putatively controlled by, women. There is also a

developing literature (Bourguignon and Chiappori, 1992; Bourguignon et al, 1993; and Browning et al, 1994) that has identified *sharing rules* within the household. Provided that some goods can be identified that are consumed exclusively by one group within the household or if analysts have some data on who consumed what of each good, then it is possible to infer whether or not income is shared equally across the groups. Related to this is the examination of expenditures on "adult goods" (usually alcohol, tobacco, and adult clothing) for signs of gender bias in the treatment of children. Since the total household budget is not increased by the presence of children, parents typically reduce their expenditures on adult goods to make room for the costs of the children. If the parents cut back on their own consumption more for their sons than for their daughters, then this is evidence of discrimination against the girls in the household. Surprisingly, analysts have consistently failed to find such differences, even in places where there is other evidence (such as differential infant mortality) of bias against girls (see Chapter 4 in Deaton, 1997).

Family Structure, Child Costs, and Economies of Scale. The most commonly used measure of living standards is total household expenditure divided by the total number of household members, in other words, household total expenditure per capita. This measure, while convenient, ignores the fact that the needs of one household member differ from those of another household member, particularly between adults and children, and that there are likely to be some economies of scale to household size. Larger households are usually those with many children and those who would benefit most from economies of scale, so using the per capita total household expenditure measure almost certainly overstates the number of large households that are poor and understates the number of small households that are poor. In some countries -- most notably the US -- there is a different (official) poverty line for each type of household, and these lines embody both economies of scale and the different needs of adults and children.

There is a long history of studies in economics that have attempted to use consumption data to derive the cost of living for families of different types by inferring equivalence scales across age groups and estimating the extent of economies of scale. If such calculations were feasible and credible, they would have the key advantage over dividing resources by the number of people in the household that they take into account country-specific and local differences in the costs faced by different types of families. For example, it is often argued that children are relatively more expensive in rich countries than in poor agricultural societies. Unfortunately, all procedures for estimating equivalence scales are controversial, and many economists would argue that the task is a misguided and even impossible one (see Chapter 4 of Deaton, 1997 for a discussion of both sides of the argument).

Nevertheless, the consumption data have a more limited but less controversial role to play in helping analysts to check the implication of various models. Although all methods for measuring economies of scale or estimating equivalence scales must contain untestable identifying assumptions, most have stronger implications that can be tested using the data. The results can reveal a great deal about the plausibility of the models (see, for example, Deaton and Paxson, 1998, who used a number of LSMS data sets to show that the relationship between food expenditures and household size contradicts most of the obvious notions about how economies of scale might operate). Without consumption data, it is impossible to make any progress on the extremely important policy issue of how to factor differences in household size or structure into the assessment of household welfare. Until some agreed basis is established for correcting for

differences in the costs of living faced by households of different sizes and composition, there is no way to address such issues as the relationship between poverty and fertility or whether children are more likely to be poor than adults or the elderly.

Credit and Saving. A traditional use of expenditure data in analysis is to combine it with income data to derive estimates of saving at the household level. The role that saving plays in economic development has always been an important intellectual issue, and both public and private saving are rarely absent from the policy debate. Unfortunately, the generally poor quality of data on saving collected through household surveys has limited their contribution to this debate, except perhaps in countries like Taiwan where household saving rates are very high. Microeconomic income data have typically been poorly measured, and, even if consumption measures tend to be more accurate, the estimate of saving is the relatively small difference between two large and inaccurately measured numbers, and as such, may be mostly measurement error. It is not clear that having such measures of saving is worth the effort of obtaining them. To the extent that it is the owners of small-scale, household-based activities who are doing the saving, it is even more difficult to measure saving because data on income from these activities are extremely hard to measure accurately.

Using data from an expenditure module to contribute to a measure of use of credit may not be such a daunting prospect. Supplier credit constitutes a large share of households' total use of credit. A convenient way of eliciting information about supplier credit is to add questions in the consumption module about purchases on credit (see Chapter 22 on credit in this volume.)

Do LSMS Surveys Collect Accurate Consumption Data?

In most developing countries, there are unlikely to be any independent estimates of poverty and inequality against which LSMS data can be checked. However, it is possible to compare estimates of per capita consumption from the surveys with similar estimates from the National Income and Product Accounts (NIPA). Although the main purpose of the LSMS is not to measure means, if the data are enormously different from the NIPA estimates, this is likely to erode public confidence in the survey itself and, particularly, in its estimates of consumption. While it is important to make these comparisons, it should not be automatically assumed that the NIPA estimates are necessarily correct and that discrepancies are wholly due to errors in the survey data. The quality of NIPA accounts varies widely across the world and, while some items of consumption are likely to be well estimated (for example, when consumption is from imports and there is good record keeping at the border), the data on others are often no more than educated guesses (see Srinivasan, 1994). Even when this is not the case, there are often important differences in the definition of consumption between the NIPA and the household survey that, if not corrected for, can invalidate the comparisons (see, for example, Gieseman, 1987 and Branch, 1994 for evidence from the US).

Table 1: LSMS and NIPA estimates of Average Per Capita Consumption, Selected Surveys

Country	Dates	Currency	LSMS Annual Mean PCE	NIPA Annual Per Capita Consumption	Ratio LSMS/ NIPA	Sources
Bulgaria, 1995	95,5 to 95,7	Levas	50,436	90,021	.56	Authors' calculations from data on LSMS website; staff estimates
Côte d'Ivoire, 1985	85,2 to 86,1	CFA	237,853	184,935	1.29	Grootaert, 1993, p. 30; IMF 1995
Côte d'Ivoire, 1986	86,2 to 87,1	CFA	223,905	194,554	1.15	Grootaert, 1993, p. 30; IMF 1995
Côte d'Ivoire, 1987	87,3 to 88,2	CFA	216,965	190,032	1.14	Grootaert, 1993, p. 30; IMF 1995
Côte d'Ivoire, 1988	88,5 to 89,4	CFA	173,072	190,203	.91	Grootaert, 1993, p. 30; IMF 1995
Ecuador, 1994	94,6 to 94,9	Sucres	2,032,560	2,230,392	.91	Lanjouw and Lanjouw, 1996, Table 3; IMF, 1996.
Ghana, 1987	87,9 to 88,8	Cedi	56,645	45,568	1.24	Glewwe and Twum-Baah, 1991, p. 17; IMF, 1995
Guyana, 1993	93,1 to 93, 11	Guyana	91,602	53,750	1.70	World Bank, 1994a, p.7; Baker, 1996
Jamaica, 1988	88,8 to 88,9	J$	4,700	5,210	.90	World Bank, 1996, p.28
Jamaica, 1989-2	89,11 to 90,3	J$	6,304	6,568	.96	World Bank, 1996, p.28
Jamaica, 1990	90,11 to 91,4	J$	7,616	7,869	.97	World Bank, 1996, p.28
Jamaica, 1991	91,11 to 92,2	J$	10,384	11,092	.94	World Bank, 1996, p.28
Jamaica, 1992	92,8 to 93,3	J$	16,998	17,718	.96	World Bank, 1996, p.28
Jamaica, 1993	93,11 to 94,3	J$	23,408	23,684	.99	World Bank, 1996, p.28
Jamaica, 1993	94,11 to 95,1	J$	32,712	35,819	.91	World Bank, 1996, p.28
Kyrgyz, 1993	93,10 to 93,11	Som	2,273	907	2.50	World Bank, 1995a, p.60
Morocco, 1990-91	90,10 to 91,11	Dh	6,870	6,384	1.08	World Bank, 1994b, Vol II, Annex 1, Table 2
Nicaragua, 1993	93,2 to 93,6	Cordobas	4,079	2,312	1.76	World Bank, 1995b, Vol II, p.46; IMF, 1996
Pakistan, 1991	91,1 to 91,12	Rupees	6,835	6,037	1.13	Lanjouw and Lanjouw, 1996, Table 4; IMF, 1995
Peru, 1985	85,7 to 86,7	Intis	4,616	6,359	.73	Glewwe, 1987, p. 9; IMF, 1995

Table 1 (Continued)

Peru, 1991	91,10 to 91,11	New soles	750	1,178	.64	Webb and Baca, 1993, p.266; IMF, 1995
Peru, 1994	94,7 to 94,8	New soles	2,190	3,539	.62	Authors' calculations from data on LSMS website, 1996; IMF, 1996
Romania, 1995	93,4 to 94,12	Lei	1,126,558	1,348,055	.84	World Bank, 1987, Annex 1, Table 4; National Commission for Statistics.
Russia, 1993	93,10 to 94,2	Rubles	1,071,312	497,512	2.15	Foley, 1996; IMF, 1996
Tanzania, 1992/93	92,9 to 93,11	Schillings	129,708	37,718	3.44	World Bank, 1995c, p. 30
Venezuela, 1992	92,1 to 92,12	Bolivares	69,684	142,104	.49	Scott, 1994, p.15; IMF, 1995

Note: Adjustments were made for inflation as follows. If the country has less than 15 percent inflation, and the survey period covered the whole year, no adjustment was made. If the country has less than 15 percent inflation and the survey period covered only part of the year, the survey figures were adjusted to correspond to midyear prices. If the country had greater than 15 percent inflation, the monthly CPI was used to adjust the NIPA numbers to the month for which the survey's data are priced.

Table 1 presents a number of LSMS survey estimates together with their NIPA equivalents. (As far as the authors of this chapter are aware, LSMS survey data were not used to construct any of these national accounts.) However, this comparison should not be taken too seriously for two reasons. First, no detailed investigation of NIPA practices for the countries in the table has been undertaken, so there is no rigorous information about the accuracy of their estimates. Second, the survey numbers were taken from the various survey reports rather than the original microeconomic data, which would have been prohibitively expensive. As a result, there may be some incomparabilities in their calculation.

The table shows average per capita consumption for 6 LSMS surveys. The ratio of the LSMS to the NIPA estimate has a median of .96. Though these summary measures indicate an impressive consistency between the survey and NIPA estimates, there are large discrepancies for some countries and years. Nevertheless, the survey estimates provide no evidence of the general understatement of expenditures, which defies the common belief among survey experts and differs from substantial literature demonstrating that the understatement of expenditures is the major problem with consumer expenditure surveys in industrialized countries**.**

Looking at some of the cases with large discrepancies between the household survey data and the NIPA estimates illustrates the difficulties involved in making comparisons between these surveys. Several of the countries surveyed were undergoing major economic changes at the time. For example, when the Kyrgyz survey was carried out in October 1993, the *som* had been introduced as a national currency just five months before. While the ruble had lost its status as legal tender in the Kyrgyz Republic, it was still used in the Republic's neighboring countries with which it had substantial formal and informal trading relationships. In this rather chaotic situation, inflation rose to 772 percent per annum, and the dollar became something of a *de facto* unit of account -- sometimes the unit of transaction for large purchases or purchases of imports and also the most reliable store of value. The planners of the Kyrgyz survey had been considerably perplexed about whether to use the *som*, the ruble, or the dollar as the survey's unit of account and about what would constitute reasonable recall periods, especially for non-food items. The same changes that were complicating surveying were also complicating national accounting in the Kyrgyz Republic. The national statistical office had just begun to calculate the international NIPA numbers rather than the Gross Social Product numbers that used to be calculated in the Soviet Union. With such complications in the measurement of both numbers, it is not surprising, nor even particularly alarming, that the survey data are not very close to the NIPA calculations for the Kyrgyz Republic. Similar, though somewhat less dramatic, issues plague the comparison for Russia, Romania, and Bulgaria, which also have very high discrepancies between the LSMS and the NIPA estimates.

An anecdote about Guyana further illustrates the problems of comparing household survey data and NIPA estimates. When the first tabulations were becoming available from the

survey,[1] they yielded a mean per capita expenditure that was about twice that estimated in the official NIPA. This caused some consternation among the team working on the survey analysis. However, within hours, they discovered that there was a concurrent effort being made to adjust the NIPA for various flaws and biases. The new estimate for NIPA was within $30 per capita of the survey data (van der Gaag, 1994).

The teams working on the surveys in both Tanzania and Nicaragua likewise noticed that the estimates of consumption from these respective surveys were much higher than those in the national accounts. However, they were not disturbed by this, given the fact that the national accounts in those countries had a reputation for being inaccurate (Tsoflias, 1996 and Scott, 1997).

As can be seen in Table 1**,** the survey estimates for Venezuela are lower than the NIPA estimates. However, in this case, it appears to be the survey that is wrong. A very short list of consumption items was used in the Venezuelan survey, and, as a result, consumption was probably underestimated (see Part II below). On the other hand, why the Peruvian surveys substantially underestimate consumption compared to the NIPA is a puzzle, although it may have been that the recall periods that were used were too long given prevailing rates of inflation. Yet the sample for the 1991 LSMS survey in Peru omitted some sizable rural areas, which means that the survey estimate should be higher, rather than lower, than the NIPA estimate.

Part II: The Data Requirements of a Consumption Survey and How to Meet Them

Part II discusses the data needed to obtain a consumption-based measure of living standards as well as to analyze the other policy and research issues that were outlined in Part I. To the extent that it focuses on the main purpose of this chapter -- the measurement of a single aggregate for consumption -- this discussion is driven less by *what* to measure than by *how* to measure it. In this respect, this chapter differs from many of the other chapters in this book. This section discusses conceptual issues, the measurement of prices, and the design issues that have loomed large in analyses of LSMS data and in the previous literature. Thereafter, the section presents the current best practice on each of the issues, sometimes based on the literature on consumption but also on some of the LSMS experience, and results from special experimental surveys that were specifically conducted to study some of the points discussed here.

This task has been a difficult one, and there are several important issues on which there is little to report. Even for consumer expenditure surveys in industrialized countries, which have been extensively documented and where there has been a good deal of experimentation, the literature has not produced a satisfactory synthesis between theory and practice. The literature itself is difficult to find and is scattered across various disciplines, including economics, marketing, psychology, sociology, and statistics. Much of it is contained in poorly catalogued

[1] In Guyana, the "LSMS" survey consisted of the union of two surveys. A traditional income and consumption survey was carried out with a full year's sample. Interviewers then revisited one quarter's sample households to administer the Survey of Living Conditions, which consisted of modules on health, education, and anthropometrics. When the two data sets were merged, the number of topics that were covered was close to the number that have been covered in most previous LSMS surveys, although the amount of detail varied greatly among the topics.

government reports and conference proceedings rather than in academic journals. Even so, there has been a good deal of recent progress in understanding how to measure consumption, particularly from interactions between survey statisticians and cognitive psychologists. There are now several topics that are reasonably well understood by analysts and where conclusions can be extrapolated from previous experience with some confidence (see in particular Sudman et al, 1996 and the volume edited by Biemer et al, 1991). The discussion presented here will draw on this work.

Even so, it should be kept in mind that there are many design issues where there is evidence of problems but little understanding of their causes nor of solid recommendations for solutions. As Sudman et al (1996) point out, "The theoretical basis of interviewing is still less rigorously developed than the theoretical basis of sampling," so that the wording and design of questionnaires has largely remained an art that is governed by in-house tradition and personal experience. In his useful discussion of the sources of measurement error in expenditure surveys, Neter (1970) gives the following typology of (non-sampling) errors that remains relevant today (and whose applicability goes well beyond consumption data): (i) recall errors associated with the fading of people's memories; (ii) the "telescoping" of reported events by incorrect dating; (iii) reporting errors associated with respondents being overwhelmed either by the length of the survey or by the number of items covered; (iv) "prestige" errors, in other words, misreporting due to various social pressures; (v) conditioning effects from being in the survey; (vi) respondent effects where the identity of the respondent affects the answers that they give; (vii) interviewer effects; and (viii) effects associated with the design of the instrument. Another non-sampling error that could be added to this list is biases in the data due to non-responses or to the use of an inadequate sampling frame. All of these issues have been extensively discussed in the subsequent literature, but for only (i) and (ii) are the causes and treatments reasonably well understood 30 years later.

The literature on expenditure surveys in developing countries is even thinner. While findings from rich countries often carry over to the poor countries, there are always reasons to be cautious. For example, response rates in LSMS surveys are very high, nearly always higher than 80 percent and often closer to 100 percent. This compares with 85 percent in the US Consumer Expenditure Survey, about 70 percent for the British Family Expenditure Survey, and typically lower figures for surveys in much of western Europe. As a result, if the difficulty of surveying wealthy households is one factor that causes average consumption to be understated in industrialized countries, then there is likely to be less underestimation from surveys in poor countries. While the high response rates are good in themselves, they may (or may not) also indicate high levels of attention and cooperation among those who choose to respond, for example, in terms of tolerating long questionnaires or being prepared to take more time to try to remember the information that they are being asked to provide.

The LSMS program of surveys itself has made little contribution to the methodology of measuring consumption. Systematic experiments have been conducted only recently and are still largely not written up in places that are easily available to the community of survey researchers. The emphasis on collecting data rather than on furthering methodology is, perhaps, inevitable given that the countries and country departments within the World Bank that fund the surveys are more interested in increasing their understanding of development policies than in increasing

survey know-how. Nonetheless, it is lamentable that the LSMS program has not done more in this area and desirable that it should do more. Good survey practice should include the continual evaluation of methods, just as good social policymaking includes evaluating the impact of government programs. In not supporting investigations into survey methodology more strongly, the LSMS program has been remiss.

Even within its focus principally on data production, there are four areas in which the LSMS could make useful contributions to survey methodology. First, it would be helpful and not too costly for the LSMS survey teams to produce fuller documentation of their pre-tests of questionnaires, including the different options that were tested, the process and lessons of the field test, and the reasons for making the various choices that were made about the questionnaire. A great deal is learned in this process and never made systematically available to others. The record might include taping of interviews and debriefing of respondents about the interviews. Second, doing a more rigorous job of collecting and disseminating metadata on the process of interviewing (as described in Chapter 6 on metadata) will enable analysts to do more systematic studies of approaches, costs, and quality. Third, the controlled experiments with alternative modules that were set up or analyzed as part of the background research for this chapter paid off, and more of these should be done. These will be particularly appropriate in those countries where the new survey will use a different consumption module than has been used in past surveys. In these cases, the experiments would not only increase knowledge about how to measure consumption but would allow the host country to make adjustments in comparisons between its older surveys and the new one, so that the differences in results due to differences in method are identified. Fourth, although the consumption modules used in most surveys are increasingly standard, there is much to be learned from talking through design issues in "cognitive laboratories" in survey organizations (see Sudman et al, 1996). In these sessions, potential respondents are brought into a laboratory, asked sample questions, and then debriefed on how they interpreted the questions, and on how they went about answering them. The results of these sessions are then used to modify the questions in the module as necessary. Sudman et al (1996) wrote "In questionnaire design, we strongly recommend the use of think-aloud interviews for determining what respondents think the questions mean and how they retrieve information to form a judgment."

What Consumption Data are Needed?

