Simple Poverty Scorecard® Poverty-Assessment Tool Guatemala

Mark Schreiner and Gary Woller

7 May 2010

Un índice más actualizado que éste en Castellano está en `SimplePovertyScorecard.com`.
A more-current scorecard than this one is in English at `SimplePovertyScorecard.com`.

Abstract

The Simple Poverty Scorecard-brand poverty-assessment tool uses ten low-cost indicators from Guatemala's Guatemala's 2006 Living Standards Measurement Survey to estimate the likelihood that a household has expenditure below a given poverty line. Field workers can collect responses in about ten minutes. The scorecard's accuracy is reported for a range of poverty lines. The scorecard is a practical way for pro-poor programs in Guatemala to measure poverty rates, to track changes in poverty rates over time, and to segment clients for targeted services.

Acknowledgements

This paper was funded by the Consultative Group to Assist the Poorest under the CGAP/Ford Social Indicators Project. Data are from Guatemala's *Instituto Nacional de Estadística*. Thanks go to Malika Anand, Nigel Bigger, Frank DeGiovanni, Karen Foreit, Carolina García Domench, Kathy Lindert, Tony Sheldon, Carlos Sobrado, Don Sillers, and Jeff Toohig. This scorecard was re-branded by Grameen Foundation (GF) as a Progress out of Poverty Index® tool. The PPI® is a performance-management tool that GF promotes to help organizations achieve their social objectives more effectively. "Progress out of Poverty Index" and "PPI" are Registered Trademarks of Innovations for Poverty Action. "Simple Poverty Scorecard" is a Registered Trademark of Microfinance Risk Management, L.L.C. for its brand of poverty-assessment tools.

Simple Poverty Scorecard® Poverty-Assessment Tool

			Name	Identifier
Interview ID:				
Interview date:		Participant:		
Country:	GTM	Field agent:		
Scorecard:	001	Service point:		
Sampling wgt.:		Number of household members:		

Indicator	Possible response	Points	Total
1. How many household members are aged 13 or younger?	A. Five or more	0	
	B. Four	10	
	C. Three	12	
	D. Two	17	
	E. One	23	
	F. None	33	
2. Did all children ages 7 to 13 enroll for the current school year?	A. No	0	
	B. No children ages 7 to 13	2	
	C. Yes	6	
3. Can the female head/spouse read and write?	A. No	0	
	B. Yes	6	
	C. No female head/spouse	9	
4. Do any household members work mainly as casual laborers or domestic workers?	A. Yes	0	
	B. No	5	
5. What is the main construction material of the residence's floors?	A. Earth, sand, wood, parquet, or other	0	
	B. Mud bricks or cement slab	3	
	C. Formed cement bricks	9	
	D. Granite or ceramic	15	
6. Does the household have a refrigerator?	A. No	0	
	B. Yes	9	
7. Does the household have a gas or electric stove?	A. No	0	
	B. Yes	8	
8. Does the household have a stone mill?	A. Yes	0	
	B. No	3	
9. Does the household have an electric iron?	A. No	0	
	B. Yes	8	
10. If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any cows, bulls, calves, pigs, horses, burros, or mules?	A. No	0	
	B. Yes	3	
	C. No one works mainly in agriculture	4	

Score:

Simple Poverty Scorecard® Poverty-Assessment Tool Guatemala

1. Introduction

Pro-poor programs in Guatemala can use the Simple Poverty Scorecard poverty-assessment tool to estimate the likelihood that a household has expenditure below a given poverty line, to measure groups' poverty rates at a point in time, to track changes in groups' poverty rates over time, and to segment clients for targeted services.

The direct approach to poverty measurement via surveys is difficult and costly. As a case in point, Guatemala's 2006 Living Standards Measurement Survey (ENCOVI, *Encuesta Nacional de Condiciones de Vida*) runs more than 50 pages. The expenditure module includes hundreds of questions such as "In the past twelve months, did you or anyone in your household buy any bread for household consumption? If yes, in how many months did you buy bread? How much did you spend per month for bread? In the past 15 days, how much bread did you buy, and how much did you spend on it? In the past twelve months, did you or anyone in your household obtain any bread for household consumption, either from your own production or without buying it? If yes, in how many months did you obtain bread without buying it? In the past 15 days, how much bread did you obtain without buying it? When you obtain bread without buying it, how do you normally manage to obtain it? . . . Now, then in the past twelve months,

did you or anyone in your household buy any corn tortillas for household consumption? . . ."

In contrast, the indirect approach via the scorecard is simple, quick, and inexpensive. It uses ten verifiable indicators (such as "What is the main construction material of the residence's floors?" or "Does the household have a refrigerator?") to get a score that is highly correlated with poverty status as measured by expenditure from the exhaustive survey.

The scorecard differs from "proxy means tests" (Coady, Grosh, and Hoddinott, 2002) in that it is tailored to the capabilities and purposes not of national governments but rather of local, pro-poor organizations. The feasible poverty-measurement options for these local organizations are typically subjective and relative (such as participatory wealth ranking) or blunt (such as rules based on land-ownership or housing quality). These approaches may be costly, their results are not comparable across organizations nor countries, and their accuracy and precision are unknown.

The scorecard can serve several purposes. For example, a local pro-poor organization can use scoring to measure the share of its participants with expenditure below a poverty line such as the $1.25/day line at 2005 purchase-power parity (PPP) used by the Millennium Development Goals. USAID microenterprise partners can use the scorecard to report how many of its participants are among the poorest half of people below the national poverty line. An organization could also use the scorecard to measure movement across a poverty line over time (for example, Daley-Harris, 2009).

For all these uses, the scorecard is an expenditure-based, objective tool with known accuracy. While expenditure surveys are costly even for governments, many local pro-poor organizations can implement an inexpensive scorecard.

The statistical approach here aims to be understood by non-specialists. After all, if managers are to adopt the scorecard on their own and apply it to inform their decisions, they must first trust that it works. Transparency and simplicity build trust. Getting "buy-in" matters; proxy means tests and regressions on the "determinants of poverty" have been around for three decades, but they are rarely used to inform decisions by local pro-poor organizations. This is not because these tools do not work, but because they are presented (when they are presented at all) as tables of regression coefficients incomprehensible to non-specialists (with indicator names such as "`LGHHSZ_2`", negative points, and points with many decimal places). Thanks to the predictive-modeling phenomenon known as the "flat maximum", simple scorecards are about as accurate as complex ones.

The technical approach here is also innovative in how it associates scores with poverty likelihoods, in the extent of its accuracy tests, and in how it derives formulas for standard errors. Although the accuracy tests are simple and standard in statistical practice and in the for-profit field of credit-risk scoring, they have rarely been applied to poverty-assessment tools.

The scorecard is based on the 2006 Living Standards Measurement Survey (ENCOVI, the *Encuesta Nacional de Condiciones de Vida*) conducted by Guatemala's *Instituto Nacional de Estadística* (INE). Indicators are selected to be:

- Inexpensive to collect, easy to answer quickly, and simple to verify
- Strongly correlated with poverty
- Liable to change over time as poverty status changes

All points in the scorecard are zeroes or positive integers, and total scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line). Non-specialists can collect data and tally scores on paper in the field in five to ten minutes.

The scorecard can be used to estimate three basic quantities. First, it can estimate a particular household's "poverty likelihood", that is, the probability that the household has per-capita expenditure below a given poverty line.

Second, the scorecard can estimate the poverty rate of a group of households at a point in time. This is simply the average poverty likelihood among the households in the group.

Third, the scorecard can estimate changes in the poverty rate for a given group of households (or for two independent representative samples of households from the same population) between two points in time. This estimate is the change in the average poverty likelihood of the group(s) of households over time.

The scorecard can also be used for targeting services to poorer households. To help managers choose an appropriate targeting cut-off, this paper reports several measures of targeting accuracy for a range of possible cut-offs.

This paper presents a single scorecard whose indicators and points are derived from household expenditure data and Guatemala's national poverty line. Scores from this scorecard are calibrated to poverty likelihoods for nine poverty lines.

The scorecard is constructed and calibrated using a sub-sample of the data from the 2006 ENCOVI. Its accuracy is then validated on a different sub-sample from the 2006 ENCOVI as well as on the entire 2000 ENCOVI. While all three scoring estimators are unbiased when applied to the population from which they are derived (that is, they match the true value on average in repeated samples from the same population from which the scorecard is built), they are—like all predictive models—biased to some extent when applied to a different population.[1]

Thus, while the indirect scoring approach is less costly than the direct survey approach, it is also biased in practice. (The direct survey approach is unbiased by definition.) There is bias because scoring must assume that the future relationships between indicators and poverty will be the same as the relationships in the data used to build the scorecard. It must also assume that these relationships will be the same in all sub-groups as in the population as a whole.[2] Of course, these assumptions—ubiquitous and inevitable in predictive modeling—hold only partly.

---

[1] Important examples of "different populations" include nationally representative samples at another time or non-representative sub-groups (Tarozzi and Deaton, 2007).
[2] Over time, bias may also result from changes in the quality of data collection, from changes in the real value of poverty lines, from imperfect adjustment of poverty lines to account for differences in cost-of-living across time or geographic regions, or from sampling variation across surveys.

When applied to the 2006 validation sample for Guatemala with the national poverty line and $n = 16{,}384$, the difference between scorecard estimates of groups' poverty rates and the true rates at a point in time is –0.6 percentage points. Across all nine lines, the average absolute difference is 0.8 percentage points, and the maximum absolute difference is 2.8 percentage points. Because the 2006 validation sample is representative of the same population as the data that used to construct the scorecard, and because all the data come from the same time frame, the scorecard estimators are unbiased and these observed differences are due to sampling variation; the average difference would be zero if the 2006 ENCOVI were to be repeatedly redrawn and divided into sub-samples before repeating the entire scorecard-building and accuracy-testing process.

For $n = 16{,}384$, the 90-percent confidence intervals for these estimates are +/– 0.9 percentage points or less. For $n = 1{,}024$, these intervals are +/–3.2 percentage points or less.

When the scorecard built from the 2006 construction and calibration samples is applied to both the 2006 validation sample and the entire 2000 ENCOVI for the national line with $n = 16{,}384$ to measure change between two points in time, the difference between scorecard estimates and true values for changes in groups' poverty rates is –0.5 percentage points. This is remarkable accuracy because:

- The definition of urban/rural changed between 2000 and 2006
- The period between measurements is long (six years)
- The poverty rate for the national line decreased a lot (5.1 percentage points)
- Poverty changed unevenly across the population (the poverty rate for the food line decreased by 0.9 percentage points, because the cost of food—a large share of the budget of the poorest—increased much more than per-capita expenditure overall)

Section 2 documents data, poverty rates, and poverty lines for Guatemala. Sections 3 and 4 describe scorecard construction and offer practical guidelines for use. Sections 5 and 6 detail the estimation of households' poverty likelihoods and of groups' poverty rates at a point in time. Section 7 discusses estimating changes in poverty rates, and Section 8 covers targeting. Section 9 places the new scorecard here in the context of similar existing exercises for Guatemala. The final section is a summary.

2. Data and poverty lines

This section discusses the data used to construct and validate the scorecard. It also documents the poverty lines to which scores are calibrated.

2.1 Data

The scorecard is based on data from the 13,686 households in Guatemala's 2006 ENCOVI. This is the most recent national expenditure survey available for Guatemala. Households are randomly divided into three sub-samples (Figure 2):

- *Construction* for selecting indicators and points
- *Calibration* for associating scores with poverty likelihoods
- *Validation* for measuring accuracy on data not used in construction or calibration

In addition, the 7,276 households in the 2000 ENCOVI are used in the validation of estimates of changes in poverty rates for two independent samples between two points in time.

2.2 Poverty rates and poverty lines

2.2.1 Rates

As a general definition, the *poverty rate* is the share of people in a given group who live in households whose total household expenditure (divided by the number of members) is below a given poverty line.

Beyond this general definition, there two special cases, *household-level poverty rates* and *person-level poverty rates*. With household-level rates, each household is counted as if it had only one person, regardless of true household size, so all households are counted equally. With person-level rates (the "head-count index"), each household is weighted by the number of people in it, so larger households have greater weight.

For example, consider a group of two households, the first with one member and the second with two members. Suppose further that the first household has per-capita expenditure above a poverty line (it is "non-poor") and that the second household has per-capita expenditure below a poverty line (it is "poor"). The household-level rate counts both households as if they had only one person and so gives a poverty rate for the group of $1 \div (1 + 1) = 50$ percent. In contrast, the person-level rate weighs each household by the number of people in it and so gives a poverty rate for the group of $2 \div (1 + 2) = 67$ percent.

Whether the household-level rate or the person-level rate is most relevant depends on the situation. If an organization's "participants" include all the people in a household, then the person-level rate is relevant. Governments, for example, are concerned with the well-being of their people, regardless of how those people are arranged in households, so governments typically report person-level poverty rates.

If an organization has only one "participant" per household, however, then the household-level rate may be relevant. For example, if a microlender has only one borrower in a household, then it might want to report household-level poverty rates.

The scorecard is constructed using Guatemala's 2006 ENCOVI and household-level lines. Scores are calibrated to household-level poverty likelihoods, and accuracy is measured for household-level rates. This use of household-level rates reflects the belief that they are the most relevant for most pro-poor organizations.

Organizations can estimate person-level poverty rates by taking a household-size-weighted average of the household-level poverty likelihoods. It is also possible to construct a scorecard based on person-level lines, to calibrate scores to person-level likelihoods, and to measure accuracy for person-level rates, but it is not done here.

2.2.2 Poverty lines

Based on Guatemala's 2006 and 2000 ENCOVI, Figure 3 reports poverty rates and average poverty lines at both the household level and the person level. The 2006 lines were kindly supplied by Carlos Sobrado, and the 2000 lines are part of the ENCOVI database supplied by Guatemala's INE.

The derivation of Guatemala's official poverty lines begins with a food basket that provides an average minimum daily requirement for Calories (2,731 for 2000, and 2,732 for 2006, see World Bank, 2003 and 2009). The food line (*línea de pobreza extrema*) is defined as the cost—based on data in the 2000 and 2006 ENCOVI—of this food basket by urban/rural area and by department. For the country as a whole, the food line in 2006 averages GTQ8.76 per person per day, giving a poverty rate of 10.1 percent at the household level and 15.2 percent at the person level (Figure 3).

The national poverty line (here sometimes called "100% of the national line", corresponding to *la línea de pobreza general*) is obtained by multiplying the food line in a given area and department by the inverse of the average non-food share of total expenditure observed for all Guatemalan households whose food expenditure falls within +/–5 percent of the cost of the food basket (Ravallion, 1994). In 2006, the average all-Guatemala national poverty line was GTQ17.97, giving a poverty rate of 40.0 percent for households and 51.0 percent for people (Figure 3).

Because local pro-poor organizations in Guatemala may want to use different or various poverty lines, this paper calibrates scores from its single scorecard to poverty likelihoods for nine lines:

- National
- Food
- 150% of national
- 200% of national
- USAID "extreme"
- $1.25/day 2005 PPP
- $2.50/day 2005 PPP
- $3.75/day 2005 PPP
- $5.00/day 2005 PPP

The 150-percent line and the 200-percent line are multiples of the national line.

The USAID "extreme" line is defined as the median expenditure of people (not households) below the national line (U.S. Congress, 2002).

The $1.25/day line (2005 PPP) is derived from:

- 2005 PPP exchange rate for "individual consumption expenditure by households" (World Bank, 2008): GTQ4.54 per $1.00

- Price deflators from INE:[3] 984.43 for July to September 2000 (the dates of fieldwork for the 2000 ENCOVI), 1,506.19 for March to September 2006 (the dates of fieldwork for the 2006 ENCOVI), and 1,413.69 for 2005 on average

Using the formula in Sillers (2006), the $1.25/day 2005 PPP line for Guatemala as a whole in March to September 2006 is:

$$(\text{2005 PPP exchange rate}) \cdot \$1.25 \cdot \frac{\text{CPI}_{\text{March to Sept. 2006}}}{\text{CPI}_{\text{Ave. 2005}}} =$$

$$\left(\frac{\text{GTQ4.54}}{\$1.00}\right) \cdot \$1.25 \cdot \frac{1{,}506.19}{1{,}413.69} = \text{GTQ6.03}.$$

The 2000 all-Guatemala $1.25/day 2005 PPP line (GTQ3.89) is derived in the same way. The $2.50/day line, the $3.75/day line, and the $5.00/day line for 2000 and 2006 are multiples of the relevant $1.25/day lines.

The 2005 PPP lines above apply to Guatemala as a whole. These are adjusted for differences in cost-of-living by urban/rural and by department using the deflators provided with the 2000 and 2006 databases.

[3] `http://www.ine.gob.gt/descargas/EstadisticasDePrecios/IPC_EmpalmadoBase1983/IPC_EmpalmadoBase1983_sep_09.xls`, retrieved 26 December 2009.

3. Scorecard construction

For the Guatemala scorecard, about 115 potential indicators are initially prepared in the areas of:

- Family composition (such as household size)
- Education (such as school enrollment of children)
- Employment (such as whether any household members are casual laborers or domestic servants)
- Housing (such as the main construction material of the floors)
- Ownership of durable goods (such as refrigerators or electric irons)

Figure 4 lists all the candidate indicators, ranked by the entropy-based "uncertainty coefficient" that is a measure of how well the indicator predicts poverty on its own (Goodman and Kruskal, 1979).

The scorecard also aims to measure *changes* in poverty through time. This means that, when selecting indicators and holding other considerations constant, preference is given to more sensitive indicators. For example, ownership of an electric iron is probably more likely to change in response to changes in poverty than is the age of the male head/spouse.