The measure of living standards that analysts wish to construct is a real value of total household consumption on a per capita or per equivalent basis. Thus, they need to have available information on three things: (i) consumption; (ii) household size (and, for the equivalence scales, the age and sex of the household members); and (iii) prices. Data on item (ii) can be gathered in the household roster (see Chapter 7),while items (i) and (iii) are discussed here.

A measure of total household consumption is built up from several components. First, it is necessary to add up all reported expenditures on individual goods and services or on groups of goods and services (for a fuller discussion, see Deaton and Zaidi, forthcoming). Then a value for consumption that does not go through the market must be added in (in other words, consumption out of home production or in kind received from employers). In those countries where households hold significant stocks or inventories of goods and, particularly, of expensive durable

goods, it is necessary to correct for the difference between consumption and expenditures. Then the estimates must be converted to real terms by adjusting them by a price index to account for differences in prices among different regions or interview dates. It is important to note that this accounting should be done *after* the data are collected because it is neither necessary nor advisable for the respondent to understand the economic concept of consumption (nor of income.) The questionnaire should be designed around items that are familiar to the respondent -- typically cash flows or flows of goods -- provided that enough information is gathered to allow total consumption to be calculated. However, consumption questionnaires often collect additional data on cash flows that are not part of the economist's definition of consumption -- for example, taxes, contributions to savings accounts, or loan repayments -- but that are of interest in themselves and that the respondent sees as outlays of cash similar to purchases of goods.

To be a good measure of welfare, the consumption concept must be *comprehensive*. All goods and services that contribute to people's standard of living need to be included in the measure, which can be thought of as a practical approximation to an indirect utility function or money metric measure of welfare. While it is often tempting -- and economical -- to collect data on only a subset of consumption (sometimes even a single good or group of goods, such as housing or food), the relationship between the part and the whole can vary a great deal from one household to another and from one place or time to another, so that rankings or living standards by the shortcut measure may not be universally valid. A good example comes from the spatial differences in relative prices that cause people to substitute cheaper goods for relatively more expensive goods. Poor urban dwellers must often live in poor housing in order to have access to income-earning opportunities in the city, but the standard of their housing will understate their overall standard of living.

As will be seen in the following sections of this chapter, there is not a clearly "right" or "wrong" way of doing things for many issues about how to measure consumption. Rather, there is a range of good practice techniques and not enough empirical evidence about which is best. However, it is true that the estimates of consumption are sensitive (sometimes only slightly, sometimes markedly) to which method is used to reach the estimate. In addition, survey designers will often wish to ensure that the new survey data are comparable with previous survey data in that country, which is a powerful argument in favor of whatever method was used in all (or most) of those previous surveys. However, this may sometimes conflict not only with the interests of accuracy and best practice but also with standards that would permit comparing the survey data with equivalent data from other countries. Comparability over time within a country is most useful for monitoring poverty, which often takes precedence over other considerations. International agencies and researchers value international comparability, and, because they are often the sources of funds or technical assistance for surveys in developing countries, this consideration is often influential. Even so, the past survey practices in a given country may be far from sensible or standard, in which case, when a new survey is planned, it would be better to be the first in a new series of consistent and potentially comparable surveys than to replicate its previous method of measuring consumption. At the very least, it would be worth conducting experiments to test whether the previous surveys actually collected the data that they purported to collect. Comparability of nonsense is no great virtue.

For measuring welfare, *consumption* is ultimately a more useful measure than

expenditures (purchases). For most, although not all, non-durable goods, it is safe to assume that a person's or household's consumption is closely tied to their purchases. A kilo of tortillas or a bunch of bananas must be consumed soon after they are purchased, so expenditure and consumption will approximate each other for specific goods over a short period. Even for less perishable commodities, some averaging may occur across goods in a fairly short period of time. A person may buy a pound of coffee one week and consume it over a month, but the next week he or she may purchase a pound of sugar that will, likewise, last for a while, and the next week he or she may purchase a bag of flour and so on.

However, in the case of major durable goods, expenditures and consumption are not closely related in the short run and household *expenditures* on durable goods will be a poor guide to their *consumption* of durable goods. (In some cases, where grains can be stored for substantial periods of time, the same may be true for goods that are not conventionally classed as durable. Rice or dried pasta may be stored for a long period of time and, thus, their consumption and the expenditures made to purchase them may deviate a good deal). For major durable goods (and in some cases for stocks of grain or of fuel), consumption should be linked to stocks not purchases, so that the sub-module that deals with durable goods needs to collect data on a list of durable goods possessed by the household. From these, some sort of consumption flow needs to be imputed. To do this sensibly, analysts need to have information on the age of the good and on its original (and perhaps current) value or, in the case of housing where there is no adequate rental market, on any characteristics of the good that can be used to impute its rental value. Of course, such imputation is at best a hazardous undertaking in countries where there are few rental units to judge by, and the quality of the resulting data may not be worth the effort put into collecting them. Great care must also be taken to avoid erroneous interpretations of the results in cases where such imputations have an important effect on the total consumption measure or on the welfare rankings of households. If there is no rental market and possibly only a limited housing market, an imputed rental value may overstate the value of the housing to its inhabitants. Particularly in an emergency, it may be hard if not impossible for them to turn this imputed value into urgently needed cash. It is unwise to let policy decisions rest on often arbitrary and contentious imputations.

The policy issues discussed in Part I can mostly be analyzed with data that are the by-product of the need to construct of an estimate of total household expenditure. There are, however, some exceptions where more data will need to be collected to allow analysis of a policy issue.

First, the decision about the level of disaggregation at which to collect the data must be guided by the needs of analyst to have data on specific items of expenditure. For example, they might wish to have data on goods of particular nutritional significance, such as rice or milk. Likewise, when different goods are taxed or subsidized at different rates and analysts want to use the survey data to investigate tax reform, then the different goods must be distinguishable from each other. If flour is subsidized in the country where the survey is to be fielded, then it would be a good idea to include a separate question on the consumption of flour rather than including it in a broader question about "staples" or "flour, rice, and cornmeal." Where analysts are concerned with the relationship between consumption and the environment, it would be necessary to distinguish consumption items that were gathered or hunted from consumption items that were

grown at home or bought in the market.

Second, analysts may wish to collect data that are disaggregated in a manner that will yield information about intrahousehold allocations, even if such disaggregation is not required to estimate the total of all expenditures. Items that are exclusively consumed by different groups are an obvious example (for example, collecting data on men's and women's clothing and footwear separately from data on children's clothing, rather than having a single item for clothing). It is also possible to include questions about who consumed what, at least for some goods. Tobacco and alcohol are individually, not jointly, consumed, and it is probably possible to obtain reasonable estimates of the individual-level consumption of these products. Other examples of goods that are consumed individually are tickets for entertainment and for transportation. One difficulty is that these may be the items for which the household member who is the best-informed respondent for the household overall gives the worst answers. For example, the homemaker may know a lot about the household's food consumption but relatively little about the expenditures on alcohol, tobacco, or entertainment by individual members. This problem can be dealt with by conducting individual interviews on consumption of some goods, a feasible but costly solution.

Third, some of the research topics -- such as the calculation of calorie availability or the estimation of price elasticities -- ideally require data on *quantities* of individual items at the household level, whereas the welfare measure makes do with expenditures, deflating when necessary by a price index. The issue of quantities will be addressed in the next subsection.

Collecting Price Data

The conversion of money values to real expenditures requires the construction of a price index, for which price information must be available. This price information must capture not only temporal variations in prices but must also accurately represent the price level faced by each of the households in the survey sample. In some countries, adequate price indices may already be available, but this is rare, because many price surveys exclude rural areas. Urban prices are only useful for nationwide analysis when spatial price variation is limited, for example, where there is a good transportation network and markets are well integrated (although even in this case there may be marked regional variations in the costs of housing).

When there is no other adequate information on prices, the data must be collected in the household survey. This may be done at the household level or at the community level. At the household level, the survey may be designed to ask each household how much they paid for each unit of an item that they purchased or about the quantity of the good that they purchased as well as their total expenditures on the good. When households report physical quantities (such as kilos, sacks, or numbers), it is then possible to divide their reported expenditure by the reported quantity to yield a price -- or more precisely a unit value -- for each good, and these can be weighted together to give household-specific price indexes.

In the case of most previous LSMS surveys, the designers have opted for collecting data from local markets in a price questionnaire at the community level, with few LSMS surveys having collected information on quantities from households. However, many other surveys

around the world do collect information on quantities, including the Indian NSS, the Pakistan Household Income and Expenditure Surveys, and the Indonesian SUSENAS surveys. While the LSMS survey in Viet Nam did collect price data in local markets, it also collected quantity data at the household level, as did the Brazilian, Ecuadorian, Nicaraguan, Kyrgyz, and Russian surveys. The LSMS surveys in Pakistan, Bulgaria, and Ecuador included questions about expenditures per unit. Apart from the Pakistan case where the unit cost data had serious problems (probably for local reasons, almost certainly inadequate interviewer training), there appears to have been no systematic evaluation of this particular option so far.

There are several advantages to collecting data on prices by asking household respondents about both their expenditures on and the quantities of their purchases. This procedure yields measures of physical quantities that are useful in their own right, for example, for computing calorie availability or for estimating the elasticity of quantities to changes in taxes or subsidies. It also yields the raw material for a price index for each household, without requiring assumptions about where the household buys its good. A price index constructed in this way, however, covers only those goods (typically but not exclusively foods) for which quantity data can be well-defined in the questionnaire. Such price indexes are automatically tailored to the consumption patterns of the households in the survey, so there is no discrepancy between the price data and the goods that people buy. Having data on prices for individual goods at the household level is also useful for analyzing demand patterns and policy issues, such as price reform, that depend on the results of demand analysis. One of the authors of this chapter has satisfactorily matched household data on unit costs from the Indian NSS to the prices that the Government of India regularly collects from local markets around the country, at least in cases where the local markets are located near the survey households. Not only do these data match across districts, but the unit values from the survey reflect the appropriate seasonal patterns of agricultural prices (see Chapter 5 in Deaton, 1997).

There are also disadvantages to collecting data on prices in this way. Unit values are not prices, and they even vary among households that purchase from the same sources, because better-off households typically buy higher qualities, even of fairly narrowly defined commodities like rice or sorghum, let alone for more broadly defined commodities such as meat. This problem can be dealt with, for example, by averaging the unit values over all of the households in a primary sampling unit (PSU), and the Indian evidence quoted above suggests that the averaged unit values are not likely to be misleading as indicators of price. A more serious problem is that, with a few exceptions such as fuels, it is not easy to define physical units for goods other than foods. Gathering data on the price of food may be enough, particularly in very poor economies where food consists of two-thirds or three-quarters of the budget of most households, but this is clearly not true in general. In many past LSMS surveys, even the definition of physical units of some food items was unclear or subject to error. For example, the respondents may have been unclear whether to report the price that they paid per egg or the price that they paid for a dozen eggs. Moreover, goods are often sold locally in amounts or units that are often not very precise and, thus, can be hard to interpret at the analytical stage; for example, a “bunch” (or any other unit) of “vegetables” is much less clearly defined than a kilogram of rice.

LSMS surveys have had less difficulty in defining useful units for consumption than for production, where respondents often cannot provide any precise quantities (“I sold three “sheets”

of this and five “baskets” of that"). Since most of these difficulties were experienced in Africa and since the successful quantity experiences of statistical offices cited are largely Asian (though there is also positive experience in Latin American and in countries of the former Soviet Union), there may be a “continent effect” here, perhaps reflecting the degree to which the economy is monetized or to which non-standard prices or units prevail.

The alternative to collecting prices from households is to collect prices at the community level at village and local markets in the PSU. This option is cheaper, because prices are collected only for each PSU, not for each household. It also has the advantage that, in principle, the prices in the market are the prices that consumers actually face, not the unit values that they choose to purchase. The fact that observed prices are the same for everyone in the PSU is thus an advantage, not a disadvantage. Because most countries have some sort of regular method for collecting data on consumer prices and aggregating them into a price index, at least in urban areas, the survey designers may be able to make use of or at least adapt these well-established procedures.

However, there are also problems in collecting data on prices at the community level. First, common sense suggests that, in some circumstances, it is difficult for a survey team to replicate the sort of transactions that are engaged in by locals; haggling is often an important factor in defining the prices actually paid by local consumers, which may mean that the prices that vendors quote to survey enumerators may be different from those actually paid by long-standing or regular customers.

Second, the price questionnaire can only collect prices on items that are available in the local markets, which may exclude many non-food items as well as those food items only consumed seasonally or regionally rather than nationwide. To solve this problem as well as the problem of defining a suitable unit, the survey may be biased in favor of manufactured or processed items that can easily be defined such as a can of standard-brand tomato paste, a two-gallon plastic bucket, or a two- pound packet of sugar from the national refinery. Some of the problems here are more than procedural. In countries where consumption patterns differ radically across *regions* (for example, between northern and southern areas of India), there are serious conceptual difficulties in defining price indexes that are as bad as those involved in comparing prices across *countries.*

Third, in some (but not all) countries, it can be hard to know what is meant by a “local market.” The image of a PSU as an isolated rural village with a single market is an appealing one, but it is not accurate in all parts of the world. In urban areas, people may buy goods far away from where they live, although the obvious solution to this problem would be to use the urban price indices that are often available and that are sometimes of acceptable quality. However, even in rural areas, PSUs are defined by statistical and often ultimately administrative criteria that may not accurately represent actual villages or village markets. So there is no guarantee that the prices in any given local market are the relevant prices actually faced by the households in the survey. This problem can be exacerbated when there are several different types of outlet in a given community (such as markets, corner stores, supermarkets, and government ration shops selling subsidized products), all with different prices and clienteles.

Fourth, at least in a few LSMS surveys in the past, the procedures for entering data from the community questionnaire into the computer were not well enough established, and the data from many questionnaires or (in extreme cases) the whole community survey were lost to analysts. The recommendations in the new LSMS implementation manual by Grosh and Munoz (1996**)** should overcome some of the problems, but it will remain the case that community questionnaires are more novel to most survey agencies than household questionnaires and, therefore, may be managed less well. In the LSMS surveys for Pakistan (1991) and Viet Nam (1992-93), price data were collected at both the household level (on expenditures and quantities in Viet Nam and on quantities and unit values in Pakistan) and the community level, and the results for various goods compared. The comparison is clouded by the fact that, for the reasons given above, the two data collection procedures measured different things, so that it is unclear exactly how close the unit values from the household questionnaires could be expected to be to the market prices from the community questionnaires. For both countries, the two sets of estimates are similar at a sufficiently high level of aggregation; for example, there is little difference between the unit values and prices at the all-province level in Pakistan. However, in both countries' data sets, the unit values and prices differ markedly at the PSU level, comparing the estimate from the price questionnaire with the average of households in the PSU. In Viet Nam, the correlations between the reported unit values from market purchases and the directly observed market price vary from 0.77 (for noodles) and 0.76 (for pork) to -0.07 (for cassava) and -0.34 (for mangoes). For the 16 foods in the comparison, these are the only two negative correlations, and the median correlation is 0.34. The correlations are similar, if somewhat lower, for Pakistan, perhaps reflecting the problems with the unit value data.

Since any household survey will always require some estimate of price variations and since households cannot usually provide price (or unit value) data for most non-foods or even for some foods, the survey will always have to include a price (community) questionnaire of some kind. If the household questionnaire does not collect data on quantities, meaning that it will yield no unit values, then the community questionnaire must gather data on the price of food as well as of non-food items. When both approaches are available for many foods, it is unclear from these two examples or from the literature that one method has any clear advantage over the other for any given survey. Of course, duplicating the collection of some data is an insurance policy, and there has been at least one LSMS survey where respondents were (mistakenly) given the option of reporting either quantities or expenditures, so that, without the community questionnaire, it would have been difficult to construct the essential consumption expenditure aggregate for each household.

It is useful for analysts to have data on quantities for reasons other than the construction of the price indices. Thus, most surveys with objectives similar to those of an LSMS survey will want to collect data on quantities if it is feasible and economical to do so in the country in question. Thus, if previous surveys in the country have yielded good data on quantities or if it proves possible to gather data on quantities in an exploratory field test, questions about quantities should be included in the consumption module in the household questionnaires, at least for food.

Level of Disaggregation

The number of items about which data are to be collected is one of the central issues in designing the questionnaire for a consumption module. On the one hand, it is an important determinant of the cost of the consumption module, with longer modules being more costly or crowding information out of other modules of the questionnaire. On the other hand, asking about items in detail is generally assumed to yield fuller reporting and greater accuracy from the detail and detailed prompting than would the use of shorter lists of items. There have, however, been suggestions that a survey can try to gather data in too much detail. Respondents may become bored, despondent, or believe that they are being uncooperative or showing themselves to be inadequate consumers if they have nothing to report in response to a long list of questions and, thus, may invent purchases to be "helpful" or to enhance their prestige. However, there has been a validation using crop and trade data of food estimates from the Indian National Sample Survey which uses a very long list of items (Minhas, 1988 and Minhas and Kansal, 1989), and, although there is some slight evidence of overestimation for cereals (about 3 percent), this seems well within reasonable bounds.

Traditional expenditure surveys in developing countries (for example, the NSS surveys in India) use very long lists of consumption items with each food being named with great specificity, and lists of 200 to 300 items are not unknown; the Brazilian budget survey uses a list of 1300 items; LSMS surveys have been less detailed; the 33 foods and 20 non-food items listed in the Pakistan survey in 1991 and the 45 foods and 46 non-food items listed in the Viet Nam survey in 1993/94 are typical. As has already been discussed, some disaggregation is necessary to obtain information on some specific items of interest, but the precise level of disaggregation that survey designers choose for any given survey will depend on their views about the tradeoff between costs and accuracy.

There is a good deal of debate about whether short (or at least shorter than those commonly used) consumption questionnaires can save time and money and still deliver accurate estimates of total consumption, but the issue does not seem to have been settled in the literature. One set of results suggests that short lists of items will yield reasonably accurate data. A study of farm operators in the US by Reagan (1954) found that total consumption was only modestly lower -- about 10 percent overall -- for a condensed list of 15 items than for a list of over 200 items. For developing countries, Bhattacharya (1963) reported on a small-scale experiment on 44 households in two villages in West Bengal, who were presented with the usual detailed NSS questionnaire as well as with a questionnaire covering broad commodity groups, and with a single question about their total expenditure during the previous month. The consumption totals from the questionnaire with the broad groups were slightly lower than those from the detailed questionnaire but not significantly so, but the single-question method gave estimates that were 25 to 30 percent lower, although still highly correlated (0.98) with the estimates from the full NSS list. There is also some different evidence from the US Consumer Expenditure Survey where some households are asked to keep detailed product diaries of their purchases of food, while others, who are in the interview section of the survey where food is not the main focus, are asked to report their total expenditures on food at home and away from home for each of the previous three months. According to Gieseman (1987), the amount that the respondents reported that they spent on food at home was actually larger in the interview part of the survey than in the diary part of the survey and was closer to the NIPA estimate. For the estimates of the amount spent on food away from home, the diary appears to be quite accurate relative to the NIPA's estimate, but there

was substantial underestimation of this expenditure in the interview part of the survey. Even more positive results were reported by World Bank (1993) from a test survey in Indonesia. Both a short and a long questionnaire was administered to 8,000 households. In the short questionnaire, the number of food items was reduced from 218 (in the long questionnaire) to 15 and the number of non-food items from 102 (in the long questionnaire) to eight. Total measured food expenditures differed little between the questionnaires, either in terms of means or of distribution, although the long questionnaire yielded about 15 percent more non-food expenditure.

These results have not been replicated elsewhere. A similar experiment in El Salvador with 72 versus 18 food and 25 versus six non-food items gave ratios (long-to-short) of 1.27 for food and 1.40 overall (Jolliffe and Scott, 1995). A 1994 experiment in Jamaica compared modules with a total of 119 items to modules with a total of 37 items and produced similar results, with a long-to-short ratio of 1.26 for both food and non-food items (Statistical Institute and Planning Institute of Jamaica 1996, Appendix 3). In Ecuador in 1993 two versions of the sub-module on food items were piloted, one with 122 food items, the other with 72. The ratio of total food expenditures reported on the long module to those on the shorter module expenditures was 1.67 (see Steele, 1998). Although the shorter questionnaires sometimes dramatically reduce both survey costs and times compared to the longer questionnaires (for example, in West Bengal from 180 minutes to 90, and in Indonesia, from 80 minutes to ten), it seems that such savings are gained at the expense of accuracy.

However, there are alternatives to having either a long questionnaire or a short questionnaire. One alternative, which appears never to have been used in an LSMS survey, would be a hierarchical scheme in which respondents are first asked if they have purchased anything within a broad class of goods and are only asked the detailed questions about items in that class if they say they have bought a good in that class. For example, if a household responded that it had not bought any dairy items, it would not be asked specific questions about milk, yogurt, butter, and ice cream. In fact, it is likely that something like this often happens in practice when interviewers and respondents are faced with lists of several hundred items that are inevitably grouped into broad categories. This kind of approach has obvious advantages when interviewers use computers to administer questionnaires to respondents, in which case the detailed questions about each item would never come up in the interview unless the respondent first indicated that they were relevant. The obvious risk is that consumption will be underestimated if going through the list in detail prompts people to remember purchases. There is evidence from diary surveys in industrialized countries that preprinted diaries that identify more categories of consumption cause respondents to report more consumption, presumably due to this prompting effect (see Tucker, 1992 and Tucker and Bennett, 1988).

Note that there are many different ways of turning a list of several hundred items into a list of only a few dozen. The traditional procedure might be referred to as the “botanical” method, whereby cereals are grouped together, as are pulses, root vegetables, or leafy greens. Since botanically similar foods often contain similar amounts of calories per kilo, this way of aggregating the list of items ensures that analysts can calculate calorie counts when necessary. However, other criteria can be used for aggregating these items, such as where the consumer typically buys the goods and consumers may be able to remember how much they spent in

individual stores more accurately than individual goods, let alone on groups of goods. There is some evidence from an experiment in Jamaica where botanical versus "point-of-purchase" aggregates were compared, (Statistical Institute and Planning Institute of Jamaica, 1996, Appendix 3). Here there was little difference in the two sets of means, and the variances were also similar. There is also related evidence from the literature on diaries. Sudman and Ferber (1971) tested diaries that used (i) itemization by purchase, (ii) groupings by product type, and (iii) groupings by outlets, and found that respondents were more likely to agree to cooperate with the survey and maintained their diaries for longer if a product diary was used. The relevance of this evidence to LSMS interview surveys is a matter for conjecture.

Finally, there are implications for the degree of aggregation if the survey is attempting to collect data on physical quantities. Some foods, such as many cereals, can be grouped together, and a meaningful total weight devised. However, this is not the case, for example, for canned goods, for vegetables, or for many processed goods, where considerable disaggregation is required in order to obtain appropriate units.

In summary, it seems that using drastically short questionnaires is likely to be risky and to lead to the underestimation of total consumption. Although it is difficult to be more precise, 300 items are probably too many and 10 is probably too few. The draft module presented in Part III includes the approximately 70 to 100 items that have commonly been used in past LSMS surveys, on the grounds that many more items would increase costs noticeably and that the comparisons to NIPA have not shown huge, systematic biases. On the other hand, using a much smaller number of items would both increase the risk of underestimating total consumption and certainly decrease analysts' ability to calculate rough estimates of caloric content, which are sometimes used to calculate the poverty line.

Recall Period

For each consumption item in the consumption module, there must be a recall or reference period. For example, the questionnaire may ask how much rice the household purchased during the previous week, two weeks, or month or it may ask about the household's expenditure on clothing during the previous two weeks, month, or year. The recall period is sometimes tied to a particular event, most commonly the interviewer's last visit. Another option is to have respondents report how much they "usually spend" over a month or a year. While it makes obvious sense to use longer reference periods for items that are rarely purchased and whose purchase is a significant event that is easy to remember and to use short periods for high frequency purchases, this guideline still leaves a great deal still to be decided.

Introduction. The choice between recall periods is one of the most important and difficult design issues for the consumption module. It is also an issue that cannot be dealt with in isolation because it interacts with other elements of the module (such as whether expenditures are collected by diary or by interview) and with the survey's design more generally (in particular whether the design permits multiple visits at least a week apart). The ultimate objective is to obtain a reasonably accurate estimate of the rate of each household's total consumption expenditure over the previous year. There are many different ways to fulfill this aim.

One possibility is for the interviewer to make a single visit to the household during which the respondent is asked to recall how much the household spent during the previous 12 months, either in total or on a list of items. However, this is likely to lead to either an underestimation of household expenditure, because it is difficult for people to remember their expenditure from so long ago, or to educated guesses, where respondents estimate their expenditure over the whole year from their current rate of expenditure. Another alternative is for the interviewer to visit the household many times throughout the year and to ask the respondent for details of the household's expenditure over shorter periods. However, if people's memories of their expenditure fade quickly, many visits may be required to ensure that accurate data are collected on high frequency purchases, and such visits can be prohibitively costly. The diary method was designed to minimize the need to rely on respondents' memories because they are supposed to be filled out at or near the time when the purchase is made. However, diaries clearly pose special problems when a substantial fraction of the population is illiterate, problems that will be discussed more fully below.

Note that one of the special issues for LSMS surveys is the requirement that each survey provide an estimate of annual expenditures *at the household level*. Most consumption surveys do not make this demand and are content with estimating *aggregates* or *averages* over households, for example, for weights for a consumer price index. If the only problem with reporting were progressive forgetting (the fact that respondents' memories of their expenditures fade as the time since the purchase grows longer) and if there were no other systematic biases (but there are, as will be discussed below), averages could be obtained accurately with short reporting periods. However, this will not do for measuring welfare at the level of the individual household. Longer recall periods are better than shorter ones for measuring the distribution of consumption because averaging consumption over many days eliminates the randomness of some of the household's day-to-day purchases that have nothing to do with its standard of living. However, if people find it harder to remember more distant events, longer recall periods will miss more consumption, and lead to downward bias. If short recall periods are used, and if people report accurately, not everyone will purchase every item every day or every week, because many goods can be stored, because many goods that the household consumes regularly do not have to be consumed every day, and because some items of consumption have seasonal patterns. Provided that the survey's fieldwork is spread throughout the year and provided that the respondents' reports are accurate, short reference periods will yield unbiased estimates of the mean for the population. Those households that do not purchase anything during the reference period will be averaged with those who happen to make purchases for several periods, or those interviewed about their consumption during a festival are averaged with those interviewed about non-festival consumption. However, such data (for periods when some households spend nothing while others spend a lot) do not give an adequate picture of the annual consumption of individual households nor of the distribution of consumption across households.

Whenever the recall period used in the consumption module is shorter than the period over which living standards are defined in analysis *and even given perfect recall*, the data will include variance that does not reflect the true distribution of living standards. All the standard measures of inequality have the property that they are increased by adding variance -- effectively a "mean-preserving" increase in spread" -- so that inequality will be exaggerated by the measurement error, and, provided the poverty line is below the mode of the distribution,

estimates of poverty will also be exaggerated. In the extreme case, a single day could be used as the recall period to eliminate bias in the mean, with the consequence that anyone who did not go shopping the previous day would be classified as poor. Since the LSMS surveys are as much or more concerned with the dispersion of households across the distribution than with means, single-visit consumption modules with very short recall periods should be avoided, except when purchases are known to be evenly spread or when there is rapid inflation, which will itself cause people to make frequent, regular purchases. This is not to say that short recall periods and multiple visits can never work well; for example, several African expenditure surveys use a daily recall period coupled with seven daily visits, and this kind of design is used in conjunction with diaries in consumer expenditure surveys in Singapore (see Silberstein and Scott 1991).

The difficulties that can arise with recall periods that are too short are not confined to the estimation of poverty and inequality. If the recall periods for reporting consumption are shorter than the period over which living standards are defined in the analysis, the measurement error in each individual expenditure will be transmitted into the total expenditure estimate, which is the sum of all of the individual expenditures. As a result, there will be a (non-standard) measurement error bias in the estimation of Engel curves, including calorie Engel curves (see Cramer, 1969 and Bouis and Haddad, 1992). If this is not corrected for, estimated Engel elasticities will vary with the length of the recall period (see Ghose and Bhattacharya, 1993 and 1995 for evidence from India).

Theory and Evidence in the Literature. It is a well-known phenomenon that people forget events as they recede into the past. There has been experimental evidence for more than a century on "forgetting curves" that plot the degree of memory errors against the length of the period over which people are trying to remember. People do not forget all events at the same rate, and they can remember some "flashbulb" events (for example, the death of President Kennedy in the US) in great detail for many years. Purchases of consumer goods are no exception to these rules, and there is a large body of evidence in industrialized countries on "recall bias" or increasing underestimation as the recall period is increased. For reviews and general discussions, see Neter (1970), Eisenhower et al (1991), Silberstein and Scott (1991), and Sudman et al (1996). Some of the cited evidence comes from developing countries, for example, Mahalanobis and Sen (1954) and Ghosh (1953). Most relevant to our current concerns, is the study by Scott and Amenuvegbe (1990) who ran experiments with households from the Ghanaian Living Standards Survey, which showed that, for 13 items that were frequently purchased by these households, reported expenditures fell at an average of 2.9 percent for every *day* that was added to the recall period up to a week, so, for a seven-day recall, expenditures were 87 percent of what they were for a single day. A two-week recall period yielded a total that was 5 percentage points lower than that yielded by a one-week period. Annual recall based on explicitly normative questions ("How much do you usually spend on xx?") gave a total 91 percent of that of the one-day recall, while annual recall based on ostensibly factual questions ("How much did you spend on xx?") gave a total 113 percent of the one-day recall figure.

Progressive forgetting is only one of the tricks that memory plays. There is a second kind of important bias that affects expenditure estimates. This is "telescoping" whereby respondents include in their reports events that happened earlier than the limit of the recall period. Asked about their expenditures during the previous year, respondents may include a car that was bought

13 months ago (see Neter and Waksburg, 1964 who identified such effects in the US Consumer Expenditure Survey for home-owners' alterations and repairs). This effect is closely related to the "boundary effect" identified in crop surveys in Bengal by Mahalanobis (1946) where neighboring farmers each included their common boundary in reporting estimates of their crop acreage. Telescoping has been formally modeled by Rubin and Baddeley (1989) and by Bradburn, Huttenlocher, and Hedges (1994). According to these models, people do not remember dates very well, so, even though they may remember the event (or expenditure), they may be unsure about the date of the event. If uncertainty about dates increases as the event recedes, such telescoping errors will cause a net upward bias in the resulting data. The further in the past the event is, the larger will be the uncertainty about its date, and thus the probability that it will be misplaced into the "present" is higher than the probability that a "present" event will be misplaced into the "past." Moreover, by definition, "present" events cannot be misplaced into a time that is "future" relative to the interview date, so that on average, there is greater intrusion of past events into the reference period than there is loss of relevant events out of it.

The fact that people increasingly forget events as they recede into the past can explain why people remember and report items that they purchase frequently (such as food) less as the recall period increases and why telescoping can cause some upward bias in the data on expenditures in large or important items that people remember purchasing but do not remember when they did so. Short recall periods are likely to lead to the overstatement of purchases of those items that are subject to both telescoping and recall bias, with telescoping dominating. On the other hand, as the recall period is lengthened, recall bias will become more prevalent, which will result in a downward bias (see Eisenhower et al, 1991). These effects will work differently for different goods, with purchases that are highly salient to the respondent, such as purchases of durable goods, expenses for wedding or funerals, or for stocking up on grain for the year being more subject to telescoping and with high frequency smaller purchases on such items as food and household supplies being more likely to be forgotten. Only those purchases that people remember making can be telescoped.

Neter and Waksberg (1964) proposed a procedure for dealing with telescoping that appears to be reasonably effective. This is the method of "bounded recall," whereby a preliminary interview is conducted in which respondents are asked about the household's expenditures in (say) the previous month. These data are not be used because they are subject to telescoping bias, but are nevertheless important because the process of noting them will provide a record that prevents their being reported again in the first "real" interview and thus eliminates telescoping. In the second interview, which is the first to yield usable data, respondents are asked about their purchases since the first interview. Note that this option is only possible when the interviewer makes at least two well-separated visits to the household. Recall bias is harder to deal with, although, if respondents are capable and willing to keep an accurate diary, it becomes unnecessary to rely on their memories, in which case both recall bias and telescoping are eliminated.

Cognitive psychology and questionnaire "think aloud" interviews are yielding insights into how people answer questions. It seems that, as long as the interview is well-conducted, respondents typically do the best they can to answer to provide accurate and truthful answers. At the same time, they try to minimize the effort they have to make to respond to the interviewer's

questions, thus acting as "cognitive misers." As a result, they may switch their tactics for answering expenditure questions as the difficulty of the task increases. Over short recall periods or for rare but important events in their lives, their answers are based on counting; they recollect individual events and then add them up. Over long periods, or for unimportant events that happen frequently, or for aggregates containing large numbers of items, they resort to more approximate ways of estimating their answer by estimating the frequency of the occurrence in question and then multiplying this number by the length of the reference period. The frequency that they choose may or may not be accurate and may, for example, be overweighted towards their current or recent behavior, with the respondent ignoring or giving inadequate weight to exceptional events. Sudman et al (1996) stated that their "tentative finding is that estimation is unbiased but counting methods, although reducing variance, may be biased either up, for short time periods, or down, for long periods." In this sense, respondents' estimation strategies can be thought of as an alternative to diaries as a means of dealing with recall and telescoping biases. Indeed, there is some evidence from consumer expenditure surveys in Canada (McWhinney and Champion, 1974) that diaries and interviews with *annual* recall periods gave closely similar results.

It is worth recording how one survey, the US Consumer Expenditure Survey (CEX), has changed its design to accommodate the findings in the literature (see Jacobs and Shipp, 1993). Although the CEX is fielded in an industrialized country rather than a developing one and although its primary function is to collect weights for the price index rather than to monitor welfare, it collects detailed and aggregated consumption measures, and its experience is relevant to designers of LSMS surveys. The CEX is a survey that could be seen by an ambitious statistical office in a developing country as a model to emulate and there is good documentation on its experience with telescoping, recall bias, seasonality, and the advantages and disadvantages of diaries compared to interviews. While it is wise to be cautious about generalizing to other countries, all of this experience is relevant for LSMS designers.

In the earliest CEX surveys up to the 1960–61, expenditures were obtained by interview with an annual recall period. An interesting feature of this methodology was a "balancing" procedure whereby, if a household's reported expenditures and reported income differed by more than a pre-specified limit, the household was revisited for cross-checks. However, in the decade before the next survey in 1972–73 came the work on telescoping by Neter and Waksburg (1964), as well as the influential experiments on diaries and interviews by Sudman and Ferber (1971). The annual recall was abandoned, as was the "balancing" procedure, which was considered arbitrary and unworkable in the absence of an annual recall period. It is worth noting that the available literature does not provide any evidence that the annual recall procedures were unsatisfactory or that the balancing procedure failed to work, only that such techniques had been superseded.

In the current design, which was introduced in 1980, one set of households keep diaries that cover their expenditures on food and minor household items (mostly grocery items), while a different set of households is interviewed on five separate occasions. The data from the first interview, to which a recall period of the previous month applies, are used to eliminate telescoping bias, and are discarded. At each of four subsequent quarterly interviews, households are asked to recall their expenditures in each of the previous three months. The evidence from these surveys is entirely consistent with previous evidence about the significance of telescoping

bias. According to Silberstein (1990), the discarded rates of expenditure from the first interviews are much higher than those at the subsequent interviews; for clothing, the totals are 40 percent higher than the average of the subsequent four interviews. However, there is also "internal" telescoping or recall bias in the data from the subsequent interviews, with respondents consistently reporting higher expenditures in the most recent (third) month than in the earlier (first two, and furthest back) months in the three-month reports. There are also pronounced seasonal effects in the reported expenditures in the CEX**,** especially associated with the year-end holidays (Silberstein and Scott, 1992). The US Bureau of Labor statistics doubles the size of the sample over the holiday period to deal with these and other (largely non-response) effects, although the effectiveness of this measure is in some doubt.

Experience from Past LSMS Surveys. Past LSMS surveys have used a range of recall periods for consumption items, depending on the item and on the survey. For example, for food purchases, the on-going Jamaican survey uses a seven-day and a 30-day recall periods. In South Africa, respondents were asked whether they bought each food item on a weekly basis or a monthly basis and were then asked to report their purchases during the last such period. The survey in Ecuador took a similar approach in that the respondent chose the recall period. In the Kyrgyz Republic, Nicaragua, and Russian surveys, the recall period was one week, in Brazil, it was two weeks, and in China (the Hebei and Liaiong provinces only), it was specified simply as "1994." In many surveys, non-food items have often been separated into high frequency or "daily" categories, for which the recall period is shorter (a week or two) than it is for "occasional" items, which have tended to be given monthly, quarterly, six monthly, or annual recall periods. For non-food items, some surveys have had two recall periods, the Jamaica survey uses a month and a year, and other surveys have sorted different items into different single recall periods. For example, expenditures on soap may be reported on a monthly basis, clothing on quarterly basis, and vacations on an annual basis. In spite of this variation, there is one design that is frequently thought of as an LSMS standard, partly because it is not used widely in other surveys and partly because it was used in several of the earliest and most widely analyzed LSMS surveys. In this protocol, food expenditures are collected in a two-stage process. Respondents are asked whether the household has consumed a particular food item during the last year. Those who answer in the affirmative are then asked a series of follow-up questions. First, the respondent is asked whether the household purchased any of the foodstuffs on the list and, if the answer is yes, a further question about the value of any purchases that they made since the interviewer's last visit (which in the prototypical fieldwork plan for LSMS surveys is 14 days). Second, the respondent is asked in how many months of the year the household purchased the food item, how often it purchased the item in each of those months, and how much it usually spent each time. Data on the value of home-produced food is collected in a separate set of questions that ask how often the home-produced food is consumed with a recall period that has varied from country to country in previous surveys ranging from "each time the home-produced food is consumed" to each day to a typical month.