The scorecard itself is built using the national poverty line and Logit regression on the construction sub-sample. Indicator selection uses both judgment and statistics (forward stepwise, based on "c"). The first step is to use Logit to build one scorecard for each candidate indicator. Each scorecard's accuracy is taken as "c", a measure of ability to rank by poverty status (SAS Institute Inc., 2004).

One of these one-indicator scorecards is then selected based on several factors

(Schreiner *et al.*, 2004; Zeller, 2004), including improvement in accuracy, likelihood of acceptance by users (determined by simplicity, cost of collection, and "face validity" in terms of experience, theory, and common sense), sensitivity to changes in poverty status, variety among indicators, and verifiability.

A series of two-indicator scorecards are then built, each based on the one-indicator scorecard selected from the first step, with a second candidate indicator added. The best two-indicator scorecard is then selected, again based on "c" and judgment. These steps are repeated until the scorecard has 10 indicators.

This algorithm is a Logit analogue to the familiar R^2-based stepwise with least-squares regression. It differs from naïve stepwise in that the criteria for selecting indicators include not only statistical accuracy but also judgment and non-statistical factors. The use of non-statistical criteria can improve robustness through time and helps ensure that indicators are simple and make sense to users.

The final step is to transform the Logit coefficients into non-negative integers such that total scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line).

The single scorecard here applies to all of Guatemala. Tests for Mexico and India (Schreiner, 2006a and 2006b), Sri Lanka (Narayan and Yoshida, 2005), and Jamaica (Grosh and Baker, 1995) suggest that segmenting scorecards by urban/rural does not improve targeting much, although such segmentation may improve the accuracy of estimated poverty rates (Tarozzi and Deaton, 2007).

4. Practical guidelines for scorecard use

The main challenge of scorecard design is not to squeeze out the last drops of accuracy but rather to improve the chances that scoring is actually used (Schreiner, 2005). When scoring projects fail, the reason is not usually technical inaccuracy but rather the failure of an organization to decide to do what is needed to integrate scoring in its processes and to learn to use it properly (Schreiner, 2002). After all, most reasonable scorecards predict tolerably well, thanks to the empirical phenomenon known as the "flat maximum" (Falkenstein, 2008; Hand, 2006; Baesens *et al.*, 2003; Lovie and Lovie, 1986; Kolesar and Showers, 1985; Stillwell, Barron, and Edwards, 1983; Dawes, 1979; Wainer, 1976; Myers and Forgy, 1963). The bottleneck is less technical and more human, not statistics but organizational change management. Accuracy is easier to achieve than adoption.

The scorecard here is designed to encourage understanding and trust so that users will want to adopt it and use it properly. Of course, accuracy is important, but so are simplicity, ease-of-use, and "face validity". Programs are more likely to collect data, compute scores, and pay attention to the results if, in their view, scoring does not make a lot of "extra" work and if the whole process generally seems to make sense.

To this end, the scorecard here fits on a single page. The construction process, indicators, and points are simple and transparent. "Extra" work is minimized; non-specialists can compute scores by hand in the field because the scorecard has:

- Only 10 indicators
- Only categorical indicators
- Simple weights (non-negative integers, and no arithmetic beyond addition)

A field worker using the paper scorecard would:

- Record participant identifiers
- Read each question from the scorecard
- Circle each response and its points
- Write the points in the far-right column
- Add up the points to get the total score
- Implement targeting policy (if any)
- Deliver the paper scorecard to a central office for data entry and filing

4.1 Quality control

Of course, field workers must be trained. The quality of outputs depends on the quality of inputs. If organizations or field workers gather their own data and if they believe that they have an incentive to exaggerate poverty rates (for example, if funders reward them for higher poverty rates), then it is wise to do on-going quality control via data review and random audits (Matul and Kline, 2003).[4] IRIS Center (2007a) and Toohig (2008) are useful nuts-and-bolts guides for planning, budgeting, training field

[4] If an organization does not want field workers to know the points, then they can use the version of Figure 1 without points and apply the points later at a central office.

workers and supervisors, logistics, sampling, interviewing, piloting, recording data, and controlling quality.

In particular, while collecting scorecard indicators is relatively easier than most alternatives, it is still absolutely difficult. Training and explicit definitions of terms and concepts in the scorecard is essential.[5] For example, one study in Nigeria finds distressingly low inter-rater and test-retest correlations for indicators as seemingly simple and obvious as whether the household owns an automobile (Onwujekwe, Hanson, and Fox-Rushby, 2006).

For self-reports in the first stage of targeting in a Mexican program, Martinelli and Parker (2007) find that "underreporting [of asset ownership] is widespread but not overwhelming, except for a few goods . . . [and] overreporting is common for a few goods, which implies that self-reporting may lead to the exclusion of deserving households" (pp. 24–25). Still, as done in the second stage of the Mexican targeting process, field agents can verify responses with a home visit and correct false reports.

[5] Appendix A is a guide for interpreting indicators in Guatemala's scorecard.

4.2 Implementation and sampling

In terms of implementation and sample design, an organization must make choices about:

- Who will do the scoring
- How scores will be recorded
- What participants will be scored
- How many participants will be scored
- How frequently participants will be scored
- Whether scoring will be applied at more than one point in time
- Whether the same participants will be scored at more than one point in time

The non-specialists who apply the scorecard with participants in the field can be:

- Employees of the organization
- Third-party contractors

Responses, scores, and poverty likelihoods can be recorded:

- On paper in the field and then filed at an office
- On paper in the field and then keyed into a database or spreadsheet at an office
- On portable electronic devices in the field and then downloaded to a database

The subjects to be scored can be:

- All participants
- A representative sample of all participants
- All participants in a representative sample of branches
- A representative sample of all participants in a representative sample of branches
- A representative sample of participants in a sub-group relevant for a particular issue

If not determined by other factors, the number of participants to be scored can be derived from sample-size formulas (presented later) for a desired confidence level and a desired confidence interval.

Frequency of application can be:

- At in-take of new clients only (precluding measuring change in poverty rates)
- As a once-off project for current participants (precluding measuring change)
- Once a year or at some other fixed time interval (allowing measuring change)
- Each time a field worker visits a participant at home (allowing measuring change)

When the scorecard is applied more than once in order to measure changes in poverty rates, it can be applied:

- With different sets of participants, each one representative of the same population
- With a single set of participants

A common bundle of implementation and design choices is illustrated by BRAC and ASA, two microlenders in Bangladesh (each with more than 7 million participants) who are applying the Simple Poverty Scorecard tool for Bangladesh (Chen and Schreiner, 2009a). Their design is that loan officers in a random sample of branches score all their clients each time they visit a homestead (about once a year) as part of their standard due diligence prior to loan disbursement. Responses in the field are recorded on paper before being sent to a central office to be entered into a database. The sampling plans of ASA and BRAC cover 50,000–100,000 participants each (far more than would be required to inform most relevant decisions at a typical pro-poor organization).

5. Estimates of household poverty likelihoods

The sum of scorecard points for a household is called the *score*. For Guatemala, scores range from 0 (most likely below a poverty line) to 100 (least likely below a poverty line). While higher scores indicate less likelihood of being below a poverty line, the scores themselves have only relative units. For example, doubling the score does not double the likelihood of being above a poverty line.

To get absolute units, scores must be converted to *poverty likelihoods*, that is, probabilities of being below a poverty line. This is done via simple look-up tables. For the example of the national line with the 2006 ENCOVI, scores of 45–49 have a poverty likelihood of 52.2 percent, and scores of 50–54 have a poverty likelihood of 25.3 percent (Figure 5).

The poverty likelihood associated with a score varies by poverty line. For example, scores of 45–49 are associated with a poverty likelihood of 52.2 percent for the national line but 2.2 percent for the food line.[6]

[6] Starting with Figure 5, many figures have 18 versions, one for each of the nine poverty lines for the 2006 scorecard applied to the 2006 validation sample, and one for each of the nine poverty lines for the 2006 scorecard applied to the 2000 ENCOVI. The tables are grouped by poverty line and by the data used for validation. Single tables that pertain to all poverty lines and/or years are placed with the tables for the national line and the 2006 validation sample.

5.1 Calibrating scores with poverty likelihoods

A given score is non-parametrically associated ("calibrated") with a poverty likelihood by defining the poverty likelihood as the share of households in the calibration sub-sample who have the score and who are below a given poverty line.

For the example of the national line (Figure 6), there are 5,560 (normalized) households in the calibration sub-sample with a score of 45–49, of whom 2,901 (normalized) are below the poverty line. The estimated poverty likelihood associated with a score of 45–49 is then 52.2 percent, as 2,901 ÷ 5,560 = 52.2 percent.

To illustrate further with the national line and a score of 50–54, there are 6,145 (normalized) households in the calibration sample, of whom 1,557 (normalized) are below the line (Figure 6). Thus, the poverty likelihood for this score is 1,557 ÷ 6,145 = 25.3 percent.

The same method is used to calibrate scores with estimated poverty likelihoods for all nine poverty lines.

Figure 7 shows, for all scores, the likelihood that expenditure falls in a range demarcated by two adjacent poverty lines. For example, the daily expenditure of someone with a score of 45–49 falls in the following ranges with probability:

- 0.5 percent below the $1.25/day 2005 PPP line
- 1.7 percent between the $1.25/day 2005 PPP and the food lines
- 9.6 percent between the food and the USAID "extreme" lines
- 3.8 percent between the USAID "extreme" and the $2.50/day 2005 PPP lines
- 36.6 percent between the $2.50/day 2005 PPP and the national lines
- 26.7 percent between the national and the $5.00/day 2005 PPP lines
- 4.2 percent between the $5.00/day 2005 PPP and 150% of the national lines
- 12.6 percent between 150% and 200% of the national lines
- 4.3 percent above 200% of the national line

Even though the scorecard is constructed partly based on judgment, this calibration process produces poverty likelihoods that are objective, that is, derived from survey data on expenditure and quantitative poverty lines. The poverty likelihoods would be objective even if indicators and/or points were selected without any data at all. In fact, objective scorecards of proven accuracy are often based only on judgment (Fuller, 2006; Caire, 2004; Schreiner *et al.*, 2004). Of course, the scorecard here is constructed with both data and judgment. The fact that this paper acknowledges that some choices in scorecard construction—as in any statistical analysis—are informed by judgment in no way impugns the objectivity of the poverty likelihoods, as this depends on using data in score calibration, not on using data (and nothing else) in scorecard construction.

Although the points in Guatemala's scorecard are transformed coefficients from a Logit regression, scores are not converted to poverty likelihoods via the Logit formula of

2.718281828^{score} x $(1+ 2.718281828^{score})^{-1}$. This is because the Logit formula is esoteric and difficult to compute by hand. Non-specialists find it more intuitive to define the poverty likelihood as the share of households with a given score in the calibration sample who are below a poverty line. In the field, this means that converting scores to poverty likelihoods requires no arithmetic at all, just a look-up table. This non-parametric calibration can also improve accuracy, especially with large calibration samples.

5.2 Accuracy of estimates of households' poverty likelihoods

As long as the relationship between indicators and poverty does not change and as long as the scorecard is applied to households who are representative of the same population from which the scorecard was constructed, this calibration process produces unbiased estimates of poverty likelihoods. *Unbiased* means that in repeated samples from the same population, the average estimate matches the true poverty likelihood. The scorecard also produces unbiased estimates of poverty rates at a point in time, as well as unbiased estimates of changes in poverty rates between two points in time.[7]

But the relationship between indicators and poverty does change with time and also across sub-groups in Guatemala's population, so the scorecard will generally be biased when applied after the end date of fieldwork for the 2006 ENCOVI (as it must

[7] This follows because these estimates of groups' poverty rates are linear functions of the unbiased estimates of households' poverty likelihoods.

be applied in practice) or when applied with non-nationally representative groups (as it will be applied by local pro-poor organizations).

How accurate are estimates of households' poverty likelihoods, given the assumption of representativeness? To check, the scorecard is applied to 1,000 bootstrap samples of size $n = 16{,}384$ from the 2006 validation sub-sample. Bootstrapping entails (Efron and Tibshirani, 1993):

- Score each household in the validation sample
- Draw a new sample *with replacement* from the validation sample
- For each score, compute the true poverty likelihood in the new sample, that is, the share of households with the score who have expenditure below a poverty line
- For each score, record the difference between the estimated poverty likelihood (Figure 5) and the true poverty likelihood in the new sample
- Repeat the previous three steps 1,000 times
- For each score, report the average difference between estimated and true poverty likelihoods across the 1,000 samples
- For each score, report the two-sided interval containing the central 900, 950, or 990 differences between estimated and true poverty likelihoods

For each score range and for $n = 16{,}384$, Figure 8 shows the average difference between estimated and true poverty likelihoods as well as confidence intervals for the differences.

For the national line in the 2006 validation sample, the average poverty likelihood across bootstrap samples for scores of 45–49 is too low by 0.4 percentage points (Figure 8). For scores of 50–54, the estimate is too low by 19.4 percentage points.[8]

[8] These differences are not zero, despite the estimator's unbiasedness, because the scorecard comes from a single sample. The average difference by score would be zero if

The 90-percent confidence interval for the differences for scores of 45–49 is +/–3.4 percentage points (Figure 8). This means that in 900 of 1,000 bootstraps, the difference between the estimate and the true value is between –3.8 and +3.0 percentage points (because –0.4 – 3.4 = –3.8, and –0.4 + 3.4 = +3.0). In 950 of 1,000 bootstraps (95 percent), the difference is –0.4 +/–4.0 percentage points, and in 990 of 1,000 bootstraps (99 percent), the difference is –0.4 +/–5.3 percentage points.

For almost all scores, Figure 8 shows differences—some of them large—between estimated poverty likelihoods and true values. This is because the validation sub-sample is a single sample that—thanks to sampling variation—differs in distribution from the construction/calibration sub-samples and from Guatemala's population. In addition, when the 2006 scorecard is applied to the 2000 ENCOVI, differences are due in part to changes over time in the relationships between indicators and poverty. For targeting, however, what matters is less the differences across all score ranges and more the differences in score ranges just above and below the targeting cut-off. This mitigates the effects of bias and sampling variation on targeting (Friedman, 1997). Section 8 below looks at targeting accuracy in detail.

Of course, if estimates of groups' poverty rates are to be usefully accurate, then errors for individual households must largely balance out. This is generally the case, as discussed in the next section.

---

samples were repeatedly drawn from the population and split into sub-samples before repeating the entire construction and calibration process.

Another possible source of bias is overfitting. By construction, the scorecard here is unbiased, but it may still be *overfit* when applied after the September 2006 end of field work for the 2006 ENCOVI. That is, the scorecard may fit the data from the 2006 ENCOVI so closely that it captures not only some real patterns but also some random patterns that, due to sampling variation, show up only in the 2006 ENCOVI. Or the scorecard may be overfit in the sense that it becomes biased as the relationships between indicators and poverty change through time. Finally, the scorecard could also be overfit if it is not robust when applied to samples from non-nationally representative sub-groups.

Overfitting can be mitigated by simplifying the scorecard and by not relying only on data but rather also considering experience, judgment, and theory. Of course, the scorecard here does this. Bootstrapping scorecard construction—which is not done here—can also mitigate overfitting by reducing (but not eliminating) dependence on a single sampling instance. Combining scorecards can also help, at the cost of complexity.

In any case, most errors in individual households' likelihoods cancel out in the estimates of groups' poverty rates (see later sections). Furthermore, much of the differences between scorecard estimates and true values may come from non-scorecard sources such as changes in the relationship between indicators and poverty, sampling variation, changes in poverty lines, inconsistencies in data quality across time, and inconsistencies/imperfections in cost-of-living adjustments across time and geographic regions. These factors can be addressed only by improving data quality and quantity

(which is beyond the scope of the scorecard), by updating data, or by reducing overfitting (which likely has limited returns, given the scorecard's parsimony).

6. Estimates of a group's poverty rate at a point in time

A group's estimated poverty rate at a point in time is the average of the estimated poverty likelihoods of the individual households in the group.

To illustrate, suppose a program samples three households on Jan. 1, 2010 and that they have scores of 20, 30, and 40, corresponding to poverty likelihoods of 91.7, 83.0, and 60.3 percent (national line, Figure 5). The group's estimated poverty rate is the households' average poverty likelihood of $(91.7 + 83.0 + 60.3) \div 3 = 78.3$ percent.[9]

6.1 Accuracy of estimated poverty rates at a point in time

How accurate is this estimate? For a range of sample sizes, Figure 10 reports average differences between estimated and true poverty rates as well as precision (confidence intervals for the differences) for the Guatemala scorecard applied to 1,000 bootstrap samples from the 2006 validation sample and from the 2000 ENCOVI.

Summarizing Figure 10 across poverty lines and years for $n = 16{,}384$, Figure 9 shows that the absolute differences between the estimated poverty rate and the true rate for the 2006 scorecard applied to the 2006 validation sample are 2.8 percentage points or less. The average absolute difference across the nine poverty lines for the 2006 validation sample is 0.8 percentage points.

[9] The group's poverty rate is *not* the poverty likelihood associated with the average score. Here, the average score is $(20 + 30 + 40) \div 3 = 30$, and the poverty likelihood associated with the average score is 83.0 percent. This is not the 78.3 percent found as the average of the three poverty likelihoods associated with each of the three scores.

For the national line and the 2006 Guatemala scorecard applied to the 2000 ENCOVI, the largest absolute difference is 2.7 percentage points, and the average absolute difference across the nine poverty lines is 1.1 percentage points.