This design makes it possible to compute two different estimates of the monthly rate of expenditure for each food item. The "last-visit" measure would be zero if no purchases were reported; otherwise it would be the amount reported since the last visit divided by the number of days since the last visit and multiplied by the number of days in an average month (365 over 12). The "usual month" measure would be zero if nothing were purchased in the previous year;

otherwise it is the reported usual monthly expenditure multiplied by the number of months in which purchases were made and divided by 12. Most analysts of the data, whether constructing poverty profiles or conducting research, appear to have used the "usual month" figures.

In some surveys, the respondent was offered only a single recall period for some non-food expenditures -- a week, since the interviewer's last visit, a month, or a year depending on the supposed frequency of expenditure. For example, frequently purchased non-food items, such as newspapers and tobacco, are usually collected with a recall period of the previous seven days or since the interviewer's last visit. However, for a substantial number of items, a dual procedure similar to that used for food has often been followed with a last visit measure constructed as before, although the alternative is now expenditures "in the last year" rather than usual monthly expenditure. In this case, a monthly estimate can be constructed by dividing the response by 12.

In terms of the literature discussed in the previous subsection, the "last- visit" measure can be thought of as an explicitly bounded measure that elicits from the respondent an answer based on his or her recall and counting of events, while the "usual month" question is an attempt to elicit from the respondent an answer based on a rate or frequency. Of course, these are generous interpretations. In the standard protocol, no consumption questions are asked at the first (in other words, previous) visit. Thus, although the visit itself may be fixed in the respondent's memory, it is not clear that this will help to reduce the errors in the dating of purchases that underlie telescoping. The respondent may remember the previous visit of the interviewer very well but still be unable to recall whether his or her trip to the market occurred before or after that visit. There is also a serious issue about whether the "usual month" recall is likely to be independent of the "last visit" recall. If respondents are "cognitive misers" who are casting about for a basis for estimating the "usual" rate, the questionnaire's wording will to give them one, in other words, the answer to the question that they have just been asked -- the "last-visit" question. Nor would omitting the "last visit" question necessarily solve the problem if the respondent's answer to the frequency question is unduly influenced by his or her recent behavior.

In background work for this chapter, data from the LSMS surveys in Côte d'Ivoire (from 1986), Ghana (from 1988), Pakistan (from 1991), and Viet Nam (from 1992–93) were used to compare the consumption estimates from the different recall periods used in the consumption modules. The aim was to look for evidence that reported mean expenditure rates decline with the length of the recall period and to check whether the same is true for the dispersion of the estimates.

For purchases of food (excluding the value of home production), the estimates are very similar between the "last visit" and "usual month" methods of calculating monthly food expenditures. Where there are differences, they do not conform to the expected pattern in which both mean and dispersion fall from the last visit to the usual month figure. Indeed, the differences are most marked in Côte d'Ivoire, where the last visit measures have *lower* means and medians by 5 and 8 percent respectively, and the measures of dispersion are very close. For Ghana, the two sets of numbers are effectively identical, a finding which extends to the complete distributions so that no poverty or inequality measure would be different if one kind of data were used to calculate it rather than the other. In Viet Nam, the last visit measures are slightly lower than the usual month measures, and the dispersion in the latter is perceptibly lower. A close

inspection of the details revealed that there are fewer very low reports in the usual month data than in the last visit data. (The Pakistan data cannot be used for this comparison due to the problems discussed above.)

For non-food items, for which the frequency of purchases is generally lower than for food, the differences between the two measures are more marked. For the means, the usual month measures are lower than the last visit measures for Côte d'Ivoire, Pakistan, and Ghana but not for Viet Nam. The dispersions are lower for the usual month measures than for the last visit measures in all four surveys. Except for Viet Nam, the decline in means is consistent with the syndrome of increasing forgetfulness over the longer period, and all the dispersions are consistent with the view that the last visit (two week) measure of these items is too short to give an accurate measure of households' annual standards of living.

When food and non-food are put together with other items to give a consumption aggregate, dispersion of total per capita household expenditure from the usual month data is less than for the last visit data, but the difference is not very marked, given the fact that the item with the biggest drop in dispersion -- non-foods -- is a relatively small share of most households' budget. Nevertheless, the differences are enough so that the headcount ratio measures of poverty will all be lower when the usual month data are used rather than the last visit data.

These results can be seen as encouraging, since they show that the results are only slightly sensitive to the choice between two of the most obvious reporting periods. An optimistic interpretation is that food expenditures are made with sufficient frequency and are sufficiently stable so that the last visit and usual month estimates are similar. While this is not true for infrequent expenditures for which the choice of reporting period affects both bias and variance, the total of such items is usually too small for their net effect on total consumption to be very large.

Of course, there are some caveats to this finding. If respondents forget about their food purchases at the sort of rates suggested by Scott and Amenuvegbe (1990), the last visit measures may themselves be substantially underestimated. Also, the consistency between the usual month and last visit measures for food may simply reflect households using their responses to the last visit questions to guide their answers to the usual month questions, which would not then constitute any sort of independent check on the validity of either measure. Note also that there are some non-food items in these surveys (mostly frequently purchased items) for which there was only a single recall period. While it might be hoped that these non-food items would not be sensitive to the choice of recall period, the inclusion of these items in the consumption totals certainly mutes the effects of the different recall periods on the overall totals.

Options for Future Surveys. From the discussion to date, it is clear that there are no definitive answers about the optimal recall period. In the meantime, however, surveys must be designed so there follows a discussion of some suggestions and options.

Note first that, if the survey being planned is meant to be comparable to another survey, it makes sense to use the same recall periods as were used in the other survey, provided that the previous survey conformed with best practice standards as outlined in this section of the chapter.

Beyond this consideration, there are two main routes to go. The first is essentially the "status quo" of the design of most recent LSMS surveys, while the second is a more extensive revision premised on the supposition that the current design is unsatisfactory. The preference of the authors of this chapter (which is reflected in the draft questionnaire) is to make only minor modifications to the status quo and to experiment with the components of any revision before putting it into practice.

The "status quo" design is to use two recall periods -- one being since the interviewer's last visit and the other being for "usual" expenditures. As already argued, the former yields estimates that have a minimal amount of telescoping, while the latter is a calculated, unbiased estimate. The evidence of the comparisons with NIPA data can also be cited; these do not show the gross and systematic underestimation of expenditures that might be expected if the recall data missed a very large fraction of expenditures. Finally, an important characteristic of LSMS surveys has been their coverage of many topics, which would be threatened by including a vastly more extensive consumption module. Consumption is already one of the longest and most expensive modules of any LSMS questionnaire, and to extend it further (even if the resources were available to do so) would inevitably crowd out other important topics. Nevertheless, these are clearly not strong arguments. The NIPA comparisons are weak, the consistency checks in the surveys are capable of many interpretations, not all of which support the validity of the data, the "last visit" recall period contains no bounding questions, and arguments in terms of expediency are much weaker if the data are of uniformly poor quality. Moreover, the two-visit structure is being used increasingly less frequently (for reasons not related to the design of the consumption module), in which case the last visit question would have to be replaced by a question with an unbounded recall, which will increase the potential for telescoping.

The other point of view is that the LSMS standard questions are far from being the best practice and that, to quote one of our reviewers, the late Chris Scott, "the use of the question, `How much do you usually spend on mangoes in one of the months that you purchase mangoes?' appears to fall far outside of reasonable best practice." Scott, who had extensive experience of carrying out consumption surveys in Africa (and elsewhere), believed that only a more extensive approach would yield adequate data. In particular, he argued that respondents should be interviewed several times, separated by the most accurate recall period, perhaps as little as a day. The number of interviews should be as many as are needed to cover the reference period, say a week or a fortnight, with a bounding interview at the outset. Some or all of these interviews can be replaced by diary keeping by the respondents themselves, by proxy record keepers in the household, or by interviewers who complete the diaries with help from the respondents, an alternative that blurs the line between diary and interview procedures (see below). There is some evidence reviewed below that diaries can capture some expenditures that may be missed in interviews, and with a sufficient number of such interviews, the substantial additional cost of conducting interviews can be translated into high-quality data. Nevertheless, even with a two-week reference period (requiring 10 or more interviews), seasonality is still not captured nor are other fluctuations in consumption over the year. It is conceivable that "usual month" responses do capture some of this variation, but this is probably little more than a hope.

It is recommended that every survey have a budget for experimentation. Questions should

occasionally (if not regularly) be subjected to cognitive laboratory techniques and revised and updated in the light of the results. Even more importantly, the extensive interviewing and diary techniques discussed above urgently need to be compared against the standard "last visit" and "usual month" responses, preferably on randomly selected subsets of households within the same survey.

Finally, it cannot be overemphasized that the wordings of the recall periods must be unambiguous and well understood by interviewers. Wordings such as "since my last visit, two weeks ago" are obviously ambiguous if the visit did not occur exactly 14 days ago. There are also possibilities for confusion in recording the units of a purchase. Where quantity or price data are sought, it must be clear what unit they refer to. Obtaining the units for quantities purchased may work better than obtaining the units for prices or unit values, so this is reflected in the draft consumption module presented in Part III.

Multiple Visits Throughout the Year

In most past LSMS surveys, primary sampling units and the households within them were visited on two occasions two weeks apart, but the consumption data are collected only during the second visit. Thus, there is a single record of consumption over whatever recall period is selected. This has also necessarily been the case in the increasing number of LSMS surveys where only a single visit is made to the primary sampling unit. Even if the surveys were to adopt a more intensive program of multiple interviews, consumption data would still be collected over only a relatively brief period, say a week or a month. No proposed design of the LSMS consumption module would capture variations in household consumption over a whole year, so that the consumption data that are currently collected may not reflect the annual consumption flows in which analysts are fundamentally interested. To collect better data, it would be necessary to revisit households on several occasions throughout the year and to collect consumption data during each visit. Such data could be used to increase the accuracy of the consumption aggregates, allowing for variations in households' consumption over time, and they could also be used for a number of analytical exercises.

One issue is *seasonality*. The collection of agricultural data and agricultural income typically requires that the survey interviewers visit households (farms) in different seasons of the year. Farm incomes are seasonal, and it may not be possible for a respondent to remember all of the transactions that go into a calculation of net income many months afterwards. In consequence, it is widely believed -- and suggested in Chapter 19 in this volume -- that accurate farm surveys require multiple seasonal visits. The concern in the current chapter is with consumption, but it is conceivable that consumption expenditures -- like incomes -- vary systematically with the seasons, so that if respondents' memories are a problem, accurate estimation of annual consumption flows will require multiple, seasonal visits just as does the accurate estimation of income.

While the seasonality of consumption is a fact in most countries, it does not necessarily follow from the seasonality of income, and it may have a quite different seasonal pattern. At the theoretical level, farm households have strong incentives to untie their consumption from the seasonal patterns of their incomes. In extreme cases, harvests generate income only during a few

weeks in the year, while consumption has to be maintained throughout the year. Note that it is not necessary to accept the permanent income or life-cycle hypothesis of consumption to believe that households can smooth their consumption over the year. Even without access to credit markets, farmers can store some of their output or can save some of their income from the harvest to support their consumption throughout the rest of the year. Indeed, given the predictability of the seasons in agriculture, it would be extraordinary if farmers had not learned to do so. Of course, there will be still be seasonal patterns in their consumption. Festivals such as Tet or Christmas are associated with higher than normal expenditures. Furthermore, storage is costly, so that prices will generally be higher just before the harvest than just after it, and there will be some resulting effect on consumption. However, the point is that seasonal variation in consumption is (i) not closely tied to, and (ii) less than, seasonal variations in income. Reliable evidence on the relative seasonal smoothness of consumption comes from Paxson (1993). Rice farmers in Thailand who double crop (with irrigation) have quite different seasonal patterns of income than farmers with only one crop, yet their consumption patterns are almost identical and exhibit little seasonal variation. The same is true of a comparison between farm and non-farm households and among farmers in different agroclimatic zones.

An attempt has been made for this chapter to look for seasonal patterns in the consumption data from three LSMS surveys. Cross-sectional surveys are not well-suited to this task, since what is required is not a large number of households observed throughout a single year but rather a large number of years over which the seasonal patterns can be established. Nevertheless, the consumption totals for Ghana, Côte d'Ivoire, and Viet Nam were examined for differences across months. In any one survey for a single year, there tend to be significant differences in the consumption total from one month to another. Some of these -- such as Tet in Viet Nam -- are easy to explain, but others are not, even though their effects are sometimes large. However, many of the differences that can be seen are probably not driven by seasonal patterns in consumption. Evidence from this comes from Côte d'Ivoire and Ghana, for which there are data for more than one year. In both cases, the monthly patterns in the consumption total are quite different across the survey years, which does not support any simple unvarying seasonal pattern. Even so, the source of the monthly differences remains something of a puzzle. The progression of the survey teams through the country may generate some variation as they move from poorer to richer villages. Random measurement error is also likely to be an important factor. Nevertheless, this limited analysis provides no ground for supposing that consumption would be better measured by including multiple, seasonal visits to households in LSMS surveys in the future.

However, there are other reasons why multiple visits might be useful. The average of two consumption totals, each for a two week recall, will give a better, lower-variance estimate of longer-term consumption. More radically, Scott (1992) and Central Statistical Office of Zambia (1995) advocate using the correlation between consumption across multiple visits to correct measures of inequality to bring them closer to what would have been measured had it been possible to collect consumption data over a full year for each household. The idea is as follows. Suppose that analysts are interested in annual consumption measured at a monthly rate but that the only observations that they have are of consumption over the previous month. At one extreme, each household may consume the same in each month so that the monthly totals are correct and can be correctly used to give a measure of dispersion over households. At the other extreme, suppose that each household's consumption is uncorrelated from one month to the next.

The "last month" totals are then correct on average, but their dispersion over households would be larger than the dispersion in which analysts are interested because it has a "within-household" component in addition to the "between-household" component with which analysts are concerned. With multiple observations for at least some households and under some reasonable assumptions, it is possible to estimate the size of the within-household dispersion and to correct the measures of the total. The Central Statistical Office of Zambia (1995) uses such a procedure to correct dispersion measures for a Zambian survey, and the technique could usefully be applied elsewhere.

Note also that, as always, measurement error will add dispersion to measured consumption, so that, if measurement error is random, the dispersion that it causes will be in addition to the genuine dispersion that comes from the within and between household components of dispersion. Although this is not explicitly allowed for in Scott's formulation, his corrections should still lead to a better estimate of dispersion. With repeated observations of the same households, there are a number of techniques that would make it possible to assess the size of measurement errors (see particularly Griliches and Hausman, 1986).

Finally, note that, in some circumstances, multiple consumption measures can be useful at the analytical stage. Multiple visits generate a type of longitudinal or panel data that can be useful for studying changes over time and for sorting out cross-sectional as opposed to time-series variation as in Scott's work above. However, if the visits are separated by only a few months, the changes that may have occurred may not be large enough to be interesting, and the measured changes are likely to be dominated by measurement error.

The recommendations made here are once again tempered by the increased costs of extending the consumption module of a typical LSMS survey, both in terms of money and of the consequences for the rest of the survey. Because consumption is smoothed within the year, measuring it over a fortnight or a month may yield a sufficiently accurate picture of annual consumption to make it not worth incurring the cost of adding yet more visits. On the other hand, if the detailed agricultural module is included in the survey with multiple visits at different seasons, there would be little additional costs involved in collecting at least some consumption data at each visit. Such cases apart, multiple visits throughout the year are probably not the highest priority for improving the typical LSMS survey.

Imputing Values

In nearly all LSMS surveys, calculating a comprehensive measure of consumption will require at least some imputations. Not all consumption is obtained through market purchases, so that if analysts want to calculate consumption in monetary units, they must find some way of pricing its unmarketed components. In many of the poorest countries, and especially for the poorest people, a large share of food comes from home production or from collecting wild foodstuffs, hunting or fishing. These imputations for food are likely to be those that are most important for the totals. However, there are a number of other commodities that are obtained by the household's non-market labor such as home-made clothes or wood and water fetched by children or women. Household members often receive gifts or payments in kind that need to be priced before being added in to the consumption total. Finally, it is necessary to obtain

information on the consumption that comes from using durable goods. For non-durable goods -- even those that are partly durable -- it is probably safe to assume that consumption and purchases are one and the same. However, for large durable goods such as houses, cars, or bicycles that are expensive and that last for many years, it is important to try to make some adjustments. This subsection reviews the data needs that are required to make those imputations.

Before doing so, it is worth noting that imputation is an inherently difficult and error-ridden process. It is likely to work best where there is relatively little need for it, which is when the economy is highly monetized but where there is a relatively small amount of own production (such as vegetable gardens) involving goods that have clear market equivalents. It works badly in economies where a large share of transactions do not pass through the market. LSMS procedures for estimating welfare stem from a theory of a consumer with well-defined preferences operating in a market where prices are well-defined and unaffected by the agent's behavior. Where these markets do not exist, analysts are effectively imposing an accounting framework on the physical data that is of dubious relevance to the lives of the people that are being studied.

Home-produced food, or food received as gifts or payment in kind, has been much the most important imputed item in most of the LSMS surveys to date. In principle, the calculations are straightforward. The respondent is asked to report the value of any home-produced food consumed by the household during the reference period, and then the sum of these items is added in to the consumption total. Given the seasonality of production, the recall period probably has to be a year, or at least a typical month over the last year. It may be possible to do better than this when there is a multiple-visit agricultural module in the survey. However, the major difficulties are with valuation, since the respondent is being asked a purely hypothetical question about the sale or purchase of an item that is only rarely traded or that may have only been traded some time ago.

The draft module presented in Part III recommends collecting data on physical quantities of goods consumed since these are magnitudes that the respondent observes, at least in principle. The value or price of these quantities can be obtained in several ways. Farm-gate prices, defined as what the household could get for its production, set a lower bound on valuation, since it is usually presumed that consumption is evidence that the good is valued beyond what it would fetch. Market prices, by contrast, are likely to be too high since they include transport and distribution margins and because the commodity that is traded is often of a higher quality than the home-grown variety. However, once the quantity has been obtained, the respondent could be asked to report one or both of these two prices or simply to estimate the value of the commodity directly. Some degree of cross-checking is possible from the quantities and prices of purchases reported in the agricultural module or from the prices gathered in the community questionnaire.

In some circumstances, it may be possible (or important) to carry out a similar exercise for non-food items. Clothes and furniture are often made at home, and household labor is used to collect firewood, dung, or water. These items have usually been omitted from past LSMS surveys, probably because of difficulties in valuation. One danger is that the welfare of poor households might be overstated by using inappropriate prices or wages to value their production or their labor. For someone with no other employment opportunities who ekes out a living gathering firewood or coal, it is adding insult to injury to impute a high standard of living to them

by valuing their time in terms of the market wage in a formal sector that is inaccessible to them. In some circumstances, the wage data from the community questionnaire may be a better basis for imputations based on the value of time, but they do not eliminate the dangers inherent in the procedure.

Note also that it is incorrect to compute an extended concept of consumption by adding "expenditure" on leisure (in other words, the value of leisure at the market wage) to total consumption. This "full-income" concept has its uses, but it is a nominal measure and, like other nominal measures, must be converted to real terms before being compared across households or individuals. The problem here is that, even if everyone in the comparison faces the same (or similar) prices for goods, they do not face the same price of leisure because wage rates differ. As a result, full income must be deflated by some price index that includes the price of leisure before it can be used as an indicator of welfare. Alternatively, if the value of leisure is to be added into the value of total expenditure, the same wage rate should be used to value everyone's leisure.

For durable goods, the consumption flow is best thought of as a rental equivalent or "user cost." This has two components: (i) the opportunity cost of the funds tied up in the good that could be realized through its resale and (ii) the value of the physical depreciation of the good that comes through using it or simply through the passage of time. To estimate these magnitudes, some measures of depreciation and of current value are needed. Perhaps the simplest way to obtain the information, at least for goods purchased in the previous five to ten years, is to ask respondents to report when they purchased the good and how much it then cost. These are both factual matters and will often be well-remembered, at least in the case of large, important items. Provided that the good has been available for some time and provided that purchases have been made relatively evenly over time, an estimate of the average lifetime of the good can be obtained by doubling the average age over all similar goods for all households in the survey. Once this is known, the depreciated value of the good can be estimated given its age and original value, which is then used to calculate the first component of the user cost. It is also possible to ask respondents for direct reports of the current market value of the used durable, though there is no evidence on the likely accuracy of such (hypothetical) reports, and field tests are likely to be useful.

For housing, the largest of the durable goods, the imputation approach again starts from the rental equivalent. Unlike the value of most other durable goods, rents can sometimes be observed directly, and these are the correct numbers to add into the consumption aggregate. For households that do not report rents, the standard procedure is to impute a rent based on the characteristics of the house, as reported in the housing module. This is typically done by "hedonic" regressions in which reported rent is regressed on the house's characteristics (such as is size, number of rooms, construction material, and location) and the results used to calculate rents for other properties where rents are not reported. The credibility of these regressions is compromised if only a small fraction of the sample report rents and, more generally, if those who report rents are unrepresentative of the population as a whole. While it is possible to make mechanical corrections for the selection, these usually require arbitrary and untestable assumptions that further compromise the credibility of the process. This is a difficult area. In general, survey analysts should make sure that indefensible imputations are not dominating welfare comparisons. The data required for such imputations are gathered in the housing module

(and, occasionally, in the community questionnaire) and so are not discussed further in this chapter.

A number of other imputations come from other modules in the survey. In particular, the employment module gathers information on income in kind provided by employers, including (free or subsidized) transport to and from work, food at work, or housing.

Respondents for the Consumption Module

Most LSMS surveys have interviewed a single respondent for the whole of the consumption module or for each different part of it. The household is asked to determine who the "best informed individual" is and to have that person respond. This has the appealing feature of not pre-judging the division of labor in a household, either by gender or by age, as would be the case if it were assumed that the wife does the shopping or if any similar assumption were made. In many, perhaps most countries, the single respondent approach works well. In particular, it will be satisfactory where food is a large share of the budget, where there is a common cooking pot, and where most of the household resources are pooled.

Even within resource-pooling households, it may be useful to have multiple respondents for some expenditures or different household members reporting on different categories of expenditure. While the person who does most of the shopping for food will know about this large share of the household's budget, another large share could be most accurately reported by the person who pays the housing and utility bills (who may or may not be the shopper). Then there are other expenditures of which no one single person may have a very accurate picture. Individuals may not know even how much "walking around" money the other household members have, much less how they spend it -- whether on bus fares, meals away from home, newspapers, tobacco, alcohol, or entertainment. Also, there may be larger items, such as clothing, that individuals purchase without any other household member knowing how much was spent. This is particularly true where several adults live in a household, each contributing something less than all of their income to the household's joint expenses and reserving the remainder for their individual use. For example, in a household with a mother and grown sons, the mother may handle all the household expenses, including food and utilities, paid for from her pension and from regular monthly sums given to her by her sons. However, she may have little or no idea about her sons' incomes or other expenditures, which could account for most of the household's total income and outlay. In this situation, no one person can give an accurate report of the household's income and expenditure, nor is the "household" really the relevant unit for analysis.

The LSMS has little experience in procedures for dealing with these situations. In the literature discussed in the next subsection, there have been cases where each adult member of the household kept a diary of at least some categories of expenditures. It is possible in principle in interview situations to interview each member of the household about at least some expenditures, such as those paid for by "walking-around" money. A more ambitious prospect would be to try to record incomings and outgoings for each member of the household who spends money. This is likely to be prohibitively expensive for a general multi-topic survey, although, as always, there are potential benefits from conducting experimental work either on a few households or within a special survey. Multi-person accounts are likely to provide a fascinating picture of how

intrahousehold transfers of resources take place, on who gets what, and on what it is that makes a group of people function as a household. This is clearly an important research area but not a prime candidate for incorporation into standard LSMS surveys at this time.

Diaries versus Oral Interviews

The use of consumption diaries, in which households are asked to record their purchases as soon as they make them, is common in full-fledged single-purpose consumption surveys. The ideal diary would yield a record of each purchase immediately after it takes place, so eliminating the need for respondents to rely on their memories and removing any associated errors, including telescoping. In principle, the diaries may be kept by a single respondent or by several or all members of the household, so they can also help to resolve the question of who makes the best respondent for the whole household while simultaneously yielding information on intrahousehold allocations. Diaries can be organized on a product basis, on an outlet basis, or on a purchase basis, and the forms can be designed to allow a large degree of prompting (for example, by listing many types of products) without the associated tedium of a long interview.

There are some practical implications to the use of diaries. The most obvious is that the person filling them out must be literate. Nevertheless, the diary approach has been used in household expenditure surveys in a large number of countries where literacy is not universal. This has been achieved by having the most literate member of the household (sometimes a child) help the one who does the purchasing to fill out the diary or having the interviewer visit the household frequently to help the household to fill it out, perhaps even on a daily basis, see Blaizeau (1998). In such cases, the distinction between a diary and an oral interview becomes blurred. This blurring occurs even in literate households in which the members of the household either forget to fill out the diary or get tired of doing so. In the US CEX, substantial numbers of diaries are completed by the interviewer at the time of collection based on the respondent's memory. When collecting the diary, the interviewer examines it briefly and, if it appears to be incomplete, he or she will try to prompt the respondent to fill it out more completely, which becomes essentially an interview. To the extent that these "diaries" rely on respondents' memories, telescoping and recall bias once again become potential problems.

The second logistical issue is that the diary must be explained and left with the household and picked up after its completion. If the diary period is relatively short (a week or two), this would not necessarily pose a problem in an LSMS survey, since the completion of the whole questionnaire typically involves multiple visits by the interviewer to the household so that each member can be interviewed and so that the length of each interview can be kept reasonable. However, leaving a diary with a household for a long period of time, such as a month or a quarter, would be more difficult and would not be possible within the current design of most LSMS surveys. Thus, diaries will only be pertinent for items for which a relatively short recall is appropriate and, thus, not for a large proportion of non-food expenditure.

Third, the use of a diary changes the burden of interviewing. Most directly and measurably, it reduces the amount of time that the interviewer has to spend interviewing households that fill out the diary completely, though it may increase the time that the interviewer must spend to travel to the household to collect it and to help illiterate households to fill it out. Moreover, it

shifts the burden of response onto respondents. The effect of this is unclear. Some survey statisticians speculate that households may enjoy the novelty of filling out the diaries, while others think that it makes it possible for the household to fill out the diary at the time of day or in the place that is most convenient to them. If either of these speculations are true, then the burden on the households would be limited, and they would not be deterred by the prospect of participating in the survey or of keeping accurate records.

Nevertheless, evidence from industrialized countries shows that keeping diaries *is* likely to deter households from participating in surveys and that the burden of keeping the diary causes respondents to drop out of the survey over time. There is also evidence that the *rate* of reporting declines with time, so that, in two-week diaries, more consumption is recorded in the first week than in the second. This is also true for the CEX in the US, and is documented for seven West African countries by Blaizeau, 1998. In Belarus' 1995 and 1996 income and expenditure surveys, the expenditures recorded in the second week were about 15 percent lower than those in the first week of diary keeping (Martini and Ivanova, 1996). In Armenia, the diary was kept for four weeks, and the downward trend continued over this longer span. The second week's expenditures on food were 26 percent lower than the first, the third week's were 35 percent lower than the first, and the fourth week's were 40 percent lower than the first (calculations done for this chapter). This could be due to respondent fatigue or to the fact that the novelty of diary keeping wears off. Also, the very fact that they are keeping a diary may cause people to spend more or to shift their expenditures forward into the diary keeping period. Keeping a diary may cause people to think more about their consumption and perhaps to take the opportunity to buy some items that they needed in any case. To the extent that diaries are not filled out every day, there is also scope for telescoping and recall errors within the diary period.

Having several members of the same household each keep a diary is also an attractive option in some circumstances, and there is considerable variation in practice among different kinds of surveys. For example, in the US CEX, there is a single household diary, while in the British FES, all adults in the sample keep individual diaries. There is also evidence from Hong Kong on the use of multiple diaries, reported by Grootaert (1986), from Papua New Guinea, reported by Gibson (1998), and from surveys in Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal, and Togo reported in Blaizeau (1997). This literature finds that multiple diaries can be useful for obtaining records of expenditures that would otherwise be missed, but that it is difficult to get all household members to cooperate, so that response rates can be reduced in the attempt. It is also clear that for some household members, certainly children and perhaps some of the elderly, proxy or household-level reporting can be more accurate.

To the existing literature can now be added evidence from experiments in three former Soviet republics -- Latvia, Armenia, and Ukraine. In the Latvian experiment (analyzed by Scott and Okrasa, 1998), a nationally representative set of 300 households were given oral interviews and asked to keep diaries covering a comprehensive lists of foodstuffs and a selection of non-food items. In half of the sample, the diaries were administered first, and, in the other half, the interviews were done first. The order of the instruments had virtually no effect on the results. Overall, food expenditures were about 46 percent higher for the diary than for the interview; the coefficients of variation were quite similar. This pattern also held for 13 of the 15 subgroups of food and generally for the quantities as well as for the expenditures. For non-food, the results

were much more mixed. For one of the four categories, the expenditures reported in the diaries were significantly greater than those reported in the interviews, for two of the categories, the opposite was the case, and in the fourth category, the differences were not significant.

In Armenia, as part of nationwide survey, a quarter of the households in each cluster were given diaries for 30 days and interviews with 30-day recall periods were conducted with the remaining three-quarters of the households. The only diary data available to the authors in usable form are from the food sections of the diary, so the comparisons done for this chapter had to be be limited to those items. Total expenditures for food recorded in the diary were about one-third higher than those resulting from the interview, a result similar to that in Latvia. However, this pattern did not hold as strongly for the sub-groups of food. Of the 15 groups (which each included from one to 19 items), the diary yielded significantly higher expenditures than the interviews in eight cases, significantly lower expenditures in two, and not significantly different expenditures in the other four cases. There is no noticeable pattern to these results in relation to the mean expenditure, the number of items in the sub-group, or the average frequency of purchases. The coefficients of variation for the diary were twice as large as for the oral interviews. The same pattern of results generally held when the whole sample was divided into rural and urban areas, although the differences were slightly larger in rural areas. The diary estimates for total food expenditure were 43 percent higher than for the interviews in the rural areas and 31 percent higher in the urban areas.

In Ukraine, a diary was administered to about 500 households in selected locations as an experiment in conjunction with a national survey that used interviews. The diary used a recall period of four weeks for all items. The oral interview used a recall period of two weeks for food and four weeks for non-food items. The lists of items in the two instruments were not the same. The comparisons made here were limited to those categories that were either identical between the diaries and the interviews or that could be clearly mapped into each other. For instance, “butter” was an item listed as such on both lists, but the interview list contained a single question about “smoked sausage and other smoked meats” while the diary had separate items for “smoked sausage” and “other smoked meats.” Thus, in this experiment, there are two possible effects that will work in opposite directions. On the one hand, the diaries might yield higher expenditures than the interviews, partly because of the greater disaggregation of the items on the diary list. However, the shorter recall period in the interview may have meant that the interviews yielded higher expenditure numbers due to the greater proportionate influence of any telescoping. Moreover, if diaries are kept less rigorously as time goes on, the shorter recall period in the interview may mean that higher numbers are reported in the interviews than in the diaries. These effects cannot be disentangled because data available to the authors contain only the sub-totals for each item recorded in the diary rather than each individual purchase of it.

In fact, in the Ukrainian experiment, the expenditures for the subtotal of food items that could be matched between the two instruments are 10 percent lower in the diaries than in the interviews, a difference which is significant only at the 10 percent level of confidence. In only three of the 11 categories are expenditures significantly different between the diary and the interview. The category that covers bread and flour accounts for about two-thirds of the total differences found in the food sub-totals. For the sub-total of non-food items that could be matched between the two questionnaires, the diary sub-totals were 7 percent lower than those for

the interviews, a difference that was not significant.

There are several features of these three experiments that limit the extent to which they can be generalized to other contexts and countries. The populations of Latvia, Armenia, and Ukraine are literate, so these experiments cannot indicate what would happen if diaries were used in largely illiterate survey populations. All three countries have long traditions of household expenditure surveys that use diaries. In Latvia and Armenia, the experiments were carried out by the statistical office using regular interviews, so that the experiments used experienced staff who were thoroughly familiar with the procedure. This was not the case in Ukraine, where the experiments were done by a private survey organization, which may account for some of the differences in the two sets of results.

Past LSMS surveys have made less use of diaries than might have been the case, and perhaps more use should be made of them in the future. It is certainly true that an ambitious statistical office in a developing country, looking to the industrialized countries for inspiration, would probably use diaries. What is less obviously true is whether, even in rich countries, there is any indisputable evidence of the superior performance of diaries over interviews to justify such a decision. While diaries would produce better results if they were used in ideal circumstances, it is unclear whether their practical superiority over interviews has ever been convincingly demonstrated. Given the literacy issue in many poorer countries, the argument for a change becomes even less overwhelming. While there is no doubt that diaries can be used in situations where interviewers make many visits to the household to help them remember their purchases and complete the diary, this is closer to diary keeping by the interviewer than diary keeping by the respondent. In countries such as Armenia and Latvia where diaries have been routinely used in the past, there is every reason to incorporate them into LSMS-type surveys. However, there seems to be no compelling case for introducing the use of diaries as standard in LSMS surveys at this stage.

Data from Other Parts of the Questionnaire

While much of the data required to calculate consumption aggregates come from the consumption module of the household questionnaire, other important data are usually collected in other modules of the survey. These are reprised briefly here, to serve as a checklist for the overall survey design. If survey designers decide not to collect data in the other modules on the items mentioned here, then they should ensure that they are collected in the consumption module.

Roster. Analysts need to know the number of members that the household has in order to compute per capita expenditure measures. If they intend to calculate equivalence scales, then they will need data on the age and sex of the members as well. These are never omitted from rosters, so this should not be a problem.

Housing, Water, Sanitation, and Fuel Modules. The housing module will collect most of the information needed to impute the use value of owner-occupied housing. It is also the usual place to gather information on utilities (such as electricity, piped gas, and telephone service) and on expenses for water, sanitation, and some kinds of fuel although it is now being suggested that, in some surveys, these may be moved to separate extensive water, sanitation and fuel modules

(these are discussed in Chapter 16).

Education Module. Detailed data on household expenditures on school fees, uniforms, textbooks, supplies, bus fares and so on are usually collected for each student in the education module with recall periods that are considered to be appropriate to the category of expenditure. These expenditures are used to compute consumption aggregates. Collecting this information in the education module makes it easier to make the questions refer to specific individuals, which is necessary for much education analysis. The fact that detailed information is collected also means that the information is more likely to be complete. Conceptually, there may potentially be some overlap between some of the items recorded in the education module and those in the consumption module. For example, does the category on children's clothing in the consumption module include or exclude school uniforms? Few LSMS questionnaires have been careful to specify this in the questionnaire itself, although it may have been addressed during the interviewer training process.

Health Module. Detailed data on health care expenditures such as payments to doctors or other medical professionals, for prescription medicines, and for lab tests are usually collected in the health module for each person who incurred such expenses during the recall period, which is usually the previous four weeks. Data on expenditures on health insurance and over the counter medicines are usually collected in the consumption module. Some surveys have also included a general question or two in the consumption module about expenditures on the items covered in more detail in the health module. In the consumption module, the coverage is for the whole household and for a reference period of up to a year. The detailed data that are usually collected in the health module will generally give higher means than the aggregate questions in the consumption module, but the shorter recall period will result in higher variances. Analysts may then chose which method best suits their particular analysis. However, survey designers must ensure that one or the other is included; the detail provided in the health module is probably preferable if only one is to be included because it will yield more accurate means and support many health sector analyses.

Employment Module. The employment module is usually the place to gather information on households' consumption of goods provided in kind as a part of wages and on their members' commuting expenses. Different analysts tend to handle commuting and other job-related expenses (such as childcare, uniforms, and fees for professional associations) differently. Some even exclude them altogether from the consumption total on the grounds that they do not increase the household's welfare. At any rate, it is useful to gather data on commuting expenses to give analysts the choice.

Environment Module. Households sometimes obtain important resources from the environment. Water for household use and firewood are perhaps the most familiar examples, although a wide range of plants, animals, and minerals can be gathered from wild or common property to be used as food or fodder or as inputs into the household's enterprises, agriculture, or housing. To gather a full range of data on households' use of such resources would probably require the inclusion in the survey of a special purpose module and the modification of the consumption, agriculture, household enterprise, and housing modules to ensure full accounting while avoiding double counting. This has yet to be done in an LSMS survey, though it has been

done in some interesting single purpose surveys (see Cavendish, 1998). However, several past LSMS surveys have gathered information on at least a few of these resources, especially water and firewood. Such questions have typically covered the quantities used by the household, sometimes the time spent in collecting or carrying the goods, and sometimes the distance traveled to find them. Survey designers need to decide how much emphasis to give to this issue in the survey being planned and to review all pertinent modules to ensure that modifications have been made where needed.

Community and Price Questionnaires. The community and price questionnaires are the places to gather data on prices at the community level. If neither a community nor a price questionnaire is to be included in the survey, then it is of paramount importance that either: (i) adequate regional price indices are available from some other source or, more likely, (ii) data on quantities of food and fuel consumed by households will be obtained in the consumption module. It is also vital that the survey designers are willing to base regional price adjustments only on food and not to use non-food in the price index.

Saving Module. Data on any regular saving that households may make can be gathered in either the saving module or the consumption module.