In terms of precision, the 90-percent confidence interval for a group's estimated poverty rate at a point in time in 2006 or 2000 with $n = 16{,}384$ is +/–0.9 percentage points or less (Figure 9). This means that in 900 of 1,000 bootstraps of this size, the absolute difference between the estimate and the average estimate is 0.9 percentage points or less.

In the specific case of the national line and the 2006 validation sample, 90 percent of all samples of $n = 16{,}384$ produce estimates that differ from the true value in the range of $-0.6 + 0.4 = -0.2$ to $-0.6 - 0.4 = -1.0$ percentage points. This is because –0.6 is the average difference and +/–0.4 is its 90-percent confidence interval. The average difference is –0.6 because the average scorecard estimate is too low by 0.6 percentage points; it tends to estimate a poverty rate of 40.1 percent for the 2006 validation sample, but the true value is 40.7 percent (Figure 2).

The differences between estimates and true values are slightly larger for the 2006 scorecard applied to the 2000 ENCOVI than to the 2006 ENCOVI (Figure 9). Part of these differences is due to sampling variation across survey rounds and in the division of the 2006 ENCOVI into three sub-samples, as well as small design differences across the two ENCOVI rounds. Some differences are due to changes over time in the

relationships between indicators and poverty. Estimates of poverty rates at a point in time will be most accurate for periods that resemble 2006.

6.2 Standard-error formula for estimates of poverty rates at a point in time

How precise are the point-in-time estimates? Because they are averages, the estimates have a Normal distribution and can be characterized by their average difference vis-à-vis true values, along with the standard error of the average difference.

To derive a formula for the standard errors of estimated poverty rates at a point in time for indirect measurement via scorecards (Schreiner, 2008a), note that the textbook formula (Cochran, 1977) that relates confidence intervals with standard errors in the case of direct measurement of poverty rates is $c = +/- z \cdot \sigma$, where:

c is a confidence interval as a proportion (*e.g.*, 0.02 for +/–2 percentage points),

z is from the Normal distribution and is $\begin{cases} 1.64 \text{ for confidence levels of 90 percent} \\ 1.96 \text{ for confidence levels of 95 percent} \\ 2.58 \text{ for confidence levels of 99 percent} \end{cases}$,

σ is the standard error of the estimated poverty rate, that is, $\sqrt{\frac{p \cdot (1-p)}{n}}$,

p is the proportion of households below the poverty line in the sample, and

n is the sample size.

For example, with a sample $n = 16{,}384$, 90-percent confidence ($z = 1.64$), and a poverty rate p of 40.7 percent (the true rate in the 2006 validation sample for the national line in Figure 2), the confidence interval c is

$$+/- z \cdot \sqrt{\frac{p \cdot (1-p)}{n}} = +/- 1.64 \cdot \sqrt{\frac{0.407 \cdot (1-0.407)}{16{,}384}} = +/–0.629 \text{ percentage points.}$$

The scorecard, however, does not measure poverty directly, so this formula is not applicable. To derive a formula for the Guatemala scorecard, consider Figure 10, which reports empirical confidence intervals c for the differences for the scorecard applied to 1,000 bootstrap samples of various sample sizes from a validation sample. For $n =$ 16,384, the national line, and the 2006 validation sub-sample, the 90-percent confidence interval is +/–0.445 percentage points.[10] Thus, the ratio of confidence intervals with the scorecard and with direct measurement is $0.445 \div 0.629 = 0.71$.

Now consider the same case, but with $n = 8{,}192$. The confidence interval under direct measurement is $+/- 1.64 \cdot \sqrt{\frac{0.407 \cdot (1-0.407)}{8{,}192}} = +/–0.890$ percentage points. The empirical confidence interval with the Guatemala scorecard for the national line (Figure 10) is +/–0.610 percentage points. Thus for $n = 8{,}192$, the ratio is $0.610 \div 0.890 = 0.69$.

This ratio of 0.69 for $n = 8{,}192$ is not far from the ratio of 0.71 for $n = 16{,}384$. Indeed, across all sample sizes of 256 or more in Figure 10, the average ratio turns out to be 0.70, implying that confidence intervals for indirect estimates of poverty rates via the Guatemala scorecard and the national line are about 30 percent narrower than

[10] Due to rounding, Figure 10 displays 0.4, not 0.445.

those for direct estimates. This 0.70 appears in Figure 9 as the "α factor" because if α = 0.70, then the formula relating confidence intervals c and standard errors σ for the Guatemala scorecard is $c = +/- z \cdot \alpha \cdot \sigma$. The standard error σ for point-in-time estimates of poverty rates via scoring is $\alpha \cdot \sqrt{\frac{p \cdot (1-p)}{n}}$.

In general, α could be more or less than 1.00. When α is less than 1.00, it means that the scorecard is more precise than direct measurement. This occurs in eight of the nine of the cases for the 2006 validation sample in Figure 9. For the 2000 ENCOVI, α is less than 1.00 for two of the nine lines, probably reflecting the greater difficulty in estimating poverty rates six years away.

The formula relating confidence intervals to standard errors for the scorecard can be rearranged to give a formula for determining sample size n before measurement.[11] If $\hat{p}$ is the expected poverty rate before measurement, then the formula for n based on the desired confidence level that corresponds to z and the desired confidence interval $+/-c$ under the scorecard is $n = \left(\frac{\alpha \cdot z}{c}\right)^2 \cdot \hat{p} \cdot (1-\hat{p})$.

To illustrate how to use this, suppose $c = 0.03490$ and $z = 1.64$ (90-percent confidence), and $\hat{p} = 0.396$ (the average poverty rate for the national line in the 2006

[11] IRIS Center (2007a and 2007b) says that a sample size of $n = 300$ is sufficient for reporting estimated poverty rates to USAID. If a scorecard is as precise as direct measurement, if the expected (before measurement) poverty rate is 50 percent, and if the confidence level is 90 percent, then $n = 300$ implies a confidence interval of +/–2.2 percentage points. In fact, USAID has not specified confidence levels nor intervals. Furthermore, the expected poverty rate may not be 50 percent, and the scorecard could be more or less precise than direct measurement.

construction and calibration sub-samples, Figure 2). Then the formula gives

$n = \left(\frac{0.70 \cdot 1.64}{0.03490}\right)^2 \cdot 0.396 \cdot (1 - 0.396) = 259$, quite close to the sample size of 256 observed for these parameters in Figure 10.

Of course, the α factors in Figure 9 are specific to Guatemala, its poverty lines, its poverty rates, and this scorecard. The method for deriving the formulas, however, is valid for any poverty-assessment tool following the approach in this paper.

In practice after the end of the ENCOVI fieldwork in September 2006, an organization would select a poverty line (say, the national line), select a desired confidence level (say, 90 percent, or $z = 1.64$), select a desired confidence interval (say, +/–2.0 percentage points, or $c = 0.02$), make an assumption about $\hat{p}$ (perhaps based on a previous measurement such as the 40.0 percent average for the national line in the 2006 ENCOVI in Figure 2), look up α (here, 0.70), assume that the scorecard will still work in the future and/or for non-nationally representative sub-groups,[12] and then compute the required sample size. In this illustration,

$$n = \left(\frac{0.70 \cdot 1.64}{0.02}\right)^2 \cdot 0.400 \cdot (1 - 0.400) = 791.$$

[12] This paper reports accuracy for the scorecard applied to the 2006 validation sample and to the 2000 ENCOVI, but it cannot test accuracy for later years or for other groups. Performance will deteriorate with time to the extent that the relationship between indicators and poverty changes.

7. Estimates of changes in group poverty rates over time

The change in a group's poverty rate between two points in time is estimated as the change in the average poverty likelihood of the households in the group.

7.1 Warning: Change is not impact

Scoring can estimate change. Of course, change could be for the better or for the worse, and scoring does not indicate what caused change. This point is often forgotten, confused, or ignored, so it bears repeating: the scorecard simply estimates change, and it does not, in and of itself, indicate the reason for the change. In particular, estimating the impact of program participation on poverty status requires knowing what would have happened to participants if they had not been participants. Knowing this requires either strong assumptions or a control group that resembles participants in all ways except participation. To belabor the point, the scorecard can help estimate program impact only if there is some way to know what would have happened in the absence of the program. And that information must come from somewhere beyond the scorecard.

7.2 Calculating estimated changes in poverty rates over time

Consider the illustration begun in the previous section. On Jan. 1, 2010, a program samples three households who score 20, 30, and 40 and so have poverty likelihoods of 91.7, 83.0, and 60.3 percent (national line, Figure 5). The group's baseline

estimated poverty rate is the households' average poverty likelihood of (91.7 + 83.0 + 60.3) ÷ 3 = 78.3 percent.

After baseline, two sampling approaches are possible for the follow-up round:

- Score a new, independent sample, measuring change by cohort across samples
- Score the same sample at follow-up as at baseline

By way of illustration, suppose that a year later on Jan. 1, 2011, the program samples three additional households who are in the same cohort as the three households originally sampled (or suppose that the program scores the same three original households a second time) and finds that their scores are now 25, 35, and 45 (poverty likelihoods of 90.0, 70.3, and 52.2 percent, national line, Figure 5). Their average poverty likelihood at follow-up is (90.0 + 70.3 + 52.2) ÷ 3 = 70.8 percent, an improvement of 78.3 – 70.8 = 7.5 percentage points.[13]

This suggests that about one of 13 participants crossed the poverty line in 2010. (This is a net figure; some people start above the line and end below it, and vice versa.) Among those who started below the line, about one in ten (7.5 ÷ 78.3 = 9.6 percent) ended up above the line. Of course, the scorecard does not reveal the reasons for this change.

[13] Of course, such a huge reduction in poverty is unlikely in a year's time, but this is just an example to show how the scorecard can be used to estimate change.

7.3 Estimated changes in poverty rates in Guatemala

Given the Guatemala scorecard built from the construction and calibration samples of the 2006 ENCOVI, an estimate of the change in the poverty rate is the difference between the estimated poverty rate in the 2006 validation sample and the estimated poverty rate in the 2000 ENCOVI.

In Figure 11 (summarizing Figure 12 across poverty lines), the difference between this estimate and the true value for the national line is –0.5 percentage points; the scorecard estimates a change of –5.6 percentage points, when the true change was –5.1 percentage points. Across all nine lines, the average absolute estimated difference is 1.5 percentage points, while the average true difference is –3.0 percentage points (Figure 2). Thus, the estimate captures about two-thirds of the true change.

This accuracy is remarkable, for several reasons. First, the definition of urban/rural changed between 2000 and 2006; given that poverty lines are defined partly in terms of urban/rural, this change makes any estimate more likely to be off. Second, the six years between measurements allows for the possibility of large changes in the relationships between scorecard indicators and poverty. Third, the large decrease in the poverty rate (5.1 percentage points at the national line) makes an accuracy more difficult. Fourth, the uneven changes in poverty across the population also increase difficulty. For example, the poverty rate at the food line fell by 0.9 percentage points, as the cost of food—a large share of the budget of the poorest—increased much more than

per-capita expenditure overall. At the same time, poverty rates fell sharply for higher poverty lines.

In terms of precision with $n = 16{,}384$, the 90-percent confidence interval for the estimate change is +/–1.1 percentage points or less.

Because the scorecard estimate is unbiased, these differences are due to sampling variation, changes in data collection, changes in the relationship between indicators and poverty, and changes in poverty lines. The size of the differences here, however, are as small or smaller than in most other tests (Schreiner 2010, 2009a, 2009b, 2009c, 2009d, 2009e, 2008a, 2008b; Schreiner and Woller, 2010; Chen and Schreiner, 2009a and 2009b; Mathiassen, 2008).

7.4 Accuracy for estimated change in two independent samples

For two equal-sized independent samples, the same logic as in the previous section can be used to derive a formula relating the confidence interval c with the standard error σ of a scorecard's estimate of the change in poverty rates over time:

$$c = +/- z \cdot \sigma = +/- z \cdot \alpha \cdot \sqrt{\frac{2 \cdot p \cdot (1 - p)}{n}} \, .$$

z, c, and p are defined as above, n is the sample size at both baseline and follow-up,[14] and α is the average (across a range of bootstrapped sample sizes) of the ratio of

[14] This means that, for a given precision and with direct measurement, estimating the change in a poverty rate over time requires four times as many measurements (not twice as many) as does estimating a poverty rate at a point in time.

the observed confidence intervals from a scorecard and the theoretical confidence intervals from the textbook formula for direct measurement for two equal-sized independent samples. All the α factors for Guatemala exceed 1.00 (Figure 11), so scoring for this purpose is less precise than direct measurement, usually on the order of 30 to 40 percent.

The formula for standard errors can be rearranged to give a formula for sample sizes before indirect measurement via a scorecard, where $\hat{p}$ is based on previous measurements and is assumed equal at both baseline and follow-up:

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \hat{p} \cdot (1 - \hat{p}) .$$

To illustrate the use of the formula above to determine sample size for estimating changes in poverty rates across two independent samples between 2000 and 2006, suppose the desired confidence level is 90 percent ($z = 1.64$), the desired confidence interval is 2 percentage points ($c = 0.02$), the poverty line is the national line, $\alpha = 1.31$ (from Figure 11), and $\hat{p} = 0.400$ (from Figure 2). Then the baseline sample size is $n = 2 \cdot \left(\frac{1.31 \cdot 1.64}{0.02} \right)^2 \cdot 0.400 \cdot (1 - 0.400) = 5{,}539$, and the follow-up sample is also 5,539.

7.5 Accuracy for estimated change for one sample, scored twice

The general formula relating the confidence interval c to the standard error σ when using scoring to estimate change for a single group of households, all of whom are scored at two points in time, is:[15]

$$c = +/- z \cdot \sigma = +/- z \cdot \alpha \cdot \sqrt{\frac{p_{12} \cdot (1 - p_{12}) + p_{21} \cdot (1 - p_{21}) + 2 \cdot p_{12} \cdot p_{21}}{n}}.$$

z, c, and α are defined as before, p_{12} is the share of all sampled households that move from below the poverty line to above it, and p_{21} is the share of all sampled households that move from above the line to below it.

As usual, the formula for σ can be rearranged to give a formula for sample size n before measurement. This requires an estimate (based on information available before measurement) of the expected shares of all households who cross the poverty line $\hat{p}_{12}$ and $\hat{p}_{21}$. Before measurement, it is reasonable to assume that the overall change in the poverty rate will be zero, which implies $\hat{p}_{12} = \hat{p}_{21} = \hat{p}_{*}$, giving:

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \hat{p}_{*}.$$

$\hat{p}_{*}$ could be anything between 0–0.5, so more information is needed before applying this formula. Suppose that the observed relationship between $\hat{p}_{*}$, the number of years y between baseline and follow-up, and $p_{\text{baseline}} \cdot (1 - p_{\text{baseline}})$ is—as in Peru (Schreiner, 2009a)—close to:

$$\hat{p}_{*} = -0.02 + 0.016 \cdot y + 0.47 \cdot [p_{\text{baseline}} \cdot (1 - p_{\text{baseline}})].$$

[15] See McNemar (1947) and Johnson (2007). John Pezzullo helped find this formula.

Given this, a sample-size formula for a group of households to whom the Guatemala scorecard is applied twice (once after the end of field work for the 2006 ENCOVI and then again later) is:

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \left\{ -0.02 + 0.016 \cdot y + 0.47 \cdot \left[p_{\text{baseline}} \cdot \left(1 - p_{\text{baseline}} \right) \right] \right\}.$$

In Peru (the only other country for which there is a data-based estimate, Schreiner 2009a), the average α across years and poverty lines is about 1.30.

To illustrate the use of this formula, suppose the desired confidence level is 90 percent ($z = 1.64$), the desired confidence interval is 2.0 percentage points ($c = 0.02$), the poverty line is the national line, and the sample will be scored first in 2010 and then again in 2013 ($y = 3$). The before-baseline poverty rate is 40.0 percent ($p_{2006} = 0.400$, Figure 2), and suppose $\alpha = 1.30$. Then the baseline sample size is $n = 2 \cdot \left(\frac{1.30 \cdot 1.64}{0.02} \right)^2 \cdot \left\{ -0.02 + 0.016 \cdot 3 + 0.47 \cdot \left[0.400 \cdot (1 - 0.400) \right] \right\} = 3{,}200$. The same group of 3,200 households is scored at follow-up as well.

8. Targeting

When a program uses the scorecard for targeting, households with scores at or below a cut-off are labeled *targeted* and treated—for program purposes—as if they are below a given poverty line. Households with scores above a cut-off are labeled *non-targeted* and treated—for program purposes—as if they are above a given poverty line.

There is a distinction between *targeting status* (scoring at or below a targeting cut-off) and *poverty status* (having expenditure below a poverty line). Poverty status is a fact that depends on whether expenditure is below a poverty line as directly measured by a survey. In contrast, targeting status is a program's policy choice that depends on a cut-off and on an indirect estimate from a scorecard.

Targeting is successful when households truly below a poverty line are targeted (*inclusion*) and when households truly above a poverty line are not targeted (*exclusion*). Of course, no scorecard is perfect, and targeting is unsuccessful when households truly below a poverty line are not targeted (*undercoverage*) or when households truly above a poverty line are targeted (*leakage*).

Figure 13 depicts these four possible targeting outcomes. Targeting accuracy varies by cut-off; a higher cut-off has better inclusion (but greater leakage), while a lower cut-off has better exclusion (but higher undercoverage).

A program should weigh these trade-offs when setting a cut-off. A formal way to do this is to assign net benefits—based on a program's values and mission—to each of

the four possible targeting outcomes and then to choose the cut-off that maximizes total net benefits (Adams and Hand, 2000; Hoadley and Oliver, 1998).