Inter-household Transfers. Many surveys have included a separate module that elicited data on flows of transfers in and out of the household. In general, it makes sense to put the questions about inflows and outflows of transfers together and to elicit parallel information about them. In this book, the inflows are discussed in the miscellaneous incomes chapter (Chapter 20) and a page is included in the draft consumption module presented in Part I of this chapter on outgoing transfers.

Part III: Draft Modules

This section contains a set of draft sub-modules to make up a consumption module to be included in an LSMS-type household survey. The draft module is something of a middle ground in terms of length. In certain circumstances, some questions could be deleted, and some areas could be explored in much more detail. When such adjustments are warranted and how to make them is described in Part IV.

Survey designers need not follow the order in which the sub-modules are presented here since the same information could have been organized differently. There seems to be no rigorous evidence about how different organizations would affect the answers given by respondents. However, there are a few principles that survey designers should bear in mind, which are discussed below, but the particular layout that best accomplishes these principles may vary.

Organization

There are different ways of grouping items together -- by the type of the item (such as food, fuel, or clothing), by the place of purchase, by recall period, or by the kind of follow-up questions to be asked (about quantities, prices, or home production.). The exact layout will depend upon the circumstances in the country where the survey is to be fielded (including what people consume and how they acquire it) and on the objectives of the survey (is it important that the survey be able to make a rough estimate of the number of calories consumed by the household or that it should be able to support intrahousehold analysis or the analysis of home-produced services?). The survey designers must draft one or more versions of a questionnaire and field test them rigorously to determine if the proposed module actually works.

Comprehensiveness

The questionnaire should cover *all* types of consumption. It will often be pragmatic to define some categories that contain groups of items (for example, "canned goods") in order to get a comprehensive list of expenditures without making the list unduly long.

Box 1: Cautionary Advice

How Much of the Draft Module is New and Unproven? The draft consumption module presented here closely follows the approach taken in many previous LSMS surveys.

How Well has the Module Worked in the Past? The consumption modules in most previous LSMS surveys have produced data that have appeared to many analysts to have reasonable magnitudes and to show expected patterns of consumption by categories of items and over types of household. However, field tests of the module in some countries in Africa showed that respondents had difficulty reporting data on quantities of goods purchased**,** so those questions were deleted in those countries. In some surveys, respondents have seemed to be confused about whether to report a total value and a quantity or a value per unit of purchase and a quantity. Where this confusion prevailed, it was necessary to delete some observations from the resulting data set or even to discard all of the data with a short period recall. To minimize this risk, the questions should be clearly formulated, the order of the questions should be thoroughly field tested, and the interviewers should be fully trained. However, the most effective insurance would be to use two recall periods, at least for food, to ensure that there is always a backup measure of consumption in the data set

Which Parts of the Module Most Need to be Customized? Survey designers should base their decisions about which items to include in the different sub-modules on local consumption patterns. If a comparable survey was previously fielded in the country in question and if the consumption module in that survey was designed broadly in accordance with the best practices described in this chapter, then the designers of the new survey should choose to use the same recall periods and the same degree of item disaggregation as in that previous survey.

Specificity

It is important to list certain items individually. In general, this will be of interest for items that are important sources of calories or that are particularly interesting to analysts in their own right, such as subsidized fuels and those goods whose consumption is particularly favored (or disfavored) by policymakers ("merit" goods or "sin" goods).

Double-counting

It may sometimes to be useful to create a cross-check by gathering data on the same items in more than one place in the questionnaire. In these cases, the questions should be worded carefully so that the analyst knows how to exclude one or the other to avoid double-counting these data in the estimate of total consumption. For example, if purchases of “major kitchen appliances” are listed among the consumption expenditure items, then the inventory of durable goods should not list “stoves” since it would not be clear whether stoves were included in “major kitchen appliances” or not. In this case, the durable goods inventory should either use the same category -- “major kitchen appliances” -- or omit all such items.

Customization

Each questionnaire must be customized to reflect the circumstances that prevail in the country or area where the survey is to be fielded. The lists of consumption items must be customized to reflect local consumption patterns and local terminology. Which items are listed for which recall period will depend on the shopping patterns of the local people. A few examples of this are given in Part IV.

Part IV: Annotations on Questionnaire

This section consists of a series of notes and annotations to each of the draft sub-modules that were presented in Part III. This is followed by several general guidelines for dealing with some special circumstances within which a survey may have to operate. The section ends with some advice about how to keep the module as short as possible consistent with the need to gather sufficient data to support the analysis of the most important policy issues in the country in question.

Part A: Daily Expenditures

The list of items to be included in this sub-module will vary from country to country. The idea is to capture (with a short recall period) the many small, repetitive miscellaneous transactions that many people engage in on an almost daily basis. Individuals often purchase the kind of items to be listed here with their "walking around money." As such, this is one of the places in the consumption module where it would be feasible to collect individual-specific data.

It is important to check that all items are covered in one part of the questionnaire or another, and that any double-reporting is intentional as a cross-check rather than as a the result of an ambiguity. For example, if fuel sources are included in the housing module, then they need not be included here. In some countries, gasoline for cars is included in the daily expenses page, whereas in others, it is in the non-food consumption page.

The list of items used in the draft sub-module is a mixture of the lists from various previous LSMS surveys. Other items that could be included are: khat, flowers, gasoline, firewood, haircuts, shaves, baths, and tips.

In this sub-module, there is a special grid for meals consumed away from home. Experience has shown that the more detail that appears in the grid, the higher will be the numbers reported. In Jamaica, in 1993, the questions were individual-specific, and the estimate of expenditures on food purchased away from home accounted for 5 percentage points more of total food consumption than in 1992 when a single question on the daily expenditures grid was used (Table B-6 in Statistical Institute and Planning Institute of Jamaica, 1994 and Table B-4 in Statistical Institute and Planning Institute of Jamaica, 1995). If the grid is individual-specific, then it would probably be better to have each person respond for him or herself rather than to use a single respondent as specified in the draft sub-module. In that case, the page should be adjacent to other individual-specific modules. Care may be needed to avoid double-reporting subsidized lunches in the factory canteen or the schoolyard, as these may also be captured in the employment or education modules.

This draft sub-module is modeled after the one used in the Kazakstan questionnaire because most of the answers obtained from it made intuitive sense. The number of meals reported was mostly divisible by five, indicating regular patterns associated with the work week, and the unit value for the meals seemed to be plausible.

Part B: Food and Fuel

This sub-module gathers information on the food and fuel consumed by the sample households.

List of Items. The list of items that should be included in this sub-module will vary from country to country. The full-scale expenditure survey done every five or ten years in most countries to provide weights for the consumer price index has served as the basis for the development of the lists of foods in past LSMS surveys. Special care should be taken to itemize those goods that are substantial contributors to the total number of calories consumed and to expenditures, as well as those that are (or are most likely to be) subsidized. Thus, in Central America, rice, beans, and tortillas would each be listed separately rather than in a group of "starches" or "basic grains."

To prevent the list of items from becoming unwieldy (in the order of hundreds), there will inevitably have to be some grouping of items, such as "canned foods" or "vegetables." This grouping is necessary to ensure completeness and a brevity that is acceptable to respondents. Such groupings, however, can pose problems for interviewers in eliciting answers about quantities of the item that were consumed and for analysts in trying to establish the nutrient content of the items. There is no perfect solution to the problem, but survey designers should bear it in mind. For some items, it may be pragmatic to black out the quantities question, thereby eliminating a source of confusion in the interview at the small cost of losing a piece of ambiguous data. For other items, taking care to keep the sub-grouping reasonably homogenous may help to resolve the issues both of establishing quantities and of estimating caloric content. "Leafy green vegetables" and "potatoes, sweet potatoes, and other tubers" are more internally homogenous categories than "vegetables."

It is usual, and probably helps respondents to remember the necessary information, to list the items so that "similar" items are together. In past surveys, this has usually meant that "botanically" similar items were placed side by side (in other words, all meats together and all fruits and vegetables together) and that, within each group, those items that are more commonly consumed were placed first. This probably also reflects people's shopping patterns in most countries if vegetables are in one section of the market and meats in another of if they buy their vegetables from the greengrocer and their meat from the butcher. If a very long list of items is to be used, it might make the interview more manageable to divide the list into sub-groups in a more explicit way than is shown in the draft sub-module, with sub-headings for each sub-group. Then each sub-group could have a filter question such as "did your household purchase any meat since my last visit?" After that, separate questions on each kind of meat would follow. Some surveys supplement this general filter question by showing the respondent a card that either lists or illustrates (depending on the degree of literacy in the country) the various items in the sub-category as a prompt. However, no past LSMS survey has tried this.

The list of foods used in the draft sub-module as an illustration came from the Pakistan LSMS questionnaire, with the addition of beer and other alcoholic beverages, which are important items of consumption in many countries, though not in Pakistan. Thus, the list is specific to Pakistan and includes items (dal, gur, and ghee) that may be unfamiliar and, thus, inappropriate to

list in other countries. As a result, the list also omits some other items that should be included in other countries (such as pork, cassava, yams, tomatoes, papayas, and bananas). The key point is that the list must be customized to reflect local patterns of food consumption.

Recall Period. The recall period used in this sub-module is the time since the interviewer's last visit to the household. This question presumes that the interviewer's last visit to the household was about two weeks before the interview on consumption, as was the case in the old prototypical fieldwork plan where each primary sampling unit was visited by the survey teams twice, two weeks apart, and different sections of the questionnaire administered in the two visits. In this plan, the two visit routine served a number of functions other than serving as the recall period, but, now that data entry operators often travel with the field teams rather than remaining in a regional office, the logistical reasons for the two separate visits are being eroded. Moreover, in many surveys, especially those that have shorter questionnaires than the full LSMS, only one visit is ever made to the primary sampling unit (PSU) and the entire questionnaire is canvassed in that visit. In this case, the recall should be changed from "since my last visit" to "in the last two weeks." In countries with high inflation rates or where the other expenditure surveys use a shorter reference period, survey designers may shorten the recall period to a week or to whatever period matches that of the other survey.

Barter. If barter is common in the country where the survey is being planned, it can be included in the wording of the purchase question. If it is very important, survey designers may wish to give it a question of its own. It will be particularly important to pilot test the wording of the question as this can often be awkward.

Quantity. The quantity question applies to the short recall period question so that, when a unit value is derived from this data, it refers to a specific time period. To have a unit value (quasi price) for some indeterminate month during the year is not very helpful where there is even modest inflation or seasonal variation in prices.

Ordering of Quantity and Expenditure. There is some debate about the proper ordering of these two questions. Essentially, the field test should be the guide. Expenditure has been placed first in the draft sub-module for two reasons. First, it is the most important piece of data to be collected. Second, collecting it first is likely to reduce the risk of ambiguity or misunderstanding on the part of the respondent. It is possible to imagine that, if questions were in the reverse order, a respondent might give the interviewer an answer that referred to the household's expenditure per unit of quantity rather than for the total purchase. Instead of "I spent 50 pesos on meat. I bought two kilos," the informant might answer "I bought two kilos" and "I paid 25 pesos." The respondent would mean 25 pesos for each kilo, not in total, and the true response would be misrecorded. In Pakistan, this kind of problem occurred often enough to call into question the accuracy of all of the short period data. However, in the Panamanian field test, the questions seemed to work better with the quantity question placed before the expenditure question.

Fuel. Fuel is placed in the same sub-module as food because it is the main category of non-food that is purchased in convenient, standard units. This follows the principle that, wherever quantities can be collected easily and accurately, they should be. Hence it is convenient, though

not usual, to put fuel in the food sub-module so that the follow-on questions on quantities will apply.

Home Production. There are several options about how to arrange the questions on home production. The option that has most commonly been used in previous LSMS surveys has been to place them either together with food purchases as shown here or in a separate sub-module on home production. Occasionally, the consumption of home-produced food has appeared in the agricultural module as part of the means by which a crop is disposed of. Since agriculture modules are becoming increasingly infrequent in LSMS surveys and since they may not always include crop disposal questions anyway, the following discussion concentrates on the first two options.

Whether the questions on households' consumption of home-produced food should be placed adjacent to the questions on their purchases of food or in a separate sub-module is an issue that will be affected by both the percentage of households that produce their own food and the range of goods produced in this way. If questions on home-produced goods are placed in a separate sub-module, it is simple to add a filter question, "has your household consumed any food produced at home?" Then it is possible to avoid asking a long list of inapplicable questions to those households that do not produce any food at home. This will be most appropriate when home production is not very common. Ultimately what works best should be determined by the field test. Do respondents find it easier to think about all of the sources of a single foodstuff together? (For example, I bought some tomatoes, I grew some tomatoes in my garden, or my co-worker gave me some tomatoes?) Or is it easier for them to think about their food budget in terms of the source of that food? (For example, when I shop I buy beans, tortillas and milk, but in my garden, I grow tomatoes, papaya, and bananas.) The decision about whether or not to put these questions in a separate sub-module will not materially affect the length of the interview, although it may take up more paper and make the physical questionnaire longer to put home production separately from purchased food.

It is not necessary to have a home production question for every food item in the list, since some are industrially manufactured items that cannot be made in people's homes. Even some items that are not industrial are not commonly produced in people's homes and can likewise be omitted from the list of home-produced items. In the draft of the sub-module in Part III, the boxes are blacked out in the home-production columns for items that are unlikely to be produced at home. If a separate page is used for home-produced foods, then the list on that page should apply only to those likely to be produced at home.

It is recommended that information about the quantity of food produced at home should be regarded as the most important piece of data to be gathered about home production of food. The quantity of a good is a factual, observable piece of information, although there are anecdotes about how difficult it has sometimes been for respondents to answer quantity questions about items that they harvest only one meal's worth at a time such as cassava. Because they never see the total cassava harvest at one time, they may have difficulty estimating its size. Questions about value are more hypothetical, since, by definition, the home-produced item did not pass through the market. Theoretically, a farmgate price would be too low and a market price too high. There seems to be no evidence as to which price the consumer of home-produced is likely to know more often or which answer he or she would give in response to a general question on the "value of

home production." The draft sub-module includes a general (ill-defined) question on the "value of home production" on the grounds that, for goods for which there are markets, the food purchases questions and/or community questionnaire gathers information on prices or unit values from food purchases and may gather data on farmgate prices in the agricultural module if there is one. Thus, the "value of home production" contributes a different set of information or at least on the aspect that the respondent feels is most pertinent.

Gifts. In some past LSMS surveys, the gifts section included the value of food received as payment in kind from employers. This is not included in this draft sub-module, because it already appears in the various employment sub-modules.

Use of Environmentally Provided Goods. If survey designers wish to try to put an explicit value on the use of all environmentally provided resources, the list of food items should include any specific food items that are likely to be gathered, fished, or hunted. In additional, the wording of the questions may be changed or additional questions added to clarify that these items are being encompassed.

Part C: Non-Food Consumption

Again, the list of items to be included in this sub-module will be country-specific and can usually be derived from the survey used to weight the CPI. The list is likely to contain more groups of items (for example, "clothing") than was the case for the food list (for example, "rice"). The non-food list should be designed with the following objectives in mind: (i) to cover all aspects of the household's budget that are not covered elsewhere in the household questionnaire; (ii) to do so in a logical manner that respondents find congenial; (iii) to gather information on specific items that may receive heavy subsidies or attract heavy taxes (for example, kerosene or gasoline or tobacco or alcohol); and, sometimes, (iv) to gather the data in a manner that will enable analysts to study intrahousehold issues.

For most items, it will not be practical to collect data on quantity (and, implicitly, unit values) due to the difficulties of establishing meaningful units, especially for groups of goods. For items where meaningful units can be established (usually fuel), data on the quantity consumed should be gathered.

Note that the boundary between consumption items and durable goods is somewhat fuzzy. Many of the items usually listed in the consumption module (and included in this draft sub-module) may actually last for more than a year. Kitchen equipment (including cups, forks, plates, and saucepans), furniture (including beds, tables, cupboards, chairs, and rugs), and linens (including sheets, towels, and blankets) all appeared in the consumption module of the Cote d'Ivoire questionnaire rather than in the durable goods module, even though all of these items were likely to last for more than a year. Nonetheless, there are so many different items that could be listed, that it seems pragmatic to measure their consumption via the flow into the household

rather than trying to enumerate the whole stock item by item and then to compute a use value for it.

The list of items in the draft sub-module is derived from several different questionnaires from previous LSMS surveys, principally the surveys in Jamaica and Nepal.

The same considerations as apply for food apply to the barter and gift of non-food goods and to non-food goods (such as firewood) gathered from the environment. Home production is theoretically of interest here as well but has rarely been specifically enumerated in past LSMS surveys. If survey designers decide that this is important, it can be handled in a manner similar to that for home-produced food.

Part D: Expenditures on Private Inter-household Transfers

Respondents may find it most logical to be asked questions about their income from and expenditures on inter-household transfers in the same place in the questionnaire. In this book, however, questions on household expenditures on private inter-household transfers are included here and those on income from inter-household transfers are included in the miscellaneous income in Chapter 20 where the annotations on the module are included. The two sub-modules were developed together and can be positioned adjacent to one another in the household questionnaire in a separate module.

Two versions of the sub-module are included. The short one is designed to get basic information when the consumption module is being shortened as much as possible and the study of private safety nets is not deemed important. The longer sub-module includes questions about the recipients and their relationship to the donor or head of the household and on the amounts, regularity, and purpose of the transfers. The answers to these questions supply analysts with a lot of information for studying transfers.

On question 12, it would be useful to get as much detail on the destination as can easily be coded, for example, to the district or county level. For both questions 11 and 12, codes should coincide with those used on the migration module. Questions 6 and 7 use the same codes as on the roster, which is why code 1 is missing (on the roster module it is for the head of household).

Part E: Durable Goods

The items to be included in the durable goods list should be those that last for substantially longer than a year and that are so large in relation to the household's standard of living that they can be separately enumerated and that respondents can accurately remember information about their purchase after several years have gone by. Thus, a car would meet this definition of a durable good, whereas a shirt would not, even though each may last for several years.

The durable goods page in this sub-module is divided into two blocks so that households can report on the value of two of the same kind of item (for example, two bicycles).

Most past LSMS questionnaires have included a list of a dozen or two different kinds of

durable goods, though the lists have usually been longer in the surveys fielded in the countries of the former Soviet Union. The most appropriate items to include in the durable goods list will vary from country to country. What is considered expensive enough to be a durable good will also vary from country to country. For example, cooking pots were on the durable list in the survey in Kagera, Tanzania, whereas the list in the Jamaican survey included satellite dishes. The most common durable goods may also vary by climate. In tropical countries, air conditioners or fans will often be on the list, whereas, in cold climates, various sorts of heaters will be listed. Also, culture matters. Jewelry, carpets, and guns were listed in Pakistan but are unlikely to be listed in the durable goods sub-module in many other countries.

Special Circumstances

This subsection provides survey designers with advice on how to deal with various special circumstances that they may face in planning and designing a survey in their particular country.

Dealing with Inflation. In those countries and during those times when inflation is high, it may be necessary to modify the questionnaire. (However, if inflation is very high, it is not clear how well these suggested modifications will work.)

First, the recall period should be shortened to the shortest period that is reasonable for the type of item in question. Thus, the recall period on food might change from the previous two weeks to the previous week. The "usual month" questions on food might be dropped altogether, since it would be unclear to which time period they referred, which would make it impossible to deflate the expenditures appropriately. The recall period on non-food items might be shortened from a year to three or six months. Shortening the recall periods may increase the variance of the estimates, but in any case, it would be impossible to interpret any means for data collected when prices were very different. Moreover, inflation itself will cause people to make more frequent purchases (so that the real value of their money does not diminish), so the tradeoff between biases in the mean and variance may be less than in those places where inflation is low.

The second modification that can be made to take inflation into account involves asking respondents about the dates when they made certain large purchases so that analysts can deflate these figures appropriately. Third, if a currency other than the national currency has become a *de facto* unit of account, then survey designers might allow respondents to give their answers in either the local or the international currency.

Credit. If the use of consumer credit is of particular analytical and policy interest in the country in question, then a short module on households' use of credit (particularly for purchasing food) could be inserted after the food sub-module, and questions on purchases on credit added to the durable goods sub-module as is suggested in Chapter 22 on credit.

Supporting Intrahousehold Analysis. If supporting intrahousehold analysis is a special goal of the survey, the consumption module can be re-organized so that at least some of the information is individual-specific. The main principle is to classify all items according to two criteria. The first criterion is whether they are consumed individually (like a taxi fare or a shirt) or jointly (like washing powder or the use of a television). The second criterion is whether it is easy

to distinguish whether the item was consumed by one household member rather than another. Food eaten at home is individually consumed, but, since it is usually purchased and prepared for the household as a whole, it is difficult to distinguish how much is consumed by each individual. On the other hand, it is easier to assign the consumption of food consumed in restaurants or from food stalls to particular individuals. After the items that are individually consumed and easily distinguished as being consumed by a given individual have been determined, these items can then be listed on a separate grid that the interviewer would fill out for each individual.

Keeping the Module as Short as Possible

It is important to keep the module to a reasonable length to avoid the risk of tiring or annoying the respondents with an overly long interview. However, there are relatively few options for shortening the consumption module, aside from using the shorter of the two versions of the sub-module on inter-household transfers. As explained in Part II, reducing the number of items or categories for which information is collected can easily lead to an underestimation of consumption. Also, getting a comprehensive measure of consumption requires inquiring about purchases, home production, and gifts of all commodities consumed by the household, so it is not easy to reduce the number of questions about each item.

There are a few questions that could be cut in the draft sub-modules, though this would result in a loss of important data in each case (which is why the questions are included in the draft sub-modules in the first place). Probably the most expendable question is the last of the series for durable goods -- question 7. Removing this question would mean that the valuation of durable goods would rest solely on the assumption that the average life of the good is twice the average age reported across all households.

Another possibility would be to reduce the number of questions on inter-household transfers. The questions that essential for calculating outflows are 1, 2, and 13-15. The answers to the other questions contribute to the understanding of why and to whom the transfers are made, but some of them could be dropped if studying such issues is of relatively low priority.

It would be possible to drop question 9 in the food sub-module, and instead to value home production using data from the expenditure questions and/or the community questionnaire. There is an element of risk in this, since households would no longer have the option to express their answers in value terms instead or as well as quantity terms, which they may have preferred found easier to do. Of course, this option is only available if there are questions on quantities in the food expenditure sub-module of consumption or if data on prices are gathered in the community questionnaire for all items on the home-produced list. Alternatively, survey designers could drop the quantity questions about purchases and home production (note that the quantity and the value questions on home production cannot both be dropped simultaneously). However, quantity is an important piece of data in its own right, so dropping these questions reduces analytical potential, most importantly it means that prices from some other sources are required to derive a calorie-based poverty line from the data set.

A final option would be to drop the dual recall periods in the food or the non-food sub-module. Doing so would be risky as, if something were to go wrong in the fieldwork, analysts

would be unable to use the data set to calculate what is arguably the single most important variable in the whole enterprise -- total household consumption. Because food is more important in the total than non-food, it is preferable to drop the dual recall periods for non-food items before dropping those for food items.

References

Ahmad, S. Ehtisham, and Nicholas H. Stern. 1991. The Theory and Practice of Tax Reform in Developing Countries Cambridge: Cambridge University Press

Atkinson, Anthony B. and Mickelwright. 1983. "On the Reliability of Income Data in the Family Expenditure Survey 1970–77," Journal of the Royal Statistical Society, Series A 146

Baker, Judy, 1996. Personal correspondence

Behrman, Jere R., and Anil B. Deolalikar. 1987. "Will Developing Country Nutrition Improve with Income? A Case Study for Rural South India" Journal of Political Economy 95

Bhalla, Surjit S. 1979. "Measurement Errors and the Permanent Income Hypothesis: Evidence from Rural India," American Economic Review, 69

Bhalla, Surjit S. 1980. "The Measurement of Permanent Income and its Application to Saving Behavior" Journal of Political Economy 88

Bhattacharyya, Nikhilesh. 1963. "On the Effects of Itemization in the Family Budget Schedule" Processed. Indian Statistical Institute: Calcutta

Biemer, Paul P., Robert M. Groves, Lars E. Lyberg, Nancy A. Mathiowetz, and Seymour Sudmanr (eds). 1991. Measurement Errors in Surveys Wiley: New York

Blaizeau, Didier, 1998, "Household Expenditure Surveys in the Seven UEMOA Countries," Processed. INSEE: Paris

Bouis, Howarth E. 1994. "The Effect of Income on Demand for Food in Poor Countries: Are Our Databases Giving us Reliable Estimates?" Journal of Development Economics, 44

Bouis, Howarth E. and Lawrence J. Haddad. 1992. "Are Estimates of Calorie-income Elasticities too High? A Recalibration of the Plausible Range" Journal of Development Economics, 39

Bourguignon, François, and Pierre-André Chiappori. 1992. "Collective Models of Household Behavior: an Introduction" European Economic Review, 36

Bourguignon, François, Martin J. Browning, Pierre-André Chiappori, and Valérie Lechene. 1993. "Intrahousehold Allocation of Consumption: a Model and Some Evidence from French Data" Annales d'Économie et de Statistique, 29

Bradburn, Norman M., Janellen Huttenlocher, and Larry Hedges. 1994. "Telescoping and Temporal memory" in Norbert Schwartz and Seymour Sudman (eds) Autobiographical Memory and the Validity of Retrospective Reports New York: Springer-Verlag

Branch, E. Raphael. 1994. "The Consumer Expenditure Survey: a Comparative Analysis" Monthly Labor Review, 47–55

Browning, Martin, François Bourguignon, Pierre-André Chiappori, and Valérie Lechene. 1994. "Income and Outcomes: a Structural Model of Intrahousehold Allocation" Journal of Political Economy, 102

Cavendish, William. 1998. "The Complexity of the Commons: Environmental Resource Demands in Rural Zimbabwe" Mimeo. Centre for the Study of African Economies, University of Oxford: UK

Coder, John. 1991. "Exploring Non-sampling Errors in the Wage and Salary Income Data from the March Current Population Survey" Processed. Household and Household Economic Statistics Division, Bureau of the Census: Washington DC

Cramer, Jan S. 1969. Empirical Econometrics Amsterdam: North-Holland

Dandekar, V. M., and N. Rath. 1971a. "Poverty in India: Dimensions and Trends" Economic and Political Weekly 6

Dandekar, V. M., and N. Rath. 1971b. Poverty in India Pune: Indian School of Political Economy

Deaton, Angus, 1997. The Analysis of Household Surveys: a Microeconometric Approach to Development Policy Baltimore, MD: Johns Hopkins University Press for the World Bank

Deaton, Angus S. 1988. "Rice Prices and Income Distribution in Thailand: a Non-parametric Analysis" Economic Journal 99 (Supplement)

Deaton, Angus S. and John Muellbauer. 1980. Economics and Consumer Behavior, Cambridge: Cambridge University Press

Deaton, Angus S. and Christina H. Paxson, 1998. "Economies of Scale, Household Size, and the Demand for Food" Journal of Political Economy 106

Deaton, Angus S. and Salman Zaidi. 1999. "Guidelines for Constructing Consumption Aggregates for Welfare Analysis" Processed. Princeton University and Development Research Group, World Bank: Washington DC

Eisenhower, Donna, Nancy A. Mathiowetz, and David Morganstein. 1991. "Recall Error: Sources and Bias Reduction Techniques," in Biemer et al Measurement Errors in Surveys Wiley: New York

Foley, M., 1996. Personal correspondence

Ghose, Suchismita and Nikhilesh Bhattacharyya. 1993. "Engel elasticities of clothing and other items," Sarvekshana, 17

Ghose, Suchismita and Nikhilesh Bhattacharyya. 1995. "Effect of Reference Period on Engel Elasticities of Clothing and Other Items: Further Results" Sankhya: The Indian Journal of Statistics 57, Series B

Ghosh, A. 1953. "A Note on the Accuracy of Family Budget Data with Reference to the Period of Recall." Calcutta Statistical Association Bulletin

Gibson, John. 1998. "How Robust are Poverty Comparisons to Changes in Household Survey Methods? A Test Using Papua New Guinean Data" Department of Economics, University of Waikato: New Zealand

Gieseman, Raymond. 1987. "The Consumer Expenditure Survey: Quality Control by Comparative Analysis" Monthly Labor Review, 8–13

Glewwe, P., 1987. "The Distribution of Welfare in Peru in 1985-86" Living Standards Measurement Study Working Paper No. 42. World Bank: Washington DC

Glewwe, P., and K.A. Twum-Baah, 1991. "The Distribution of Welfare in Ghana, 1987-88" Living Standards Measurement StudyWorking Paper No. 75. World Bank: Washington DC

Griliches, Zvi and Jerry A Hausman. 1986. "Errors in Variables in Panel Data" Journal of Econometrics, 31

Grootaert, Christiaan. 1986. "The Use of Multiple Diaries in a Household Expenditure Survey in Hong Kong" Journal of the American Statistical Association, 81

Grootaert, C., 1993. "The Evolution of Welfare and Poverty Under Structural Change and Economic Recession in Cote d'Ivoire, 1985-88" Policy Research Working Paper No. 1078. World Bank: Washington DC

Grosh, Margaret. 1997. "The Policymaking Uses of Multi-topic Household Survey Data: A Primer" World Bank Research Observer, 12

Grosh, Margaret and Juan Muñoz, 1996. "A Manual for Planning and Implementing the Living Standards Measurement Study Surveys" Living Standard Measurement Study Working Paper 126, World Bank: Washington DC

India, Government of. 1993. " Report of the Expert Group on Estimation of Proportion and Number of Poor" Perspective Planning Division, Planning Commission: New Delhi

International Monetary Fund. 1995. International Financial Statistics Yearbook. IMF: Washington DC

International Monetary Fund. 1996. International Financial Statistics Yearbook. IMF: Washington DC

Jacobs, Eva and Stephanie Shipp. 1993. "A History of the US Consumer Expenditure Survey: 1935–36 to 1988–89" Journal of Economic and Social Measurement, 19

Jolliffe, Dean and Kinnon Scott. 1995. "The Sensitivity of Measures of Household Consumption to Survey Design: Results from an Experiment in El Salvador" Processed. Policy Research Department, World Bank: Washington DC

Lanjouw, J. and P. Lanjouw, 1996. Draft. "Aggregation Consistent Poverty Comparison: Theory and Illustrations" Yale University and World Bank

Laraki, Karim. 1989. "Ending Food Subsidies: Nutritional, Welfare, and Budgetary Effects" World Bank Economic Review, 3

Mahalanobis, P.C. 1946. "Recent Experiments in Statistical Sampling in the Indian Statistical Institute" Journal of the Royal Statistical Society, 109

Mahalanobis, P. C. and S. B. Sen. 1954. "On Some Aspects of the Indian National Sample Survey" Bulletin of the International Statistical Institute, 34, 5

Martini, Alberto and Anna Ivanova. 1996. "The Design and Implementation of the Income and Expenditure Survey of Belarus" Processed. Urban Institute: Washington DC

McWhinney, Isabel and Harold E. Champion. 1974. "The Canadian Experience with Recall and Diary Methods in Consumer Expenditure Surveys" Annals of Economic and Social Measurement, 3/2

Minhas, B. S. 1988. "Validation of Large-scale Sample Survey Data: Case of NSS Household Consumption Expenditure" Sankhya Series B, 50, (Supplement)

Minhas, B. S. and S. M. Kansal. 1989. "Comparison of NSS and CSO Estimates of Private Consumption: Some Observations based on 1983 Data" The Journal of Income and Wealth 11

Musgrove, Philip. 1978. Consumer Behavior in Latin America Brookings Institution: Washington DC

Musgrove, Philip. 1979. "Permanent Household Income and Consumption in Urban South America" American Economic Review, 69

Neter, John and Joseph Waksburg. 1964. "A Study of Response Errors in Expenditure Data from Household Interviews" Journal of the American Statistical Association

Neter, John. 1970. "Measurement Errors in Reports of Consumer Expenditures" Journal of Marketing Research, 7

Newbery, David M. G. and Nicholas H. Stern (eds). 1987. The Theory of Taxation for Developing Countries Oxford University Press: New York

Paxson, Christina H., 1992, "Using Weather Variability to Estimate the Response of Savings to Transitory Income in Thailand" American Economic Review, 82

Paxson, Christina H. 1993. "Consumption and Income Seasonality in Thailand" Journal of Political Economy, 101

Reagan, Barbara B. 1954. "Condensed versus Detailed Schedule for Collection of Family Expenditure Data" Agricultural Research Service, US Department of Agriculture

Rubin, David C. and Alan D. Baddeley. 1989. "Telescoping is not Time Compression: a Model of the Dating of Autobiographical Events" Memory and Cognition, 17

Sahn, David. 1989. Seasonal Variation in Third World Agriculture: the Consequences for Food Security Baltimore: Johns Hopkins University Press for the International Food Policy Research Institute

Scott, Christopher and Ben Amenuvegbe. 1990. "Effect of Recall Duration on Reporting of Household Expenditures: an Experimental Study in Ghana" Social Dimensions of Adjustment in Sub-Saharan Africa Working Paper 6. World Bank: Washington DC

Scott, Christopher, Mary Strode, and Oliver Chinganya. 1998. "Estimation of Annual Expenditure from Monthly Survey Data" Processed

Scott, Kinnon. 1994. "Venezuela: Poverty Measurement with Multiple Data Sets." Draft. World Bank: Washington DC

Scott, Kinnon. 1997. Personal communication

Scott, Kinnon and Wlodzimierz Okrasa, 1998. "Analysis of Latvia Diary Experiment" Internal Memorandum. Development Research Group, World Bank: Washington, DC

Sen, Amartya K., 1999, Development as Freedom, New York. Knopf.

Silberstein, Adriana R. 1990. "First-wave Effects in the US Consumer Expenditure Interview Survey" Survey Methodology, 16

Silberstein, Adriana R., and Stuart Scott, 1991. "Expenditure Diary Surveys and their Associated Errors" in Biemer et al (eds) Measurement Errors in Surveys Wiley: New York

Silberstein, Adriana R. and Stuart Scott. 1992. "Seasonal Effects in the Reporting of Consumer Expenditure" Proceedings of the American Statistical Association Survey Research Section

Srinivasan, T. N. 1994. "Database for Development Analysis" Journal of Development Economics, 44

Statistical Institute and Planning Institute of Jamaica. 1994. Jamaica Survey of Living Conditions 1992, Kingston

Statistical Institute and Planning Institute of Jamaica. 1995. Jamaica Survey of Living Conditions 1993. Kingston

Statistical Institute and Planning Institute of Jamaica. 1996. Jamaica Survey of Living Conditions 1994, Kingston

Steele, Diane, 1998. "Ecuador Consumption Items" Internal memorandum. Development Research Group, World Bank: Washington, DC

Strauss, John and Duncan Thomas. 1995. "Human Resources: Empirical Modeling of Household and Family Decisions" in Jere Behrman and T. N. Srinivasan (eds) Handbook of Development Economics, 3a. Elsevier: Amsterdam

Subramanian, Shankar and Angus S. Deaton. 1996. "The Demand for Food and Calories" Journal of Political Economy, 104

Sudman, Seymour, and Robert Ferber. 1971. "Experiments in Obtaining Consumer Expenditures by Diary Methods" Journal of the American Statistical Association, 66

Sudman, Seymour, Norman N. Bradburn, and Norbert Schwarz. 1996. Thinking About Answers, Jossey-Bass: San Francisco

Swindale, Anne, and Punam Ohri-Vachaspati, 1997. "Household Food Consumption Indicator Guide" Draft. IMPACT Food Security and Nutrition Monitoring Project, International Science and Technology Institute: Washington DC

Tsoflias, Lynn. 1996. Personal communication

Tucker, Clyde. 1992. "The Estimation of Instrument Effects on Data Quality in the Consumer Expenditure Survey" Journal of Official Statistics, 8

Tucker, Clyde, and Claudette Bennett. 1988. "Procedural Effects in the Collection of Consumer Expenditure Information" Proceedings of the Section on Survey Research Methods, American Statistical Association

van der Gaag, Jacques. 1994. Personal communication

Webb, R., and G. Fernandez Baca. 1993. Peru en Numeros 1993. Anuario Estadistico. Cuanto. Lima, Peru

Wolpin, Kenneth I. 1982. "A New Test of the Permanent Income Hypothesis: the Impact of Weather on the Income and Consumption of Farm Households in India" International Economic Review, 23

World Bank. 1993 "Indonesia: Public Expenditures, Prices, and the Poor" Processed Report # 11293–IND, Indonesia Resident Mission Jakarta

World Bank, 1994a. "Guyana: Strategies for Reducing Poverty" Report 12861-GUA, Country Operations Division 2, Country Department III, Latin America and the Caribbean Region. Washington DC

World Bank, 1994b. "Kingdom of Morocco: Poverty, Adjustment & Growth. Volume II" Report 11918-MOR. Middle East and North Africa Region. Country Department I. Country Operations Division. Washington DC

World Bank, 1995a. "The Kyrgyz Republic. Poverty Assessment and Strategy" Report 14380-KG. Human Resources Division, Europe and Central Asia Country Department III Washington DC

World Bank, 1995b. "Republic of Nicaragua. Poverty Assessment. Volume II" Report 14038-NI. Country Operations Division. Country Department II. Latin America and the Caribbean Regional Office. Washington DC

World Bank, 1995c. "Tanzania Social Sector Review" Report 14039-TA. Poverty and Human Resources Division. Country Department II, Africa Region, World Bank Washington DC

World Bank, 1996. "Jamaica Survey of Living Conditions (JSLS) 1988-94 Basic Information." Poverty and Human Resources Division, Policy Research Department, World Bank: Washington DC