Figure 14 shows the distribution of households by targeting outcome. For an example cut-off of 49 or less and the 2006 scorecard applied to the 2006 validation sample, outcomes for the national line are:

- Inclusion: 34.4 percent are below the line and correctly targeted
- Undercoverage: 6.3 percent are below the line and mistakenly not targeted
- Leakage: 8.5 percent are above the line and mistakenly targeted
- Exclusion: 50.7 percent are above the line and correctly not targeted

Increasing the cut-off to 54 or less improves inclusion and undercoverage but worsens leakage and exclusion:

- Inclusion: 36.9 percent are below the line and correctly targeted
- Undercoverage: 3.8 percent are below the line and mistakenly not targeted
- Leakage: 12.2 percent are above the line and mistakenly targeted
- Exclusion: 47.1 percent are above the line and correctly not targeted

Which cut-off is preferred depends on total net benefit. If each targeting outcome has a per-household benefit or cost, then total net benefit for a given cut-off is:

(Benefit per household correctly included x Households correctly included) –
(Cost per household mistakenly not covered x Households mistakenly not covered) –
(Cost per household mistakenly leaked x Households mistakenly leaked) +
(Benefit per household correctly excluded x Households correctly excluded).

To set an optimal cut-off, a program would:

- Assign benefits and costs to possible outcomes, based on its values and mission
- Tally total net benefits for each cut-off using Figure 14 for a given poverty line
- Select the cut-off with the highest total net benefit

The most difficult step is assigning benefits and costs to targeting outcomes. Any program that uses targeting—with or without scoring—should thoughtfully consider

how it values successful inclusion and exclusion versus errors of undercoverage and leakage. It is healthy to go through a process of thinking explicitly and intentionally about how possible targeting outcomes are valued.

A common choice of benefits and costs is "Total Accuracy" (IRIS Center, 2005; Grootaert and Braithwaite, 1998). With "Total Accuracy", total net benefit is the number of households correctly included or correctly excluded:

Total Accuracy =	1	x	Households correctly included	–
	0	x	Households mistakenly undercovered	–
	0	x	Households mistakenly leaked	+
	1	x	Households correctly excluded.	

Figure 14 shows "Total Accuracy" for all cut-offs for Guatemala's scorecard. For the national line in the 2006 validation sample, total net benefit is greatest (85.1) for a cut-off of 49 or less, with more than five in six households in Guatemala correctly classified.

"Total Accuracy" weighs successful inclusion of households below the line the same as successful exclusion of households above the line. If a program valued inclusion more (say, twice as much) than exclusion, it could reflect this by setting the benefit for inclusion to 2 and the benefit for exclusion to 1. Then the chosen cut-off would maximize (2 x Households correctly included) + (1 x Households correctly excluded).[16]

As an alternative to assigning benefits and costs to targeting outcomes and then choosing a cut-off to maximize total net benefit, a program could set a cut-off to

[16] Figure 14 also reports "BPAC", discussed in Section 9 below.

achieve a desired poverty rate among targeted households. The third column of Figure 15 ("% targeted who are poor") shows the expected poverty rate among Guatemala households who score at or below a given cut-off. For the example of the national line and the 2006 validation sample, targeting households who score 49 or less would target 43.0 percent of all households (second column) and produce a poverty rate among those targeted of 80.1 percent (third column).

Figure 15 also reports two other measures of targeting accuracy. The first is a version of inclusion ("% of poor who are targeted"). For the example of the national line and the 2006 validation sample with a cut-off of 49 or less, 84.5 percent of all poor households are covered.

The final targeting measure in Figure 15 is the number of successfully targeted poor households for each non-poor household mistakenly targeted (right-most column). For the national line, the 2006 validation sample, and a cut-off of 49 or less, covering 4.0 poor households means leaking to 1 non-poor household.

9. Context of poverty-assessment tools in Guatemala

This section discusses four existing Guatemala poverty-assessment tools in terms of their goals, methods, poverty lines, indicators, accuracy, and precision. The relative strengths of the new scorecard here are its using the latest nationally representative data, its testing of accuracy and precision out-of-sample, and its reporting of formulas for standard errors.

9.1 Gwatkin *et al.*

Gwatkin *et al.* (2007) apply to Guatemala an approach used in 56 countries with Demographic and Health Surveys (Rutstein and Johnson, 2004). Principal Components Analysis is used to make an asset index from simple, low-cost indicators available for the 5,587 households in Guatemala's 1998/9 DHS. The PCA index is like the scorecard here except that, because the DHS does not collect data on income nor expenditure, it is based on a different definition of poverty and its accuracy vis-à-vis expenditure-based poverty is unknown.[17] Well-known examples of the PCA asset-index approach include

[17] Still, because the indicators are similar and because the "flat maximum" is important, carefully built PCA indices and expenditure-based poverty-assessment tools seem to pick up the same underlying construct (perhaps "permanent income", see Bollen, Glanville, and Stecklov, 2007), and they rank households much the same. Tests of how well rankings by PCA indices correspond with rankings by expenditure are Filmer and Scott (2008), Lindelow (2006), Wagstaff and Watanabe (2003), and Montgomery *et al.* (2000).

Stifel and Christiaensen (2007), Zeller *et al.* (2006), Sahn and Stifle (2000 and 2003), and Filmer and Pritchett (2001).

The 24 indicators in Gwatkin *et al.* are similar to those in the new scorecard here in terms of their simplicity, low cost, and verifiability:

- Characteristics of the residence:
  - Type of floor
  - Type of wall
  - Type of roof
  - Type of kitchen
  - Presence of a chimney
  - Type of cooking fuel
  - Source of drinking water
  - Type of toilet arrangement
  - Means of trash removal
  - Presence of an electrical connection
  - Tenancy status
- Ownership of consumer durables:
  - Radios
  - Televisions
  - Refrigerators
  - Telephones
  - Bicycles
  - Motorcycles
  - Cars
- Ownership of agricultural assets:
  - Horses or mules
  - Crop land
  - Tractors
- Number of people per sleeping room
- Area of land owned
- Whether any household members work agricultural land

Gwatkin *et al.* discuss three basic uses for their index:

- Segmenting households by quintiles to see how health, population, and nutrition vary with socio-economic status
- Monitoring (via exit surveys) how well local health-service posts reach the poor
- Measuring coverage of health services via local, small-scale surveys

The first goal is akin to targeting, and the last two goals resemble the monitoring goals here, so the uses of the index are about the same as those of the scorecard here.

Still, the Gwatkin *et al.* index is more difficult and costly: it has 24 indicators, it cannot easily fit on a single page, and it cannot be computed by hand in the field, as it has 138 point values, half of them negative, and all with five decimal places.

Finally, the scorecard here—unlike the PCA index—is linked directly to an absolute, expenditure-based poverty line. Thus, while both approaches can rank households, only the scorecard can estimate expenditure-based poverty status.

9.2 SEGEPLAN

Secretaria de Planificación y Programación de la Presidencia (SEGEPLAN, 2002) uses poverty-assessment tools to construct a "poverty map" (Elbers, Lanjouw, and Lanjouw, 2003; Hentschel *et al.*, 2000) to estimate poverty rates, poverty severity, and inequality at the level of Guatemala's 22 departments and 330 municipalities. The goal of the poverty map is to improve the targeting of policies and to draw attention to poverty. The map is a successor to earlier maps (SEGEPLAN, 2000) that used pre-ENCOVI data to produce pro-poor impacts on planning and budgeting (Snel and Henninger, 2002).

SEGEPLAN builds 15 tools (urban and rural for seven regions, plus Guatemala City) using least-squares regression on the logarithm of per-capita expenditure for households in the 2000 ENCOVI, using only indicators found also in the 2002 National Census of Population and Housing.

The tools are applied to households in the 2002 census to estimate poverty rates, using the same food and national poverty lines as this paper. At these levels, the poverty-mapping estimates are more precise than direct estimates based on ENCOVI data. Finally, SEGEPLAN makes "poverty maps" that quickly show—in a way that is clear for non-specialists—how poverty rates vary across departments and municipalities.

Poverty mapping in SEGEPLAN and the scorecard in this paper are similar in that they both:

- Build poverty-assessment tools with nationally representative survey data and then apply them to other data on sub-groups that may not be nationally representative
- Use simple, verifiable indicators that are quick and inexpensive to collect
- Provide unbiased estimates when their assumptions hold
- Are used to estimate poverty rates for groups
- Seek to be useful in practice and so aim to be understood by non-specialists

Strengths of poverty mapping include that it:

- Has formally established theoretical properties
- Can be applied straightforwardly to measures of well-being beyond poverty rates
- Requires less data for tool construction and calibration
- Includes community-level indicators
- Uses only indicators that appear in a census

Strengths of the scorecard include that it:

- Is simpler in terms of both construction and application

- Tests accuracy empirically
- Associates poverty likelihoods with scores non-parametrically
- Uses judgment and theory in scorecard construction to reduce overfitting
- Estimates poverty likelihoods for individual households
- Reports straightforward formulas for standard errors

The basic difference between the two approaches is that poverty mapping seeks to help governments design and target pro-poor policies, while the scorecard seeks to help local pro-poor organizations to manage their outreach when implementing policies.[18]

SEGEPLAN's 15 tools use 8 to 18 indicators selected from a larger group of 77 candidate indicators, 31 of which are municipal-level indicators from sources other than the 2000 ENCOVI or the 2002 census. SEGEPLAN does not report what indicators are in what a tools, nor does it report points. In the absence of more information, this means that local pro-poor organizations cannot use the tools on their own for their own purposes.

Because the 2002 census does not measure of expenditure, SEGEPLAN cannot test accuracy out-of-sample, that is, using data that is not also used to construct the tool. While SEGEPLAN reports some confidence intervals (equivalent to standard

[18] Another apparent difference is that the developers of the poverty-mapping approach (Elbers, Lanjouw, and Lanjouw, 2003; Demombynes *et al.*, 2002) say that it is too inaccurate to be used for targeting individual households, while Schreiner (2008c) supports such targeting as a legitimate, potentially useful application of the scorecard. Recently, the developers of poverty mapping seem to have taken a small step away from their original position (Elbers *et al.*, 2007).

errors), it does not report sample sizes, so the precision of its estimates cannot be compared with those in this paper.

9.3 IRIS Center

USAID commissioned IRIS Center ("IRIS", 2008a) to build a "Poverty Assessment Tool" (PAT) for use by its microenterprise partners in Guatemala for reporting on their participants' poverty rates. Given this mandate, IRIS considers only the USAID "extreme" poverty line, using the 2000 ENCOVI to estimate expenditure via quantile regression (Koenker and Hallock, 2001). IRIS' 24 indicators are:[19]

- Household demographics:
  - Number of members
  - Age of head
- Education:
  - Whether head completed primary school
  - Whether head is literate in Spanish
  - Number of members (excluding head) whose highest completed education is:
    - Incomplete primary
    - Complete primary
    - Incomplete secondary
- Characteristics of the residence:
  - Type of roof
  - Type of exterior wall
  - Type of toilet arrangement
  - Presence of an electrical connection

[19] IRIS does not report the actual scorecard, so this list is based on its questionnaire.

- Asset ownership:
  - — Television
  - — Blender
  - — Stove
  - — Telephone
  - — Sewing machine
  - — Bicycle
  - — Car
  - — Pickup
  - — Camera
  - — Mill
  - — Pigs
- Whether any household member had money deposited in with any institution, company, individuals, or others in the past 12 months
- Number of days household members could not work due to illness or accidents in the past month

While most of these indicators are simple to collect and verify, the final two—financial deposits and how work has been affected by health—are difficult to verify and may be sensitive for participants to answer.

IRIS does not report the PAT's points;[20] scores can be computed only with free IRIS-provided software which does not report scores for individual households but rather only provides an estimate of a group's poverty rate, as this is all the USAID mandate requires. This precludes use for targeting.

IRIS' preferred measure of accuracy is the "Balanced Poverty Accuracy Criterion" (IRIS Center, 2005), and USAID uses BPAC for certifying poverty-assessment tools. BPAC depends on inclusion and on the difference between the

[20] IRIS does not reveal points so as to reduce the opportunity for manipulation. Points, indicator definitions, and measures of precision are available from IRIS on request.

estimated poverty rate and its true value (equivalent to the difference between undercoverage and leakage). The BPAC formula is:

(Inclusion – |Undercoverage – Leakage|) x [100 ÷ (Inclusion + Undercoverage)].

A higher BPAC is better. When comparing BPAC (and other measures of accuracy) for the IRIS tool versus the new scorecard here, the scorecard here is at a disadvantage in three ways. First, IRIS tests its tool *in-sample*, that is, using the same data that is used to construct the tool in the first place. In contrast, the scorecard here is tested *out-of-sample*, that is, using data that was not used to construct the scorecard. In-sample testing overstates accuracy; for example, Johanssen (2006, for BPAC), Copestake *et al.* (2005, for a variety of measures), and Narayan and Yoshida (2005, for undercoverage and leakage) find that accuracy measures for poverty-assessment tools can deteriorate 8 to 17 percent going from in-sample to out-of-sample. Out-of-sample is also more relevant because, in practice, poverty-assessment tools are applied with households that are not part of the data used to construct the tool.

Second, the new scorecard here is at a disadvantage because IRIS' tests are *in-time*, that is, they use data from the same time period as the households used to construct the tool. In contrast, the scorecard here is tested six years *out-of-time*, that is, using data gathered at a different point in time from that at which data is gathered for the households used to construct the scorecard.

Third, the scorecard here is at a disadvantage because IRIS' tool is fine-tuned to the USAID "extreme" poverty line; IRIS does not report accuracy for other lines. The

scorecard here is constructed based on the national poverty line and then calibrated to eight other lines, one of which is the USAID "extreme" line.

For the USAID "extreme" line and the 2000 ENCOVI, the IRIS tool has a BPAC of 74.7 (IRIS, 2008b), while a cut-off of 29 or less for the new scorecard here gives a BPAC of 54.1 (Figure 14, USAID "extreme" line, 2006 scorecard applied to the 2000 ENCOVI). If the scores for the new scorecard are not grouped in ranges of five, however, then its BPAC would be 63.0, about the same as the 62.0 that IRIS would have if a 17-percent penalty were imposed for being in-sample (with no penalty for being in-time).

For estimated poverty rates for groups at a point in time, the quantile that IRIS selects leads to a bias of about zero for its in-sample, in-time estimate.[21] The scorecard here is not optimized for this particular result, but its bias is –0.2 percentage points.

Finally, IRIS reports inclusion of 17.2 percent with exclusion of 71.2. For the 2006 scorecard here applied to the 2000 ENCOVI with a cut-off that gives inclusion of 17.2 percent, exclusion is 64.7 percent.

Thus, the IRIS tool is more accurate, at least in terms of BPAC and targeting and with in-sample, in-time tests. With a level playing field, the accuracy of the two poverty-assessment tools would likely be more similar.

[21] IRIS does not report standard errors or confidence intervals—nor formula for standard errors—for its estimates, although they are available on request from IRIS.

The main distinction between the new scorecard here and the IRIS PAT is transparency and ease-of-use: IRIS requires more data (some of which is more difficult to collect and more sensitive to provide), only estimates poverty rates for groups, and does not report the PAT's points, indicators, or precision.

9.4 Fruttero

Fruttero (Chapter 5 of World Bank, 2009) uses the 2006 ENCOVI to construct two poverty-assessment tools[22] (urban and rural) and shows how their use would improve the targeting of Guatemala's *Mi Familia Progresa* conditional cash-transfer program, assuming that the target group comprises households under the food line who have children 11-years-old or younger. Simulations show that the tools would reduce leakage and thus enable greater transfers to the target group for a given budget. Fruttero recommends that the tool be used for targeting households as *Mi Familia Progresa* expands beyond the poorest municipalities where it is currently being piloted.

As in this paper, Fruttero begins by selecting candidate indicators that are highly correlated with expenditure "yet easy to measure, observe, and verify—and relatively hard to manipulate by the household" (p. 69). The tool is constructed using stepwise regression on the logarithm of per-capita expenditure. Scores are converted into poverty likelihoods as in Hentschel *et al.* (2000). The urban and rural tools use the same set of 15 indicators:

[22] Fruttero use the term *proxy means tests*.

- Household demographics:
  - Sex of head
  - Age of head
  - Ethnicity of head
  - Dependency rate
- Education of head
- Characteristics of the residence:
  - Type of wall
  - Source of drinking water
  - Type of toilet arrangement
  - Means of disposal of garbage
  - Number of rooms
  - Number of household members per room
- Asset ownership:
  - Television
  - Refrigerator
  - Washing machine
  - Vehicle

These are similar to the indicators for the new scorecard here, except the dependency rate and the number of people per room are more difficult to calculate. The points themselves are also more complex, including negative numbers and four decimal places. Thus, Fruttero's tool would be more difficult to apply by hand in the field.

How do the two poverty-assessment tools compare in terms of targeting accuracy? As with the IRIS comparison, the new scorecard here is at a disadvantage. First, Fruttero tests accuracy in-sample, while this paper tests it out-of-sample. Second, Fruttero uses two tools (segmented by urban and rural), while this paper uses a single scorecard.

Fruttero reports that targeting the lowest-scoring 17.1 percent of households in Guatemala would lead to successful targeting of 66.1 percent of households under the

food line (p. 79). For the new scorecard here, targeting 17.0 percent of all households leads to successful targeting of 66.2 percent of households under the food line.

Thus, the single scorecard here (tested out-of-sample) targets as well as the two tools (tested in-sample) in Fruttero. Given that the new scorecard here uses fewer and simpler indicators, can be computed by hand in the field, and is easier for policymakers to understand, it might make sense to consider it for use in Guatemala's *Mi Familia Progresa* program.

10. Conclusion

Pro-poor programs in Guatemala can use the scorecard to segment clients for targeted services as well as to estimate:

- The likelihood that a household has expenditure below a given poverty line
- The poverty rate of a population at a point in time
- The change in the poverty rate of a population between two points in time

The scorecard is inexpensive to use and can be understood by non-specialists. It is designed to be practical for local pro-poor organizations who want to improve how they monitor and manage their social performance.

The scorecard is built with a sub-sample of data from the 2006 ENCOVI, tested on a different sub-sample from the 2006 ENCOVI and on the entire 2000 ENCOVI, and calibrated to nine poverty lines.

Accuracy is reported for estimates of households' poverty likelihoods, groups' poverty rates at a point in time, and changes in groups' poverty rates over time. Of course, the scorecard's estimates of changes in poverty rates are not the same as estimates of program impact. Targeting accuracy and formula for standard errors are also reported.

When the scorecard is applied to the 2006 validation sample with $n = 16{,}384$, the absolute difference between estimates and true poverty rates at a point in time is –2.8 percentage points or less and averages 0.8 percentage points across the nine poverty lines. With 90-percent confidence, the precision of these differences is +/–0.9 percentage points or less.

When used to measure change across independent samples of $n = 16{,}384$ between the 2006 validation sample and the 2000 ENCOVI, the average absolute difference between estimates and true changes across poverty lines and years is 1.5 percentage points.

For targeting, programs can use the results reported here to select a cut-off that fits their values and mission.

Although the statistical technique is innovative, and although technical accuracy is important, the design of the scorecard focuses on transparency and ease-of-use. After all, a perfectly accurate scorecard is worthless if programs feel so daunted by its complexity or its cost that they do not even try to use it. For this reason, the scorecard is kept simple, using ten indicators that are inexpensive to collect and that are straightforward to verify. Points are all zeros or positive integers, and scores range from 0 to 100. Scores are related to poverty likelihoods via simple look-up tables, and targeting cut-offs are likewise easy to apply. The design attempts to facilitate adoption by helping managers understand and trust scoring and by allowing non-specialists to generate scores quickly in the field.

In summary, the scorecard is a practical, objective way for pro-poor programs in Guatemala to measure poverty rates, track changes in poverty rates over time, and target services, provided that it is applied during a period similar to that of late 2007, the point in time when the data used to construct the scorecard was collected. The

same approach can be applied to any country with similar data from a national income or expenditure survey.

References

Adams, Niall M.; and David J. Hand. (2000) "Improving the Practice of Classifier Performance Assessment", *Neural Computation*, Vol. 12, pp. 305–311.

Baesens, Bart; Van Gestel, Tony; Viaene, Stijn; Stepanova, Maria; Suykens, Johan A. K.; and Jan Vanthienen. (2003) "Benchmarking State-of-the-Art Classification Algorithms for Credit Scoring", *Journal of the Operational Research Society*, Vol. 54, pp. 627–635.

Bollen, Kenneth A.; Glanville, Jennifer L.; and Guy Stecklov. (2007) "Socio-Economic Status, Permanent Income, and Fertility: A Latent-Variable Approach", *Population Studies*, Vol. 61, No. 1, pp. 15–34.

Caire, Dean. (2004) "Building Credit Scorecards for Small Business Lending in Developing Markets", `microfinance.com/English/Papers/Scoring_SMEs_Hybrid.pdf`, retrieved 7 May 2010.

Chen, Shiyuan; and Mark Schreiner. (2009a) "Simple Poverty Scorecard: Bangladesh", `SimplePovertyScorecard.com/BGD_2005_ENG.pdf`, retrieved 11 January 2016.

_____. (2009b) "Simple Poverty Scorecard Poverty-Assessment Tool: Vietnam", `SimplePovertyScorecard.com/VNM_2006_ENG.pdf`, retrieved 7 May 2010.

Coady, David; Grosh, Margaret; and John Hoddinott. (2002) "The Targeting of Transfers in Developing Countries" , `hdl.handle.net/10986/14902`, retrieved 3 November 2015.

Cochran, William G. (1977) *Sampling Techniques, Third Edition*.

Copestake, James G.; Dawson, Peter; Fanning, John-Paul; McKay, Andrew; and Katie Wright-Revolledo. (2005) "Monitoring the Diversity of the Poverty Outreach and Impact of Microfinance: A Comparison of Methods Using Data from Peru", *Development Policy Review*, Vol. 23, No. 6, pp. 703–723.

Daley-Harris, Sam. (2009) *State of the Microcredit Summit Campaign Report 2009*, `microcreditsummit.org/state_of_the_campaign_report/`, retrieved 7 May 2010.

Dawes, Robyn M. (1979) "The Robust Beauty of Improper Linear Models in Decision Making", *American Psychologist*, Vol. 34, No. 7, pp. 571–582.

Demombynes, Gabriel; Elbers, Chris; Lanjouw, Jenny; Lanjouw, Peter; Mistiaen, Johan; and Berk Özler. (2002) "Producing an Improved Geographic Profile of Poverty: Methodology and Evidence from Three Developing Countries", World Institute for Development Economics Research Discussion Paper No. 2002/39, go.worldbank.org/UMQCZ1BW00, retrieved 7 May 2010.

Efron, Bradley; and Robert J. Tibshirani. (1993) *An Introduction to the Bootstrap*.

Elbers, Chris; Fujii, Tomoki; Lanjouw, Peter; Özler, Berk; and Wesley Yin. (2007) "Poverty Alleviation through Geographic Targeting: How Much Does Disaggregation Help?", *Journal of Development Economics*, Vol. 83, pp. 198–213.

_____; Lanjouw, Jean O.; and Peter Lanjouw. (2003) "Micro-Level Estimation of Poverty and Inequality", *Econometrica*, Vol. 71, No. 1, pp. 355–364.

Falkenstein, Eric. (2008) "DefProb™: A Corporate Probability of Default Model", papers.ssrn.com/sol3/papers.cfm?abstract_id=1103404, retrieved 7 May 2010.

Filmer, Deon; and Lant Pritchett. (2001) "Estimating Wealth Effects without Expenditure Data—or Tears: An Application to Educational Enrollments in States of India", *Demography*, Vol. 38, No. 1, pp. 115–132.

Filmer, Deon; and Kinnon Scott. (2008) "Assessing Asset Indices", World Bank Policy Research Working Paper No. 4605, papers.ssrn.com/sol3/papers.cfm?abstract_id=1149108, retrieved 7 May 2010.

Friedman, Jerome H. (1997) "On Bias, Variance, 0–1 Loss, and the Curse-of-Dimensionality", *Data Mining and Knowledge Discovery*, Vol. 1, pp. 55–77.

Fuller, Rob. (2006) "Measuring the Poverty of Microfinance Clients in Haiti", microfinance.com/English/Papers/Scoring_Poverty_Haiti_Fuller.pdf, retrieved 7 May 2010.

Goodman, Leo A.; and Kruskal, William H. (1979) *Measures of Association for Cross Classification*.

Grootaert, Christiaan; and Jeanine Braithwaite. (1998) "Poverty Correlates and Indicator-Based Targeting in Eastern Europe and the Former Soviet Union", World Bank Policy Research Working Paper No. 1942, go.worldbank.org/VPMWVLU8E0, retrieved 7 May 2010.

Grosh, Margaret; and Judy L. Baker. (1995) "Proxy Means Tests for Targeting Social Programs: Simulations and Speculation", World Bank LSMS Working Paper No. 118, go.worldbank.org/W9OWN57PD0, retrieved 7 May 2010.

Gwatkin, Davidson R.; Rutstein, Shea; Johnson, Kiersten; Suliman, Eldaw; Wagstaff, Adam; and Agbessi Amouzou. (2007) "Socio-Economic Differences in Health, Nutrition, and Population: Guatemala", World Bank Country Reports on HNP and Poverty, go.worldbank.org/T6LCN5A340, retrieved 7 May 2010.

Hand, David J. (2006) "Classifier Technology and the Illusion of Progress", *Statistical Science*, Vol. 22, No. 1, pp. 1–15.

Hentschel, Jesko; Lanjouw, Jean Olsen; Lanjouw, Peter; and Javier Poggi. (2000) "Combining Census and Survey Data to Trace the Spatial Dimensions of Poverty: A Case Study of Ecuador", *World Bank Economic Review*, Vol. 14, No. 1, pp. 147–165.

Hoadley, Bruce; and Robert M. Oliver. (1998) "Business Measures of Scorecard Benefit", *IMA Journal of Mathematics Applied in Business and Industry*, Vol. 9, pp. 55–64.

IRIS Center. (2008a) "Client Assessment Survey—Guatemala", povertytools.org/USAID_documents/Tools/Current_Tools/USAID_PAT_Guat_7-2007.xls, retrieved 23 December 2009.

_____. (2008b) "Accuracy Results for 20 Poverty Assessment Tool Countries", povertytools.org/other_documents/PAT_20_country_accuracy_results_Dec2008.pdf, retrieved 7 May 2010.

_____. (2007a) "Manual for the Implementation of USAID Poverty Assessment Tools", povertytools.org/training_documents/Manuals/USAID_PAT_Manual_Eng.pdf, retrieved 7 May 2010.

_____. (2007b) "Introduction to Sampling for the Implementation of PATs", povertytools.org/training_documents/Sampling/Introduction_Sampling.ppt, retrieved 7 May 2010.

_____. (2005) "Notes on Assessment and Improvement of Tool Accuracy", povertytools.org/other_documents/AssessingImproving_Accuracy.pdf, retrieved 7 May 20109.

Johannsen, Julia. (2006) "Operational Poverty Targeting in Peru—Proxy Means Testing with Non-Income Indicators", International Poverty Centre Working Paper No. 30, undp-povertycentre.org/pub/IPCWorkingPaper30.pdf, retrieved 7 May 2010.

Johnson, Glenn. (2007) "Lesson 3: Two-Way Tables—Dependent Samples", www.stat.psu.edu/online/development/stat504/03_2way/53_2way_compare.htm, retrieved 7 May 2010.

Koenker, Roger; and Kevin F. Hallock. (2001) "Quantile Regression", *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 143–156.

Kolesar, Peter; and Janet L. Showers. (1985) "A Robust Credit-Screening Model Using Categorical Data", *Management Science*, Vol. 31, No. 2, pp. 124–133.

Lindelow, Magnus. (2006) "Sometimes More Equal Than Others: How Health Inequalities Depend on the Choice of Welfare Indicator", *Health Economics*, Vol. 15, pp. 263–279.

Lovie, Alexander D.; and Patricia Lovie. (1986) "The Flat-Maximum Effect and Linear Scoring Models for Prediction", *Journal of Forecasting*, Vol. 5, pp. 159–168.

Martinelli, César; and Susan W. Parker. (2007) "Deception and Misreporting in a Social Program", ciep.itam.mx/~martinel/lies4.pdf, retrieved 7 May 2010.

Mathiassen, Astrid. (2008) "The Predictive Ability of Poverty Models: Empirical Evidence from Uganda", Statistics Norway Discussion Paper No. 560, ssb.no/publikasjoner/DP/pdf/dp560.pdf, retrieved 7 May 2010.

Matul, Michal; and Sean Kline. (2003) "Scoring Change: Prizma's Approach to Assessing Poverty", Microfinance Centre for Central and Eastern Europe and the New Independent States Spotlight Note No. 4, www.mfc.org.pl/doc/Research/ImpAct/SN/MFC_SN04_eng.pdf, retrieved 7 May 2010.

McNemar, Quinn. (1947) "Note on the Sampling Error of the Difference between Correlated Proportions or Percentages", *Psychometrika*, Vol. 17, pp. 153–157.

Montgomery, Mark; Gragnolati, Michele; Burke, Kathleen A.; and Edmundo Paredes. (2000) "Measuring Living Standards with Proxy Variables", *Demography*, Vol. 37, No. 2, pp. 155–174.

Myers, James H.; and Edward W. Forgy. (1963) "The Development of Numerical Credit-Evaluation Systems", *Journal of the American Statistical Association*, Vol. 58, No. 303, pp. 779–806.

Narayan, Ambar; and Nobuo Yoshida. (2005) "Proxy Means Tests for Targeting Welfare Benefits in Sri Lanka", World Bank Report No. SASPR–7, `siteresources.worldbank.org/EXTSAREGTOPPOVRED/Resources/493440-1102216396155/572861-1102221461685/Proxy+Means+Test+for+Targeting+Welfare+Benefits.pdf`, retrieved 7 May 2010.

Onwujekwe, Obinna; Hanson, Kara; and Julia Fox-Rushby. (2006) "Some Indicators of Socio-Economic Status May Not Be Reliable and Use of Indices with These Data Could Worsen Equity", *Health Economics*, Vol. 15, pp. 639–644.

Ravallion, Martin. (1994) *Poverty Comparisons*.

Rutstein, Shea Oscar; and Kiersten Johnson. (2004) "The DHS Wealth Index", DHS Comparative Reports No. 6, `measuredhs.com/pubs/pdf/CR6/CR6.pdf`, retrieved 7 May 2010.

Sahn, David E.; and David Stifel. (2003) "Exploring Alternative Measures of Welfare in the Absence of Expenditure Data", *Review of Income and Wealth*, Series 49, No. 4, pp. 463–489.

_____. (2000) "Poverty Comparisons over Time and across Countries in Africa", *World Development*, Vol. 28, No. 12, pp. 2123–2155.

SAS Institute Inc. (2004) "The LOGISTIC Procedure: Rank Correlation of Observed Responses and Predicted Probabilities", in *SAS/STAT User's Guide, Version 9*, `support.sas.com/documentation/cdl/en/statug/63033/HTML/default/statug_logistic_sect035.htm`, retrieved 7 May 2010.

Schreiner, Mark. (2010) "Simple Poverty Scorecard Poverty-Assessment Tool: Honduras", `SimplePovertyScorecard.com/HND_2007_ENG.pdf`, retrieved 7 May 2010.

_____. (2009a) "Simple Poverty Scorecard Poverty-Assessment Tool: Peru", `SimplePovertyScorecard.com/PER_2007_ENG.pdf`, retrieved 11 January 2016.

_____. (2009b) "Simple Poverty Scorecard Poverty-Assessment Tool: Philippines", `SimplePovertyScorecard.com/PHL_2002_ENG.pdf`, retrieved 7 May 2010.

_____. (2009c) "Simple Poverty Scorecard Poverty-Assessment Tool: Mexico", SimplePovertyScorecard.com/MEX_2008_ENG.pdf, retrieved 7 May 2010.

_____. (2009d) "Simple Poverty Scorecard Poverty-Assessment Tool: Pakistan", SimplePovertyScorecard.com/PAK_2005_ENG.pdf, retrieved 7 May 2010.

_____. (2009e) "Simple Poverty Scorecard Poverty-Assessment Tool: Bolivia", SimplePovertyScorecard.com/BOL_2007_ENG.pdf, retrieved 11 January 2016.

_____. (2008a) "Simple Poverty Scorecard Poverty-Assessment Tool: Peru", SimplePovertyScorecard.com/PER_2003_ENG.pdf, retrieved 11 January 2016.

_____. (2008b) "Simple Poverty Scorecard Poverty-Assessment Tool: India", SimplePovertyScorecard.com/IND_2005_ENG.pdf, retrieved 11 January 2016.

_____. (2008c) "Simple Poverty Scorecard Poverty-Assessment Tool: Ecuador", SimplePovertyScorecard.com/ECU_2005_ENG.pdf, retrieved 7 May 2010.

_____. (2006a) "La Herramiente del Índice de Calificación de la Pobreza™: México", SimplePovertyScorecard.com/MEX_2002_SPA.pdf, retrieved 7 May 2010.

_____. (2006b) "Is One Simple Poverty Scorecard Poverty-Assessment Tool Enough for India?", microfinance.com/English/Papers/Scoring_Poverty_India_Segments.pdf, retrieved 7 May 2010.

_____. (2005) "IRIS Questions on the Simple Poverty Scorecard Poverty-Assessment Tool", microfinance.com/English/Papers/Scoring_Poverty_Response_to_IRIS.pdf, retrieved 7 May 2010.

_____. (2002) *Scoring: The Next Breakthrough in Microfinance?* CGAP Occasional Paper No. 7, pdf.usaid.gov/pdf_docs/PNACQ633.pdf, retrieved 2 December 2009.

_____; Matul, Michal; Pawlak, Ewa; and Sean Kline. (2004) "Poverty Scoring: Lessons from a Microlender in Bosnia-Herzegovina", microfinance.com/English/Papers/Scoring_Poverty_in_BiH_Short.pdf, retrieved 7 May 2010.

_____; and Gary Woller. (2010) "Simple Poverty Scorecard Poverty-Assessment Tool: Ghana", SimplePovertyScorecard.com/GHA_2005_ENG.pdf, retrieved 11 January 2016.

Secretaria de Planificación y Programación de la Presidencia. (2002) *Mapa de Pobreza y Desigualdad al Nivel Municipal de Guatemala: Combinando Información de ENCOVI 2000 y el Censo 2002*, www.segeplan.gob.gt/index.php?option=com_remository&Itemid=41&func=fileinfo&id=50, retrieved 7 May 2010.

_____. (2000) "Informe Final: Mapas de Pobreza", sedac.ciesin.columbia.edu/povmap/downloads/methods/Informe_final_Mapas_de_Pobreza.pdf, retrieved 7 May 2010.