World Bank, 1997. "Romania, Poverty and Social Policy" Report No. 16467, Human Resources

Sector Operations Division, Country Department II, Europe and Central Asia region, World Bank: Washington DC

Zambia, Central Statistical Office. 1995. Household Budget Survey 1993/94 Lusaka

PART A: DAILY EXPENSES

MOST KNOWLEDGEABLE MEMBER

	1. In the past 7 days, has any member of your household spent money on any of the following items? PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH ITEM. ASK QUESTION 1 FOR ALL ITEMS BEFORE GOING TO 2.			2. How much did your household spend for [ITEM]?
		NO	**YES**	**CURRENCY**
1	Tobacco, cigarettes, cigars			
2	Newspapers or magazines			
3	Lottery tickets			
4	Fares for busses, trams, taxis, etc.			
5	Parking			
6	Regular worship			
7	Alms			
8	Shoeshines			

	3. How many [MEALS/SNACKS] were eaten by household members outside of the home during the past 7 days?	4. What was the value of these [MEALS] eaten outside of the home in the last 7 days?
	NUMBER	**CURRENCY**
Breakfast		
Lunch		
Dinner/supper		
Snack or beverages (including alcohol)		

PART B: FOOD AND FUEL

MOST KNOWLEDGEABLE MEMBER

				PURCHASES SINCE LAST VISIT				PURCHASES TYPICAL MONTH		HOME PRODUCTION				GIFTS
1. In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household consumed [FOOD] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13.				2. Have the members of your household bought any [FOOD] since my last visit, that is since *[DAY/DATE]* ? **YES.1 NO..2 (»5)**	3. How much did you pay in total? **CURRENCY**	4. How much did you buy? **AMOUNT**	**UNIT**	5. How many months in the past 12 months did your household purchase [FOOD]? IF NONE WRITE ZERO, » 7 **MONTHS**	6. How much do you usually spend on [FOOD] in one of the months that you purchase [FOOD]? **CURRENCY**	7. How many months in the past 12 months did your household consume [FOOD] that you grew or produced at home? IF NONE WRITE ZERO, » 10 **MONTHS**	8. How much did you consume in a typical month? **AMOUNT**	**UNIT**	9. What was the value of the [FOOD] you consumed in a typical month from your own production? **CURRENCY**	10. What is the total value of the [FOOD] consumed that you received as a gift over the past 12 months? IF NONE, WRITE ZERO **CURRENCY**
	NO	**YES**	**CODE**											
Wheat (grain)			1											
Wheat (flour or maida)			2											
Maize (flour or grain)			3											
Jawar/Bajra			4											
FIne rice (basmati)			5											
Coarse rice			6											
Other grains/cereals			7											
Gram			8											
Dal			9											
Groundnuts			10											
Liquid vegetable oils (dalda)			11											
Ghee; Desi ghee			12											
Fresh milk			13											
Yogurt and Lassi			14											
Milk Powder			15											
Baby Formula			16											
Sugar (refined)			17											
Gur/Desi sugar			18											
Mutton/lamb/goat			19											
Beef/Buffalo			20											

UNIT CODES:
USE CODES WITH STAR WHENEVER POSSIBLE

KILO*....1
GRAM*....2
POUND*...3
OUNCE*...4
LITER*...5
CUP*.....6
PINT*....7
QUART*...8
GALLON*..9
BUNCH...10
PECK....11
BUSHEL..12
TIN.....13
PIECES..14
DOZENS..15
BOTTLES.16

PART B: FOOD AND FUEL

MOST KNOWLEDGEABLE MEMBER

				PURCHASES SINCE LAST VISIT				PURCHASES TYPICAL MONTH		HOME PRODUCTION				GIFTS
1. In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household consumed [FOOD] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13.				2. Have the members of your household bought any [FOOD] since my last visit, that is since *[DAY/DATE]* ? **YES.1 NO..2 (»5)**	3. How much did you pay in total? **CURRENCY**	4. How much did you buy? **AMOUNT**	**UNIT**	5. How many months in the past 12 months did your household purchase [FOOD]? IF NONE WRITE ZERO, » 7 **MONTHS**	6. How much do you usually spend on [FOOD] in one of the months that you purchase [FOOD]? **CURRENCY**	7. How many months in the past 12 months did your household consume [FOOD] that you grew or produced at home? IF NONE WRITE ZERO, » 10 **MONTHS**	8. How much did you consume in a typical month? **AMOUNT**	**UNIT**	9. What was the value of the [FOOD] you consumed in a typical month from your own production? **CURRENCY**	10. What is the total value of the [FOOD] consumed that you received as a gift over the past 12 months? IF NONE, WRITE ZERO **CURRENCY**
	NO	**YES**	**CODE**											
Chicken and other poultry			21											
Eggs			22											
Fish			23											
Vegetables			24											
Melon			25											
Bananas			26											
Citrus Fruits			27											
Mango			28											
Other Fruits			29											
Canned Foods			30											
Bottled Beverages (Coca cola, roohafza,			31											
Beer			32											
Other alcoholic beverages			33											
Chapatti, Nan, other breads			34											
Fried items such as somosas, pakoras			35											
Biscuits and cakes			36											
Spices and condiments			37											
Tea			38											
Coffee			39											
Misc. other food expenses			40											

UNIT CODES:
USE CODES WITH STAR WHENEVER POSSIBLE

KILO*....1
GRAM*....2
POUND*...3
OUNCE*...4
LITER*...5
CUP*.....6
PINT*....7
QUART*...8
GALLON*..9
BUNCH...10
PECK....11
BUSHEL..12
TIN.....13
PIECES..14
DOZENS..15
BOTTLES.16

PART B: FOOD AND FUEL

MOST KNOWLEDGEABLE MEMBER

				PURCHASES SINCE LAST VISIT				PURCHASES TYPICAL MONTH		HOME PRODUCTION				GIFTS
1. In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household consumed [FOOD] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13.				2. Have the members of your household bought any [FOOD] since my last visit, that is since *[DAY/DATE]* ? **YES.1 NO..2 (»5)**	3. How much did you pay in total?	4. How much did you buy?		5. How many months in the past 12 months did your household purchase [FOOD]? IF NONE WRITE ZERO, » 7	6. How much do you usually spend on [FOOD] in one of the months that you purchase [FOOD]?	7. How many months in the past 12 months did your household consume [FOOD] that you grew or produced at home? IF NONE WRITE ZERO, » 10	8. How much did you consume in a typical month?		9. What was the value of the [FOOD] you consumed in a typical month from your own production?	10. What is the total value of the [FOOD] consumed that you received as a gift over the past 12 months? IF NONE, WRITE ZERO
	NO	**YES**	**CODE**		**CURRENCY**	**AMOUNT**	**UNIT**	**MONTHS**	**CURRENCY**	**MONTHS**	**AMOUNT**	**UNIT**	**CURRENCY**	**CURRENCY**
Firewood			41											
Charcoal			42											
Paraffin			43											
Cooking gas			44											

UNIT CODES:
USE CODES WITH STAR WHENEVER POSSIBLE

KILO*....1
GRAM*....2
POUND*...3
OUNCE*...4
LITER*...5
CUP*.....6
PINT*....7
QUART*...8
GALLON*..9
BUNCH...10
PECK....11
BUSHEL..12
TIN.....13
PIECES..14
DOZENS..15
BOTTLES.16

PART C: NON-FOOD

MOST KNOWLEDGEABLE MEMBER

				PURCHASES 30 DAYS		12 MONTHS	GIFTS 12 MONTHS	
1. In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household bought, spent money on or received gifts of any [ITEM] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13				2. Have the members of your household bought any [ITEM] in the last 30 days? **YES.1** **NO..2**	3. How much did you spend?	4. How much did your household spend for [ITEM] during the past 12 months?	5. Did you receive any [ITEM] as a gift during the past 12 months? **YES..1** **NO...2**	6. What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	NO	**YES**	**CODE**	**(»4)**	**CURRENCY**	**MONTHS**	**(»NEXT ITEM)**	**MONTHS**
Personal care items (soap, shampoo, toothpaste, etc.)			1					
Cosmetics			2					
Women's clothing			3					
Men's clothing			4					
Children's clothing			5					
Women's footwear			6					
Men's footwear			7					
Children's footwear			8					
Cloth and sewing supplies			9					
Tailoring expenses			10					
Laundry and dry cleaning			11					
Personal services (haircuts, shaving, manicures, etc.)			12					
Traditional remedies and over the counter remedies			13					

PART C: NON-FOOD

MOST KNOWLEDGEABLE MEMBER

1.				PURCHASES 30 DAYS		12 MONTHS	GIFTS 12 MONTHS	
				2.	3.	4.	5.	6.
In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household bought, spent money on or received gifts of any [ITEM] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13				Have the members of your household bought any [ITEM] in the last 30 days? **YES.1** **NO..2** **(»4)**	How much did you spend? **CURRENCY**	How much did your household spend for [ITEM] during the past 12 months? **MONTHS**	Did you receive any [ITEM] as a gift during the past 12 months? **YES..1** **NO...2** **(»NEXT ITEM)**	What is the value of all the [ITEM] that you received as a gift during the past 12 months? **MONTHS**
	NO	**YES**	**CODE**					
Modern medicines and health services (doctor fees, hospital charges, etc.)			14					
Books, stationery (excluding textbooks)			15					
Postal expenses, telegrams,			16					
Entertainment (cinema, cassette rentals, cultural and sporting events,			17					
Household cleaning articles (soap, washing powder, bleach, etc.)			18					
Kitchen supplies (napkins, matches, garbage bags, etc.)			19					
Toilet supplies (toilet paper, cleanser, etc.)			20					
Electrical items (light bulbs, cords, plugs, batteries, etc.)			21					
Repair and maintenance of household articles			22					
Household linens (sheets. blankets, towels, etc.)			23					
Small kitchen appliances (blender, mixer, etc.)			24					
Dishes (crockery, cutlery, glassware, etc.)			25					
Kitchen utensils (pots, pans, buckets, tools, etc.)			26					

PART C: NON-FOOD

MOST KNOWLEDGEABLE MEMBER

1.				PURCHASES 30 DAYS		12 MONTHS	GIFTS 12 MONTHS	
				2.	3.	4.	5.	6.
In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household bought, spent money on or received gifts of any [ITEM] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13				Have the members of your household bought any [ITEM] in the last 30 days? YES.1 NO..2	How much did you spend?	How much did your household spend for [ITEM] during the past 12 months?	Did you receive any [ITEM] as a gift during the past 12 months? YES..1 NO...2	What is the value of all the [ITEM] that you received as a gift during the past 12 months?
	NO	**YES**	**CODE**	**(»4)**	**CURRENCY**	**MONTHS**	**(»NEXT ITEM)**	**MONTHS**
Small electrical items (radio, walkman, watch, clock, etc.)			27					
Household tools			28					
Sports and hobby equipment			29					
Toys			30					
Musical instruments			31					
Vehicle repair, maintenance, parts and licenses (do not include gasoline)			32					
Repair and maintenance of the house			33					
Home improvements and additions			34					
Insurance (auto, property)			35					
Health insurance			36					
Membership fees			37					
Excursion, holiday (including travel and lodging)			38					
Charity, donations			39					

PART C: NON-FOOD

MOST KNOWLEDGEABLE MEMBER

1.				PURCHASES 30 DAYS		12 MONTHS	GIFTS 12 MONTHS	
				2.	3.	4.	5.	6.
In the following questions, I want to ask about all purchases made for your household, regardless of which person made them. Has your household bought, spent money on or received gifts of any [ITEM] during the past 12 months? Please exclude from your answer any [ITEM] purchased for processing or resale in a household enterprise. PUT A CHECK (✔) IN THE APPROPRIATE BOX FOR EACH FOOD ITEM. IF THE ANSWER TO Q.1 IS YES, ASK Q.2-13				Have the members of your household bought any [ITEM] in the last 30 days?	How much did you spend?	How much did your household spend for [ITEM] during the past 12 months?	Did you receive any [ITEM] as a gift during the past 12 months?	What is the value of all the [ITEM] that you received as a gift during the past 12 months?
				YES.1 NO..2 (»4)	CURRENCY	MONTHS	YES..1 NO...2 (»NEXT ITEM)	MONTHS
	NO	YES	CODE					
Income tax			40					
Land tax			41					
Housing and property taxes			42					
Gambling losses			43					
Cash losses			44					
Contributions to ROSCAs, tontins, Christmas clubs, etc.			45					
Deposits to savings accounts			46					
Legal or notary services			47					
Marriages, births, and other ceremonies			48					
Dowry or bride price			49					
Funeral expenses			50					

PART D: EXPENDITURES ON PRIVATE INTER-HOUSEHOLD REMITTANCES

MOST KNOWLEDGEABLE PERSON

1. During the past 12 months has any member of your household provided money or goods to persons who are not members of your household? For example for relatives living elsewhere, child support or alimony, or to friends or neighbors?

YES..1
NO...2(»NEXT SECTION)

	2. What are the names of the persons to whom household members have sent assistance during the past 12 months? LIST ALL NAMES BEFORE GOING TO 3-20 **NAME**	3. Is this assistance sent to [NAME OF RECIPIENT] given by a specific member of this household? **YES..1 NO...2 (»7)**	4. Which household member sends [NAME OF RECIPIENT]? COPY ID CODE OF PERSON FROM ROSTER **ID CODE**	5. Is [NAME OF RECIPIENT] related to [NAME OF DONOR]? **YES..1 NO...2 (»9)**	6. How is [NAME OF RECIPIENT] related to [NAME OF DONOR]? **RECIPIENT IS… OF DONOR SPOUSE.....2(»10) CHILD.....3(»8) GRANDCHILD.....4(»10) NIECE OR NEPHEW.....5(»10) PARENT.....6(»9) SISTER/BROTHER.....7(»10) SON/DAUGHTER-IN-LAW..8(»10) BROTHER/SISTER-IN LAW.....9(»10) GRAND FATHER/MOTHER.....10(»10) FATHER/MOTHER-IN-LAW.....11(»10) OTHER RELATIVE.....12(»10)**	7. How is [NAME OF RECIPIENT] related to the head of the household? **RECIPIENT IS… OF DONOR SPOUSE.....2(»10) CHILD.....3(»8) GRANDCHILD.....4(»10) NIECE OR NEPHEW.....5(»10) PARENT.....6(»9) SISTER/BROTHER.....7(»10) SON/DAUGHTER-IN-LAW....8(»10) BROTHER/SISTER-IN LAW..9(»10) GRAND FATHER/MOTHER.....10(»10) FATHER/MOTHER-IN-LAW.....11(»10) OTHER RELATIVE.....12(»10) NO RELATION.....13(»10)**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

PART D: EXPENDITURES ON PRIVATE INTER-HOUSEHOLD REMITTANCES

MOST KNOWLEDGEABLE PERSON

	8. COPY ID CODE OF RECIPIENT FROM ROSTER C **ID CODE**	9. COPY ID CODE OF RECIPIENT FROM ROSTER B **ID CODE**	10. Is [RECIPIENT] male or female? **MALE.....1** **FEMALE...2**	11. Does [RECIPIENT] live in this place? **YES..1** **NO...2** **(»14)**	12. What kind of place does [RECIPIENT] live in? **CAPITAL CITY.....1** **LARGE CITY.....2** **TOWN.....3** **VILLAGE....4**	13. In what region is this place? *CODE LIST OF AREAS USED ON MIGRATION PAGE*	14. How much money have members of the household sent to [RECIPIENT] in the past 12 months? **AMOUNT**	15. Has the household also given any assistance to [RECIPIENT] in the form of food or other goods? **YES..1** **NO...2** **(»17)**	16. What is the approximate value in cash of the assistance given in food or other goods? **AMOUNT**	17. Is the assistance sent to [RECIPIENT] provided for a specific reason? **YES..1** **NO...2** **(»19)**
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

PART D: EXPENDITURES ON PRIVATE INTER-HOUSEHOLD REMITTANCES

MOST KNOWLEDGEABLE PERSON

	18. What is the main reason why [RECIPIENT] was sent this assistance? **CHILD SUPPORT.....1 EDUCATIONAL EXPENSES.....2 MEDICAL EXPENSES.....3 WEDDING.....4 FUNERAL.....5 INVESTMENT IN HOUSEHOLD ENTERPRISE....6 PURCHASE OF A DURABLE GOOD.7 OTHER 8**	19. How many times per year does [RECIPIENT] receive this assistance?	20. Do you expect [RECIPIENT] to repay the assistance sent by this household? **YES..1 NO...2 (»NEXT)**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

PART D: EXPENDITURES ON PRIVATE INTER-HOUSEHOLD REMITTANCES - SHORT

MOST KNOWLEDGEABLE PERSON

1. During the past 12 months has any member of your household provided money or goods to persons who are not members of your household? For example for relatives living elsewhere, child support or alimony, or to friends or neighbors?

YES..1
NO...2(»NEXT SECTION)

	2. What are the names of the persons to whom household members have sent assistance during the past 12 months? LIST ALL NAMES BEFORE GOING TO 3-7 **NAME**	3. Is this assistance sent to [NAME OF RECIPIENT] given by a specific member of this household? **YES..1 NO...2 (»6)**	4. Which household member sends [NAME OF RECIPIENT]? COPY ID CODE OF PERSON FROM ROSTER **ID CODE**	5. Is [NAME OF RECIPIENT] related to [NAME OF DONOR]? **YES..1 NO...2**	6. How much money have members of the household sent to [RECIPIENT] in the past 12 months? **AMOUNT**	7. What is the approximate value in cash of the assistance given in food or other goods? **AMOUNT**			
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

PART E: DURABLE GOODS

MOST KNOWLEDGEABLE PERSON

1. Does your household own any of the following items?

DETERMINE WHICH DURABLES THE HOUSEHOLD OWNS BY ASKING Q.1. FOR EACH DURABLE OWNED, WRITE THE DESCRIPTION AND CODE IN THE SPACE PROVIDED UNDER Q.2, AND PROCEED TO ASK Q.3-7 FOR EACH ITEM.

ITEM	CODE	YES	NO
Stove	201		
Refrigerator	202		
Washing Machine	203		
Sewing/knitting machine	204		
Fan	205		
Television	206		
Video player	207		
Tape player/CD player	208		
Camera, video camera	209		
Bicycle	210		
Motorcycle/scooter	211		
Car or truck	212		

ITEM	2. LIST ALL THE ITEMS OWNED BY THE HOUSEHOLD, THEN PROCEED TO ASK Q.3-7. DESCRIPTION	CODE	3. How many years ago did you acquire this [ITEM]? YEARS	4. Did you purchase it or receive it as a gift or payment for services? PURCHASE..1 GIFT OR PAYMENT..2 (»6)	5. How much did you pay for it? »»7 CURRENCY	6. How much was it worth when you received it? CURRENCY	7. If you wanted to sell this [ITEM] today, how much would you receive? CURRENCY
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							