Sillers, Don. (2006) "National and International Poverty Lines: An Overview", pdf.usaid.gov/pdf_docs/Pnadh069.pdf, retrieved 31 May 2012.

Snel, Mathilde; and Norbert Henninger. (2002) "Where are the Poor? Experiences with the Use and Development of Poverty Maps", pdf.wri.org/wherepoor.pdf, retrieved 7 May 2010.

Stifel, David; and Luc Christiaensen. (2007) "Tracking Poverty over Time in the Absence of Comparable Consumption Data", *World Bank Economic Review*, Vol. 21, No. 2, pp. 317–341.

Stillwell, William G.; Barron, F. Hutton; and Ward Edwards. (1983) "Evaluating Credit Applications: A Validation of Multi-Attribute Utility Weight-Elicitation Techniques", *Organizational Behavior and Human Performance*, Vol. 32, pp. 87–108.

Tarozzi, Alessandro; and Angus Deaton. (2007) "Using Census and Survey Data to Estimate Poverty and Inequality for Small Areas", princeton.edu/~deaton/downloads/20080301SmallAreas_FINAL.pdf, retrieved 7 May 2010.

Toohig, Jeff. (2008) "PPI Pilot Training Guide", progressoutofpoverty.org/toolkit, retrieved 7 May 2010.

United States Congress. (2004) "Microenterprise Results and Accountability Act of 2004 (HR 3818 RDS)", November 20, smith4nj.com/laws/108-484.pdf, retrieved 11 January 2017.

Wagstaff, Adam; and Naoko Watanabe. (2003) "What Difference Does the Choice of SES Make in Health-Inequality Measurement?", *Health Economics*, Vol. 12, No. 10, pp. 885–890.

Wainer, Howard. (1976) "Estimating Coefficients in Linear Models: It Don't Make No Nevermind", *Psychological Bulletin*, Vol. 83, pp. 223–227.

World Bank. (2009) *Guatemala Poverty Assessment: Good Performance at Low Levels*, Report No. 43920–GT, go.worldbank.org/VX0D9R9U80, retrieved 7 May 2010.

_____. (2008) "Estimation of PPPs for Non-Benchmark Economies for the 2005 ICP Round", siteresources.worldbank.org/ICPINT/Resources/non-benhmark.pdf (sic), retrieved 7 May 2010.

_____. (2003) *Guatemala Poverty Assessment*, Report No. 24221–GT, go.worldbank.org/RKDSQ3FZZ0, retrieved 7 May 2010.

Zeller, Manfred. (2004) "Review of Poverty Assessment Tools", pdf.usaid.gov/pdf_docs/PNADH120.pdf, retrieved 1 February 2011.

_____.; Sharma, Manohar; Henry, Carla; and Cécile Lapenu. (2006) "An Operational Method for Assessing the Poverty-Outreach Performance of Development Policies and Projects: Results of Case Studies in Africa, Asia, and Latin America", *World Development*, Vol. 34, No. 3, pp. 446–464.

Figure 2: Sample sizes and household poverty rates by sub-sample, survey round and poverty line

			% with expenditure below a poverty line							
				National			USAID		International 2005 PPP	
Sub-sample	**Round**	**Households**	**100%**	**Food**	**150%**	**200%**	**'Extreme'**	**$1.25/day**	**$2.50/day**	**$3.75/day**
All Guatemala	2006	13,686	40.0	10.1	58.2	71.5	19.8	3.0	22.5	39.9
	2000	7,276	45.8	10.8	63.2	73.5	22.5	3.6	24.2	44.2
Construction										
Selecting indicators and points	2006	4,533	39.6	10.3	58.8	71.9	19.7	3.0	22.1	39.3
Calibration										
Associating scores with likelihoods	2006	4,564	39.6	10.0	57.6	72.0	19.8	2.9	22.9	39.8
Validation										
Measuring accuracy	2006	4,589	40.7	9.9	58.3	71.5	19.9	3.1	22.4	40.6
Change in poverty rate (percentage points)										
From 2006 construction/calibration to 2006 validation			–1.2	+0.3	–0.1	+0.4	–0.1	–0.1	+0.0	–1.1
From 2006 validation to 2000 for all Guatemala			–5.1	–0.9	–4.9	–1.9	–2.6	–0.5	–1.8	–3.6

Source: 2000 and 2006 *Encuesta Nacional de Condiciones de Vida*

Figure 3a: All Guatemala, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.76	5.20	17.64	23.52	9.37	3.94	7.87	11.81	15.75
		Rate (households)	20.0	1.7	37.2	51.5	9.6	0.6	7.0	19.6	31.9
		Rate (people)	27.1	2.8	46.4	60.6	13.9	0.9	10.2	26.6	40.9
	2006	Line	17.65	8.61	26.47	35.29	14.20	5.92	11.85	17.77	23.70
		Rate (households)	22.0	3.2	38.6	55.2	10.8	0.6	8.2	20.5	33.1
		Rate (people)	30.0	5.3	48.6	64.9	16.3	1.1	12.6	28.1	42.6
Rural	2000	Line	11.55	5.11	17.33	23.11	7.22	3.87	7.74	11.60	15.47
		Rate (households)	65.6	17.8	83.1	90.3	32.4	6.0	37.4	63.1	78.8
		Rate (people)	74.5	23.8	88.9	94.1	40.6	8.3	46.4	72.2	85.8
	2006	Line	18.28	8.91	27.41	36.55	10.99	6.13	12.27	18.40	24.54
		Rate (households)	60.9	18.0	81.0	90.4	30.3	5.7	39.0	62.4	76.2
		Rate (people)	70.5	24.4	87.4	94.4	39.5	8.1	48.5	71.9	83.9
All	2000	Line	11.63	5.15	17.45	23.26	8.05	3.89	7.79	11.68	15.58
		Rate (households)	45.8	10.8	63.2	73.5	22.5	3.6	24.2	44.2	58.4
		Rate (people)	56.1	15.7	72.4	81.1	30.2	5.4	32.3	54.5	68.4
	2006	Line	17.97	8.76	26.96	35.95	12.53	6.03	12.07	18.10	24.13
		Rate (households)	40.0	10.1	58.2	71.5	19.8	3.0	22.5	39.9	53.0
		Rate (people)	51.0	15.2	68.8	80.2	28.3	4.7	31.2	50.8	64.0

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3b: Guatemala City, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.83	5.24	17.75	23.66	10.21	3.96	7.92	11.88	15.84
		Rate (households)	9.5	0.2	24.8	39.2	4.6	0.2	1.6	9.5	19.7
		Rate (people)	14.2	0.3	32.5	47.9	6.9	0.3	2.0	14.2	27.0
	2006	Line	17.21	8.39	25.81	34.42	16.11	5.78	11.55	17.33	23.11
		Rate (households)	9.5	0.4	21.1	39.0	4.7	0.0	1.4	6.0	16.3
		Rate (people)	13.6	0.4	28.4	47.9	7.4	0.0	2.2	8.7	22.3
Rural	2000	Line	12.42	5.50	18.62	24.83	8.83	4.16	8.31	12.47	16.63
		Rate (households)	35.1	2.4	76.5	85.4	16.9	1.9	15.3	41.4	68.2
		Rate (people)	39.9	2.2	81.2	89.5	16.8	1.6	14.7	46.7	74.4
	2006	Line	18.16	8.85	27.23	36.31	14.25	6.09	12.19	18.28	24.38
		Rate (households)	24.1	0.5	54.0	74.6	11.9	0.0	7.4	26.0	44.4
		Rate (people)	34.8	0.5	66.3	84.2	20.1	0.0	14.3	36.8	56.4
All	2000	Line	11.92	5.28	17.88	23.84	10.00	3.99	7.98	11.97	15.97
		Rate (households)	12.8	0.5	31.5	45.2	6.2	0.4	3.3	13.6	25.9
		Rate (people)	18.1	0.6	40.1	54.4	8.4	0.5	3.9	19.2	34.3
	2006	Line	17.33	8.45	26.00	34.66	15.87	5.82	11.64	17.45	23.27
		Rate (households)	11.1	0.4	24.6	42.8	5.5	0.0	2.0	8.1	19.3
		Rate (people)	16.3	0.5	33.3	52.6	9.0	0.0	3.8	12.4	26.8

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3c: El Progreso, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.27	4.99	16.91	22.54	11.16	3.77	7.55	11.32	15.09
		Rate (households)	19.3	0.0	28.8	52.8	5.0	0.0	0.0	12.2	28.8
		Rate (people)	22.9	0.0	32.7	53.9	6.8	0.0	0.0	14.9	32.7
	2006	Line	17.66	8.61	26.49	35.31	13.89	5.93	11.85	17.78	23.71
		Rate (households)	24.2	1.7	45.5	66.1	11.8	0.3	6.0	23.2	38.2
		Rate (people)	31.7	3.3	53.6	73.9	16.6	0.1	9.4	30.8	46.6
Rural	2000	Line	11.29	5.00	16.94	22.59	8.40	3.78	7.56	11.34	15.12
		Rate (households)	46.1	0.0	75.0	83.6	22.8	0.0	15.5	43.4	64.8
		Rate (people)	58.2	0.0	85.0	90.1	26.3	0.0	18.2	55.8	78.5
	2006	Line	17.53	8.55	26.30	35.07	12.76	5.89	11.77	17.66	23.54
		Rate (households)	39.4	8.1	61.4	77.8	19.5	2.1	17.3	38.3	54.3
		Rate (people)	48.0	11.1	69.6	85.1	25.2	3.4	22.2	46.9	63.6
All	2000	Line	11.29	5.00	16.93	22.58	9.04	3.78	7.56	11.34	15.12
		Rate (households)	39.9	0.0	64.4	76.5	18.7	0.0	11.9	36.2	56.5
		Rate (people)	50.0	0.0	72.8	81.6	21.8	0.0	14.0	46.3	67.8
	2006	Line	17.58	8.57	26.37	35.16	13.19	5.90	11.80	17.70	23.61
		Rate (households)	33.3	5.6	55.1	73.1	16.4	1.3	12.8	32.3	47.9
		Rate (people)	41.8	8.1	63.6	80.9	21.9	2.1	17.3	40.8	57.1

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3d: Sacatepéquez, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.77	5.21	17.66	23.54	8.48	3.94	7.88	11.82	15.76
		Rate (households)	27.8	1.5	44.9	55.9	13.3	0.9	11.8	26.5	38.4
		Rate (people)	34.5	2.1	54.2	63.5	15.9	1.2	14.4	32.8	47.2
	2006	Line	18.01	8.79	27.02	36.03	14.10	6.05	12.09	18.14	24.19
		Rate (households)	25.5	2.4	51.6	69.1	12.7	0.3	7.6	26.0	44.6
		Rate (people)	33.3	3.9	61.1	76.4	17.1	0.6	10.2	33.9	54.3
Rural	2000	Line	11.67	5.17	17.51	23.34	9.20	3.91	7.82	11.72	15.63
		Rate (households)	18.0	2.2	44.8	55.5	8.6	2.2	3.2	15.7	36.1
		Rate (people)	20.8	2.8	53.4	60.7	9.1	2.8	3.7	18.5	41.4
	2006	Line	18.30	8.93	27.45	36.60	12.19	6.14	12.29	18.43	24.57
		Rate (households)	45.8	6.3	69.7	84.8	22.7	0.0	24.1	47.2	65.4
		Rate (people)	55.5	9.5	77.3	90.0	31.4	0.0	32.5	56.6	74.5
All	2000	Line	11.76	5.20	17.63	23.51	8.60	3.94	7.87	11.81	15.74
		Rate (households)	26.3	1.6	44.9	55.9	12.6	1.1	10.5	24.8	38.0
		Rate (people)	32.4	2.2	54.1	63.1	14.8	1.4	12.7	30.5	46.3
	2006	Line	18.06	8.81	27.09	36.11	13.82	6.06	12.12	18.18	24.25
		Rate (households)	28.2	3.0	54.0	71.2	14.0	0.3	9.8	28.8	47.3
		Rate (people)	36.5	4.7	63.5	78.4	19.2	0.5	13.5	37.2	57.3

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3e: Chimaltenango, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.83	5.24	17.75	23.67	8.71	3.96	7.92	11.89	15.85
		Rate (households)	31.8	3.5	56.1	69.4	15.7	0.7	12.0	32.5	52.3
		Rate (people)	38.5	4.8	64.1	75.7	18.6	1.3	14.3	38.9	61.1
	2006	Line	18.42	8.98	27.63	36.83	13.01	6.18	12.36	18.55	24.73
		Rate (households)	36.1	5.5	63.3	78.2	17.7	1.9	13.4	39.1	55.8
		Rate (people)	43.3	7.9	70.2	84.1	24.9	2.9	18.4	46.3	63.6
Rural	2000	Line	11.85	5.25	17.78	23.71	6.66	3.97	7.94	11.91	15.87
		Rate (households)	68.9	16.7	88.8	94.3	34.4	4.0	46.8	69.8	85.7
		Rate (people)	79.0	21.8	94.2	97.1	43.1	5.2	57.6	79.9	92.3
	2006	Line	18.69	9.12	28.04	37.38	9.83	6.27	12.55	18.82	25.10
		Rate (households)	70.5	22.6	92.0	98.2	34.7	6.6	51.8	76.2	88.8
		Rate (people)	77.5	30.7	94.1	98.7	44.5	9.4	60.5	82.2	91.2
All	2000	Line	11.85	5.24	17.77	23.69	7.56	3.97	7.93	11.90	15.86
		Rate (households)	51.7	10.6	73.7	82.8	25.7	2.5	30.6	52.5	70.2
		Rate (people)	61.1	14.3	80.9	87.6	32.3	3.5	38.4	61.8	78.5
	2006	Line	18.55	9.05	27.83	37.11	11.41	6.23	12.46	18.69	24.91
		Rate (households)	52.7	13.7	77.1	87.8	25.9	4.2	31.9	57.0	71.7
		Rate (people)	60.5	19.3	82.2	91.4	34.8	6.2	39.6	64.3	77.5

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3f: Escuintla, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.89	5.26	17.83	23.77	9.12	3.98	7.96	11.94	15.92
		Rate (households)	31.4	4.8	49.4	70.7	15.6	0.0	12.1	31.9	48.4
		Rate (people)	43.8	10.1	62.8	80.9	24.5	0.0	18.8	44.3	62.2
	2006	Line	18.01	8.78	27.02	36.02	14.63	6.05	12.09	18.14	24.19
		Rate (households)	25.2	1.0	52.2	73.5	12.5	0.4	4.8	25.6	43.4
		Rate (people)	33.5	1.8	61.8	79.4	18.4	0.6	7.2	33.9	53.9
Rural	2000	Line	11.79	5.22	17.69	23.58	9.15	3.95	7.89	11.84	15.79
		Rate (households)	40.8	2.1	69.0	85.0	20.3	1.0	12.5	40.4	60.9
		Rate (people)	50.9	3.1	77.7	90.1	28.2	1.4	18.4	50.1	70.4
	2006	Line	17.97	8.76	26.95	35.93	12.73	6.03	12.06	18.09	24.13
		Rate (households)	37.9	6.1	71.7	84.6	18.9	2.5	16.0	38.3	63.1
		Rate (people)	49.2	8.9	82.5	91.9	25.9	3.0	21.7	49.7	74.2
All	2000	Line	11.81	5.23	17.72	23.63	9.14	3.95	7.91	11.86	15.82
		Rate (households)	38.4	2.8	64.0	81.4	19.1	0.7	12.4	38.2	57.7
		Rate (people)	49.2	4.8	74.2	87.9	27.3	1.1	18.5	48.7	68.5
	2006	Line	17.99	8.77	26.98	35.98	13.68	6.04	12.08	18.12	24.16
		Rate (households)	31.5	3.5	61.8	79.0	15.7	1.4	10.3	31.9	53.2
		Rate (people)	41.4	5.4	72.2	85.7	22.2	1.8	14.4	41.8	64.1

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3g: Santa Rosa, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.74	5.20	17.61	23.48	9.13	3.93	7.86	11.79	15.72
		Rate (households)	42.2	0.0	66.0	82.5	20.4	0.0	13.7	40.0	59.0
		Rate (people)	49.1	0.0	71.3	87.0	23.7	0.0	15.9	47.4	64.6
	2006	Line	18.14	8.85	27.21	36.29	13.76	6.09	12.18	18.27	24.36
		Rate (households)	34.7	3.3	58.0	79.0	17.3	1.5	9.4	34.7	49.2
		Rate (people)	44.2	5.6	66.8	84.6	24.5	3.2	13.2	44.2	59.4
Rural	2000	Line	11.45	5.07	17.18	22.91	7.43	3.83	7.67	11.50	15.34
		Rate (households)	59.5	15.9	74.5	85.3	29.7	4.1	31.4	52.5	70.6
		Rate (people)	70.2	19.9	84.9	91.1	35.7	6.1	37.4	63.8	81.1
	2006	Line	18.39	8.97	27.59	36.78	11.46	6.17	12.35	18.52	24.70
		Rate (households)	53.9	7.8	79.0	90.9	26.8	0.8	32.3	59.9	72.6
		Rate (people)	66.2	13.0	86.5	94.6	37.5	1.5	44.4	71.4	82.5
All	2000	Line	11.53	5.10	17.29	23.05	7.86	3.86	7.72	11.58	15.44
		Rate (households)	54.9	11.7	72.2	84.5	27.3	3.0	26.7	49.2	67.5
		Rate (people)	64.9	14.9	81.5	90.0	32.7	4.6	31.9	59.6	77.0
	2006	Line	18.30	8.92	27.45	36.60	12.32	6.14	12.29	18.43	24.57
		Rate (households)	46.1	6.0	70.5	86.0	22.9	1.1	23.0	49.7	63.1
		Rate (people)	57.9	10.2	79.1	90.8	32.6	2.1	32.7	61.2	73.9

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3h: Sololá, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.78	5.21	17.67	23.55	7.71	3.94	7.89	11.83	15.77
		Rate (households)	80.0	0.0	100.0	100.0	40.0	0.0	40.0	80.0	100.0
		Rate (people)	83.3	0.0	100.0	100.0	44.4	0.0	44.4	83.3	100.0
	2006	Line	18.03	8.79	27.05	36.07	11.72	6.05	12.11	18.16	24.22
		Rate (households)	51.0	13.1	70.4	82.8	25.5	2.7	26.8	51.6	64.9
		Rate (people)	60.0	18.0	78.2	88.0	32.5	3.2	34.1	60.3	72.1
Rural	2000	Line	11.73	5.19	17.60	23.47	6.99	3.93	7.86	11.78	15.71
		Rate (households)	91.6	31.0	100.0	100.0	43.1	7.4	51.0	91.6	95.8
		Rate (people)	94.8	38.1	100.0	100.0	50.6	10.3	60.7	94.8	98.0
	2006	Line	17.96	8.76	26.94	35.92	10.44	6.03	12.06	18.09	24.12
		Rate (households)	85.2	32.9	97.6	99.2	42.2	3.4	51.6	85.5	95.4
		Rate (people)	90.0	41.3	98.3	99.5	52.1	4.6	61.2	90.2	96.5
All	2000	Line	11.74	5.20	17.61	23.48	7.12	3.93	7.86	11.79	15.72
		Rate (households)	89.2	24.5	100.0	100.0	42.5	5.8	48.7	89.2	96.7
		Rate (people)	92.7	31.2	100.0	100.0	49.5	8.4	57.8	92.7	98.4
	2006	Line	18.00	8.78	27.00	36.00	11.09	6.04	12.08	18.13	24.17
		Rate (households)	66.5	22.1	82.7	90.2	33.1	3.0	38.1	67.0	78.8
		Rate (people)	74.6	29.3	88.0	93.6	42.1	3.9	47.3	74.9	84.0

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3i: Totonicapán, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.66	5.16	17.49	23.32	6.79	3.90	7.81	11.71	15.62
		Rate (households)	44.3	10.4	68.1	80.0	20.4	1.8	33.6	44.3	61.9
		Rate (people)	56.4	14.8	75.4	83.1	27.6	3.5	45.2	56.4	69.9
	2006	Line	18.09	8.82	27.13	36.18	11.86	6.07	12.14	18.22	24.29
		Rate (households)	52.0	11.1	77.6	89.1	25.9	1.4	28.0	54.2	71.5
		Rate (people)	60.5	15.4	84.3	91.8	31.1	2.8	34.2	62.6	78.3
Rural	2000	Line	11.68	5.17	17.52	23.36	6.22	3.91	7.82	11.73	15.64
		Rate (households)	76.0	25.1	95.7	98.6	37.5	8.7	50.8	76.0	90.2
		Rate (people)	83.2	34.2	97.3	98.9	47.3	12.4	63.1	83.2	92.9
	2006	Line	17.92	8.74	26.88	35.84	10.93	6.02	12.03	18.05	24.06
		Rate (households)	73.0	19.0	91.1	96.7	36.4	3.9	44.6	73.0	89.7
		Rate (people)	80.7	23.7	93.6	98.0	45.2	6.3	54.7	80.7	93.1
All	2000	Line	11.67	5.17	17.51	23.35	6.41	3.91	7.82	11.73	15.63
		Rate (households)	64.5	19.8	85.7	91.9	31.3	6.2	44.6	64.5	80.0
		Rate (people)	74.3	27.7	89.9	93.6	40.7	9.4	57.1	74.3	85.2
	2006	Line	17.99	8.78	26.99	35.99	11.34	6.04	12.08	18.12	24.16
		Rate (households)	63.2	15.3	84.8	93.2	31.6	2.8	36.9	64.2	81.3
		Rate (people)	71.9	20.0	89.5	95.2	39.0	4.7	45.7	72.8	86.6

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3j: Quetzaltenango, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.84	5.24	17.75	23.67	9.02	3.96	7.92	11.89	15.85
		Rate (households)	30.6	2.0	50.1	61.6	15.0	0.0	11.3	31.0	44.9
		Rate (people)	38.4	3.3	57.7	68.9	21.3	0.0	16.1	38.5	53.0
	2006	Line	17.92	8.74	26.88	35.84	12.19	6.02	12.03	18.05	24.06
		Rate (households)	28.2	4.0	49.7	67.5	14.1	0.1	13.1	27.8	42.8
		Rate (people)	37.0	6.1	59.9	76.9	19.7	0.3	18.6	36.3	53.4
Rural	2000	Line	11.69	5.18	17.54	23.39	8.23	3.91	7.83	11.74	15.66
		Rate (households)	55.5	11.0	80.1	90.1	27.7	4.7	25.3	53.5	75.0
		Rate (people)	65.2	13.6	84.5	91.3	34.1	4.8	31.2	62.2	81.1
	2006	Line	17.64	8.60	26.47	35.29	11.51	5.92	11.85	17.77	23.69
		Rate (households)	42.7	10.2	66.5	81.2	21.3	0.0	23.1	41.0	62.7
		Rate (people)	53.4	15.4	75.7	86.6	29.9	0.0	31.9	51.1	72.7
All	2000	Line	11.76	5.21	17.65	23.53	8.62	3.94	7.88	11.81	15.75
		Rate (households)	42.7	6.3	64.6	75.4	21.1	2.3	18.1	41.9	59.5
		Rate (people)	51.9	8.5	71.3	80.2	27.7	2.4	23.7	50.5	67.2
	2006	Line	17.80	8.68	26.70	35.60	11.90	5.98	11.95	17.93	23.90
		Rate (households)	34.2	6.6	56.6	73.2	17.0	0.1	17.2	33.2	51.0
		Rate (people)	44.0	10.1	66.7	81.1	24.1	0.2	24.3	42.6	61.7

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3k: Suchitepéquez, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.85	5.25	17.77	23.70	7.36	3.97	7.93	11.90	15.87
		Rate (households)	29.2	0.0	55.2	77.8	11.8	0.0	16.9	29.2	48.3
		Rate (people)	32.8	0.0	58.2	81.9	17.7	0.0	23.0	32.8	52.8
	2006	Line	17.93	8.74	26.90	35.86	12.79	6.02	12.04	18.06	24.08
		Rate (households)	34.5	5.6	55.2	70.6	17.2	0.5	14.1	34.5	50.0
		Rate (people)	42.3	7.7	64.8	79.0	23.5	1.2	19.7	42.3	60.1
Rural	2000	Line	11.61	5.14	17.41	23.21	7.40	3.89	7.77	11.66	15.54
		Rate (households)	55.5	9.8	83.3	95.5	27.1	4.7	29.9	51.9	79.8
		Rate (people)	65.9	14.1	88.9	98.5	35.4	6.8	38.8	61.2	86.2
	2006	Line	17.71	8.63	26.56	35.41	11.96	5.94	11.89	17.83	23.77
		Rate (households)	55.6	12.5	80.1	90.8	27.7	1.9	27.5	53.3	75.0
		Rate (people)	64.0	18.0	87.9	94.1	35.9	2.4	35.7	62.2	83.8
All	2000	Line	11.66	5.16	17.49	23.32	7.39	3.90	7.81	11.71	15.61
		Rate (households)	49.8	7.7	77.1	91.6	23.7	3.7	27.1	46.9	72.9
		Rate (people)	58.7	11.1	82.3	94.9	31.6	5.3	35.4	55.0	78.9
	2006	Line	17.80	8.68	26.70	35.60	12.31	5.98	11.95	17.93	23.90
		Rate (households)	45.6	9.2	68.3	81.2	22.7	1.3	21.1	44.4	63.1
		Rate (people)	54.7	13.6	78.0	87.6	30.6	1.9	28.9	53.6	73.7

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3l: Retalhuleu, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.83	5.24	17.75	23.67	10.86	3.96	7.92	11.88	15.85
		Rate (households)	4.6	0.0	25.8	48.1	2.3	0.0	0.0	4.6	14.7
		Rate (people)	6.1	0.0	37.0	59.3	3.7	0.0	0.0	6.1	21.0
	2006	Line	18.00	8.78	27.00	36.00	13.42	6.04	12.09	18.13	24.17
		Rate (households)	24.6	3.5	44.3	62.9	12.2	0.7	9.5	24.8	38.3
		Rate (people)	35.6	6.9	54.5	70.0	19.4	1.6	15.9	35.9	49.7
Rural	2000	Line	11.73	5.19	17.60	23.46	6.17	3.93	7.86	11.78	15.71
		Rate (households)	68.5	22.4	82.1	88.8	30.5	4.7	40.9	68.5	82.1
		Rate (people)	76.3	27.9	90.4	96.4	37.2	6.8	49.4	76.3	90.4
	2006	Line	17.86	8.71	26.79	35.72	12.93	5.99	11.99	17.98	23.98
		Rate (households)	49.3	7.3	77.8	89.3	24.6	1.6	18.2	48.5	70.4
		Rate (people)	59.5	11.1	85.9	94.3	32.9	3.0	25.6	58.7	80.4
All	2000	Line	11.76	5.21	17.64	23.53	7.59	3.94	7.88	11.81	15.75
		Rate (households)	47.4	15.0	63.5	75.3	21.2	3.2	27.4	47.4	59.9
		Rate (people)	55.1	19.5	74.3	85.2	27.1	4.8	34.5	55.1	69.4
	2006	Line	17.91	8.74	26.87	35.82	13.11	6.01	12.03	18.04	24.05
		Rate (households)	38.7	5.7	63.5	78.0	19.3	1.3	14.5	38.4	56.7
		Rate (people)	50.4	9.5	74.0	85.1	27.8	2.5	21.9	50.1	68.7

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3m: San Marcos, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.68	5.17	17.51	23.35	9.94	3.91	7.82	11.73	15.63
		Rate (households)	29.1	0.0	45.0	70.0	12.0	0.0	6.0	29.1	37.0
		Rate (people)	40.0	0.0	60.4	82.9	18.8	0.0	11.0	40.0	48.4
	2006	Line	17.96	8.76	26.94	35.92	12.29	6.03	12.06	18.09	24.12
		Rate (households)	26.0	4.6	42.8	55.9	12.4	0.0	11.8	26.0	40.3
		Rate (people)	34.1	8.1	50.5	62.7	18.7	0.0	17.8	34.1	46.6
Rural	2000	Line	11.74	5.19	17.60	23.47	6.85	3.93	7.86	11.79	15.71
		Rate (households)	68.7	20.6	82.6	88.6	34.2	10.5	42.8	68.2	78.2
		Rate (people)	77.4	26.3	87.5	91.9	41.7	13.8	51.2	76.9	84.8
	2006	Line	17.87	8.71	26.80	35.74	11.28	6.00	12.00	18.00	23.99
		Rate (households)	68.3	18.6	86.9	96.1	33.9	1.9	40.6	68.2	82.0
		Rate (people)	75.8	23.9	90.2	97.7	41.6	2.5	47.3	75.6	87.4
All	2000	Line	11.73	5.19	17.60	23.47	6.98	3.93	7.86	11.78	15.71
		Rate (households)	66.7	19.6	80.6	87.7	33.1	9.9	40.9	66.1	76.1
		Rate (people)	75.8	25.2	86.4	91.5	40.7	13.2	49.6	75.3	83.3
	2006	Line	17.89	8.73	26.84	35.78	11.53	6.01	12.01	18.02	24.03
		Rate (households)	55.9	14.5	74.0	84.3	27.6	1.4	32.2	55.8	69.8
		Rate (people)	65.5	19.9	80.4	89.0	35.9	1.9	40.0	65.3	77.3

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3n: Huehuetenango, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.44	5.07	17.17	22.89	8.05	3.83	7.66	11.49	15.32
		Rate (households)	35.9	6.8	50.4	64.9	17.9	3.8	16.1	33.3	45.8
		Rate (people)	43.7	10.2	59.2	72.1	23.4	5.8	21.2	40.6	54.5
	2006	Line	17.91	8.74	26.87	35.83	12.67	6.01	12.03	18.04	24.06
		Rate (households)	41.2	9.3	58.0	70.1	20.5	0.0	19.2	41.2	51.0
		Rate (people)	51.2	15.3	67.0	78.6	29.3	0.0	28.1	51.2	60.4
Rural	2000	Line	11.20	4.96	16.80	22.40	6.41	3.75	7.50	11.25	15.00
		Rate (households)	82.4	28.0	91.9	95.5	41.0	8.5	49.6	78.3	88.8
		Rate (people)	87.9	34.2	94.6	97.2	48.7	10.9	57.7	84.5	93.0
	2006	Line	18.23	8.89	27.35	36.46	11.06	6.12	12.24	18.36	24.48
		Rate (households)	69.4	18.2	86.4	92.7	34.7	3.7	43.2	71.4	80.9
		Rate (people)	78.2	24.3	91.3	95.7	45.1	5.6	53.9	80.1	87.7
All	2000	Line	11.25	4.98	16.87	22.49	6.71	3.76	7.53	11.29	15.06
		Rate (households)	72.5	23.5	83.1	89.1	36.1	7.5	42.6	68.7	79.7
		Rate (people)	79.7	29.8	88.1	92.6	44.0	10.0	51.0	76.4	85.9
	2006	Line	18.15	8.85	27.23	36.30	11.47	6.09	12.19	18.28	24.37
		Rate (households)	61.5	15.7	78.4	86.4	30.7	2.7	36.5	62.9	72.5
		Rate (people)	71.3	22.0	85.1	91.4	41.1	4.2	47.4	72.8	80.8

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3o: Quiché, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.45	5.07	17.17	22.89	7.30	3.83	7.66	11.50	15.33
		Rate (households)	43.3	12.0	56.4	68.6	21.6	2.3	24.8	39.7	54.4
		Rate (people)	55.8	18.7	66.4	78.4	32.6	4.0	37.8	52.2	64.7
	2006	Line	18.06	8.81	27.08	36.11	11.20	6.06	12.12	18.18	24.25
		Rate (households)	53.5	11.1	71.5	81.2	26.6	2.2	34.5	54.3	66.7
		Rate (people)	64.7	14.6	79.5	86.7	33.5	2.4	43.1	66.0	75.4
Rural	2000	Line	11.28	4.99	16.92	22.56	6.83	3.78	7.55	11.33	15.10
		Rate (households)	85.9	28.7	95.4	98.3	42.9	7.7	51.9	81.0	91.4
		Rate (people)	92.7	38.3	98.0	99.6	53.5	11.5	62.5	90.0	95.6
	2006	Line	18.64	9.09	27.96	37.28	10.44	6.26	12.52	18.77	25.03
		Rate (households)	79.7	22.7	95.1	98.3	39.5	7.6	55.6	84.0	94.1
		Rate (people)	87.2	29.8	97.4	99.3	48.1	11.2	64.6	90.1	96.8
All	2000	Line	11.30	5.00	16.95	22.60	6.89	3.78	7.57	11.35	15.13
		Rate (households)	80.0	26.4	90.0	94.2	39.9	7.0	48.2	75.3	86.3
		Rate (people)	88.0	35.8	94.0	96.9	50.8	10.6	59.3	85.2	91.6
	2006	Line	18.48	9.01	27.72	36.96	10.65	6.20	12.41	18.61	24.82
		Rate (households)	71.8	19.2	88.0	93.1	35.6	6.0	49.2	75.1	85.9
		Rate (people)	81.0	25.6	92.4	95.9	44.1	8.8	58.7	83.5	90.9

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3p: Baja Verapaz, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.65	5.16	17.48	23.31	8.54	3.90	7.80	11.70	15.61
		Rate (households)	40.5	3.4	57.9	70.5	19.8	2.6	15.1	38.1	54.7
		Rate (people)	47.7	5.0	65.7	76.4	26.3	4.8	20.8	45.4	62.4
	2006	Line	17.82	8.69	26.74	35.65	14.07	5.98	11.97	17.95	23.93
		Rate (households)	32.1	2.2	62.0	78.3	15.4	0.5	9.6	32.1	54.3
		Rate (people)	39.4	3.4	71.2	84.9	18.7	0.9	13.3	39.4	63.6
Rural	2000	Line	11.51	5.10	17.27	23.02	7.14	3.85	7.71	11.56	15.41
		Rate (households)	79.6	23.4	90.2	92.9	39.8	2.7	50.0	76.1	86.6
		Rate (people)	85.5	28.4	94.5	96.6	48.5	4.7	57.8	83.0	91.6
	2006	Line	19.03	9.28	28.54	38.05	10.04	6.39	12.77	19.16	25.55
		Rate (households)	76.6	22.6	90.8	97.4	37.9	7.1	53.8	79.0	87.6
		Rate (people)	83.2	28.5	93.7	98.5	46.3	9.0	63.0	85.0	91.2
All	2000	Line	11.54	5.11	17.31	23.08	7.41	3.86	7.73	11.59	15.45
		Rate (households)	71.0	19.0	83.1	88.0	35.4	2.7	42.4	67.8	79.6
		Rate (people)	78.2	23.8	88.9	92.6	44.1	4.7	50.6	75.6	85.9
	2006	Line	18.68	9.11	28.01	37.35	11.21	6.27	12.54	18.81	25.08
		Rate (households)	62.2	15.9	81.5	91.2	30.6	5.0	39.5	63.8	76.8
		Rate (people)	70.4	21.2	87.1	94.5	38.3	6.6	48.5	71.7	83.2

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3q: Alta Verapaz, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.61	5.14	17.42	23.22	8.22	3.89	7.77	11.66	15.55
		Rate (households)	37.5	7.1	59.2	71.3	18.7	2.9	17.2	35.6	53.5
		Rate (people)	47.7	9.0	68.0	78.4	25.5	3.2	23.3	45.3	63.9
	2006	Line	18.09	8.82	27.13	36.17	9.37	6.07	12.14	18.21	24.29
		Rate (households)	42.4	16.7	59.6	69.8	20.3	8.3	26.1	43.1	55.3
		Rate (people)	48.9	24.0	68.8	77.7	29.2	11.7	33.9	49.8	62.6
Rural	2000	Line	11.39	5.04	17.09	22.79	5.63	3.81	7.63	11.44	15.26
		Rate (households)	88.0	39.7	96.2	98.8	43.7	13.7	62.7	85.6	95.0
		Rate (people)	92.5	50.1	97.7	99.7	54.2	18.6	73.8	90.8	96.9
	2006	Line	19.41	9.47	29.11	38.82	8.18	6.52	13.03	19.55	26.06
		Rate (households)	82.8	40.0	93.7	97.3	41.3	23.6	75.3	85.1	90.8
		Rate (people)	87.2	49.0	95.7	98.6	50.6	29.3	81.6	89.5	93.5
All	2000	Line	11.43	5.06	17.14	22.85	6.01	3.83	7.65	11.48	15.30
		Rate (households)	79.3	34.1	89.7	94.0	39.4	11.8	54.8	77.0	87.8
		Rate (people)	85.9	44.0	93.3	96.6	50.0	16.3	66.4	84.1	92.0
	2006	Line	19.12	9.32	28.68	38.24	8.44	6.42	12.84	19.26	25.67
		Rate (households)	72.1	33.8	84.6	90.0	35.7	19.5	62.2	73.9	81.4
		Rate (people)	78.8	43.5	89.8	94.0	45.9	25.5	71.2	80.8	86.8

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3r: Petén, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.74	5.20	17.61	23.48	8.60	3.93	7.86	11.79	15.72
		Rate (households)	26.5	2.9	49.3	62.6	12.5	1.8	9.0	26.3	39.9
		Rate (people)	36.0	3.7	58.8	69.8	19.0	2.5	14.0	35.6	49.2
	2006	Line	17.59	8.58	26.39	35.19	12.52	5.91	11.81	17.72	23.62
		Rate (households)	24.2	4.1	39.6	56.2	11.6	0.9	11.3	22.6	33.9
		Rate (people)	34.5	6.7	51.8	69.6	19.6	1.7	19.0	32.6	46.2
Rural	2000	Line	11.58	5.13	17.37	23.16	7.43	3.88	7.75	11.63	15.51
		Rate (households)	70.6	12.5	86.0	92.6	35.2	4.8	39.0	68.2	82.2
		Rate (people)	80.1	16.5	92.4	96.6	44.6	6.0	48.6	77.9	89.8
	2006	Line	18.13	8.84	27.19	36.25	11.80	6.09	12.17	18.26	24.34
		Rate (households)	61.2	13.6	79.8	87.9	30.6	3.2	31.9	63.3	75.2
		Rate (people)	66.6	17.9	83.7	92.3	36.2	4.3	37.4	68.4	79.5
All	2000	Line	11.62	5.15	17.44	23.25	7.75	3.89	7.78	11.67	15.57
		Rate (households)	56.6	9.4	74.4	83.1	28.0	3.8	29.5	54.9	68.8
		Rate (people)	67.9	12.9	83.1	89.2	37.5	5.0	39.0	66.2	78.6
	2006	Line	17.97	8.76	26.95	35.94	12.01	6.03	12.06	18.10	24.13
		Rate (households)	49.0	10.5	66.5	77.4	24.3	2.4	25.1	49.9	61.6
		Rate (people)	57.0	14.5	74.2	85.5	31.2	3.5	31.9	57.7	69.6

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3s: Izabal, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.35	5.03	17.03	22.71	8.62	3.80	7.60	11.40	15.21
		Rate (households)	20.7	4.3	38.9	53.5	9.9	1.0	7.4	18.8	31.0
		Rate (people)	28.9	7.8	53.3	66.3	16.4	1.8	12.6	26.4	43.6
	2006	Line	17.65	8.61	26.47	35.29	13.51	5.92	11.85	17.77	23.70
		Rate (households)	21.7	2.1	38.3	55.2	10.3	0.0	5.6	21.0	31.2
		Rate (people)	33.5	4.2	51.9	69.2	16.0	0.0	10.1	32.1	44.3
Rural	2000	Line	11.16	4.94	16.74	22.33	8.43	3.74	7.47	11.21	14.95
		Rate (households)	43.7	5.9	60.1	69.3	21.0	1.0	14.2	35.5	56.8
		Rate (people)	52.7	6.6	70.0	78.9	24.9	1.4	17.7	43.7	67.1
	2006	Line	17.85	8.70	26.77	35.69	10.19	5.99	11.98	17.97	23.96
		Rate (households)	48.6	17.3	65.0	77.0	24.1	5.9	30.9	48.2	59.5
		Rate (people)	60.3	24.9	76.0	84.5	30.8	9.2	38.2	59.9	71.4
All	2000	Line	11.21	4.96	16.82	22.43	8.48	3.75	7.51	11.26	15.02
		Rate (households)	37.4	5.5	54.2	64.9	18.0	1.0	12.3	30.9	49.6
		Rate (people)	46.4	6.9	65.6	75.6	22.6	1.5	16.4	39.1	60.9
	2006	Line	17.78	8.67	26.67	35.57	11.25	5.97	11.94	17.91	23.88
		Rate (households)	39.5	12.2	55.9	69.6	19.4	3.9	22.4	39.0	49.9
		Rate (people)	51.7	18.3	68.3	79.6	26.0	6.3	29.2	51.0	62.7

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3t: Zacapa, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.02	4.88	16.53	22.04	9.44	3.69	7.38	11.07	14.76
		Rate (households)	14.7	0.0	27.7	39.5	7.1	0.0	3.1	11.8	20.7
		Rate (people)	22.0	0.0	37.9	51.5	13.0	0.0	5.0	18.8	29.6
	2006	Line	17.37	8.47	26.06	34.75	14.67	5.83	11.66	17.50	23.33
		Rate (households)	22.3	1.7	36.1	50.6	10.8	0.8	5.2	19.2	31.0
		Rate (people)	29.5	3.0	44.9	60.0	16.6	0.9	8.6	25.9	39.9
Rural	2000	Line	11.39	5.04	17.08	22.78	7.67	3.81	7.63	11.44	15.25
		Rate (households)	53.5	3.3	64.5	74.7	25.7	0.0	22.4	50.1	64.5
		Rate (people)	62.0	4.3	72.5	83.9	36.7	0.0	32.4	59.2	72.5
	2006	Line	17.53	8.55	26.30	35.06	10.90	5.88	11.77	17.65	23.54
		Rate (households)	58.0	20.6	71.9	83.1	29.0	7.1	34.8	55.0	68.1
		Rate (people)	70.9	29.8	82.1	90.2	40.2	11.3	45.9	67.9	79.2
All	2000	Line	11.26	4.98	16.88	22.51	8.31	3.77	7.54	11.31	15.07
		Rate (households)	38.5	2.0	50.3	61.1	18.5	0.0	15.0	35.3	47.6
		Rate (people)	47.5	2.7	59.9	72.2	28.1	0.0	22.4	44.5	56.9
	2006	Line	17.47	8.52	26.20	34.93	12.44	5.86	11.73	17.59	23.45
		Rate (households)	41.5	11.9	55.4	68.2	20.6	4.2	21.1	38.5	51.0
		Rate (people)	53.9	18.9	66.9	77.8	30.5	7.0	30.6	50.7	63.1

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3u: Chiquimula, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.21	4.96	16.82	22.42	8.53	3.75	7.51	11.26	15.01
		Rate (households)	13.5	0.0	22.2	34.5	6.1	0.0	2.1	11.0	18.0
		Rate (people)	18.0	0.0	28.2	45.0	8.8	0.0	2.4	14.0	24.1
	2006	Line	17.30	8.44	25.95	34.60	15.63	5.81	11.61	17.42	23.23
		Rate (households)	9.0	0.0	16.2	28.8	4.3	0.0	1.8	8.4	14.4
		Rate (people)	15.2	0.0	22.5	36.7	7.4	0.0	2.1	14.0	20.4
Rural	2000	Line	11.29	5.00	16.94	22.58	7.32	3.78	7.56	11.34	15.12
		Rate (households)	72.1	16.0	84.9	94.8	35.3	0.0	38.6	61.7	75.9
		Rate (people)	80.4	26.6	89.4	97.9	48.8	0.0	53.3	72.3	83.5
	2006	Line	17.97	8.76	26.96	35.94	9.37	6.03	12.07	18.10	24.13
		Rate (households)	66.0	29.5	81.8	91.0	33.0	11.2	47.5	66.0	79.3
		Rate (people)	75.1	37.5	88.3	94.2	41.3	15.1	57.2	75.1	86.5
All	2000	Line	11.28	4.99	16.92	22.55	7.55	3.78	7.55	11.33	15.10
		Rate (households)	59.9	12.7	71.8	82.2	29.2	0.0	31.0	51.2	63.8
		Rate (people)	68.7	21.7	78.0	88.1	41.3	0.0	43.9	61.5	72.5
	2006	Line	17.80	8.68	26.69	35.59	11.00	5.97	11.95	17.92	23.90
		Rate (households)	47.4	19.9	60.4	70.7	23.7	7.5	32.6	47.2	58.1
		Rate (people)	59.5	27.7	71.2	79.2	32.4	11.2	42.8	59.2	69.3

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3v: Jalapa, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.73	5.19	17.59	23.46	8.39	3.93	7.85	11.78	15.71
		Rate (households)	28.2	0.6	43.9	58.5	13.2	0.0	9.9	28.2	38.0
		Rate (people)	39.2	0.8	55.6	71.6	19.4	0.0	14.9	39.2	50.0
	2006	Line	18.09	8.82	27.13	36.17	13.36	6.07	12.14	18.21	24.28
		Rate (households)	29.8	3.0	55.6	70.5	14.4	1.0	14.4	30.5	41.8
		Rate (people)	38.1	4.1	62.7	77.9	18.4	1.5	18.4	38.6	49.5
Rural	2000	Line	11.46	5.07	17.18	22.91	7.32	3.84	7.67	11.51	15.34
		Rate (households)	71.8	20.0	88.1	92.5	35.8	9.1	41.4	66.1	83.6
		Rate (people)	79.8	26.9	93.9	96.3	42.5	12.8	47.3	75.1	89.5
	2006	Line	18.59	9.06	27.88	37.18	10.32	6.24	12.48	18.72	24.96
		Rate (households)	61.7	22.9	85.7	94.4	30.8	9.1	44.0	66.6	79.4
		Rate (people)	72.4	31.6	91.0	96.7	42.1	13.7	54.9	76.8	88.0
All	2000	Line	11.53	5.10	17.29	23.06	7.60	3.86	7.72	11.58	15.44
		Rate (households)	59.5	14.5	75.6	82.9	29.4	6.5	32.5	55.4	70.7
		Rate (people)	69.0	20.0	83.7	89.8	36.4	9.4	38.7	65.6	79.0
	2006	Line	18.43	8.99	27.64	36.85	11.30	6.19	12.37	18.56	24.74
		Rate (households)	50.0	15.6	74.6	85.7	24.8	6.1	33.1	53.4	65.6
		Rate (people)	61.2	22.7	81.8	90.6	34.4	9.8	43.1	64.4	75.5

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 3w: Jutiapa, poverty lines and poverty rates, round, and urban/rural/all

Region	Round	Line/rate	National				USAID	International 2005 PPP			
			100%	Food	150%	200%	'extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Urban	2000	Line	11.57	5.12	17.35	23.13	9.06	3.87	7.74	11.62	15.49
		Rate (households)	25.6	5.4	36.4	54.8	11.4	1.8	8.9	25.6	34.5
		Rate (people)	36.1	10.2	48.7	64.2	15.2	3.8	14.7	36.1	47.0
	2006	Line	17.79	8.67	26.68	35.57	14.50	5.97	11.94	17.91	23.88
		Rate (households)	22.9	4.2	41.6	57.3	10.5	1.3	5.9	22.5	39.5
		Rate (people)	31.6	9.0	52.8	68.7	16.8	2.4	11.2	31.4	50.9
Rural	2000	Line	11.33	5.02	17.00	22.67	7.04	3.79	7.59	11.38	15.18
		Rate (households)	71.0	19.8	79.8	89.9	33.5	3.9	43.0	69.0	76.0
		Rate (people)	79.2	29.8	86.8	94.3	44.4	6.3	54.7	77.3	84.1
	2006	Line	18.47	9.01	27.71	36.95	11.83	6.20	12.40	18.60	24.80
		Rate (households)	44.7	9.5	70.6	85.5	22.2	3.5	26.0	49.1	64.5
		Rate (people)	53.8	11.9	78.6	91.1	29.0	4.0	34.0	58.5	73.7
All	2000	Line	11.37	5.03	17.06	22.74	7.36	3.81	7.61	11.42	15.23
		Rate (households)	62.7	17.1	71.9	83.5	29.4	3.5	36.8	61.1	68.5
		Rate (people)	72.3	26.7	80.8	89.5	39.8	5.9	48.3	70.8	78.2
	2006	Line	18.27	8.91	27.41	36.55	12.61	6.13	12.27	18.40	24.54
		Rate (households)	37.8	7.8	61.5	76.6	18.5	2.8	19.7	40.7	56.6
		Rate (people)	47.3	11.1	71.1	84.6	25.4	3.5	27.4	50.6	67.1

Poverty lines are in units of GTQ per person per day. Poverty rates are percentages.

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
2564	Does the household have a gas or electric stove? (No; Yes)
2210	Does the household have a computer, microwave oven, conventional oven, refrigerator, washing machine, dryer, vacuum cleaner, floor polisher, or water heater? (No; Yes)
2205	What is the main construction material of the residence's floors? (Earth, sand, wood, parquet, or other; Mud bricks or cement slab; Formed cement bricks; Granite or ceramic)
2007	Does the household have a refrigerator? (No; Yes)
2068	Does the household have an electric iron? (No; Yes)
2055	What toilet arrangement does the household have? (None; Latrine or covered pit shared with other households; Latrine or covered pit used only by the household; Washable toilet (shared or private); Toilet connected to a sewer system or to a septic tank (shared or private))
2045	What type of toilet arrangement does the household have? (None; Latrine or covered pit; Washable toilet; Toilet connected to a septic tank; Toilet connected to a sewer system)
2006	What was the highest grade of education completed by the female head/spouse? (None or no data; Kindergarten or pre-school to fourth grade; There is no female head/spouse; Fifth or sixth grade; Seventh grade, adult education, or higher)
1942	Does the household have a blender? (No; Yes)
1862	What is the highest grade completed by any household member? (Fifth grade or less; Sixth grade; Seventh or eighth grade, or adult education; Ninth or tenth grade; Eleventh grade; Twelfth grade; College or higher)
1754	How many household members are aged 16 or younger? (Six or more; Five; Four; Three; Two; One; None)
1745	How many household members are aged 25 or younger? (Six or more; Five; Four; Three; Two; One or None)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
1745	How many household members are aged 17 or younger? (Six or more; Five; Four; Three; Two; One; None)
1707	How many household members are aged 17 or younger? (Six or more; Five or four; Three; Two; One; None)
1706	How many household members are aged 20 or younger? (Six or more; Five; Four; Three; Two; One or None)
1700	Does this household have a land-line and/or cellular telephone? (None; Only cellular; Only land-line; Both)
1666	In the past month, did this household use any firewood? (Yes; No)
1644	How many household members are aged 13 or younger? (Five or more; Four; Three; Two; One; None)
1642	How many household members are aged 14 or younger? (Five or more; Four; Three; Two; One; None)
1634	How many household members are aged 14 or younger? (Five or more; Four; Three; Two; One; None)
1633	How many household members work in agriculture, animal husbandry, hunting, or fishing in their main economic activity? (Three or more; Two; One; None)
1601	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any cows, bulls, or calves? (No; Yes; No one works mainly in agriculture)
1591	How many household members are aged 12 or younger? (Five or more; Four; Three; Two; One; None)
1582	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any shovels? (No; Yes; No one works mainly in agriculture)
1580	What was the highest grade of education completed by the male head/spouse? (None or no data; Kindergarten or pre-school through fifth grade; There is no male head/spouse; Sixth grade; Seventh grade, adult education, or higher)
1573	How many household members are there? (Nine or more; Eight; Seven; Six. Five; Four; Three; One or two)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
1561	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any sprayers? (No; Yes; No one works mainly in agriculture)
1554	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any horses, burros, or mules? (No; Yes; No one works mainly in agriculture)
1549	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any machetes, matchetes *corvo*, or machetes *guarizama*? (Yes; No; No one works mainly in agriculture)
1548	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any cows, bulls, calves, pigs, horses, burros, or mules? (No; Yes; No one works mainly in agriculture)
1546	If any household member works as their main economic activity in agriculture, animal husbandry, hunting, or fishing, does the household have any axes? (Yes; No; No one has agriculture, animal husbandry, hunting, or fishing as their main economic activity)
1542	If any household member works as their main economic activity in agriculture, animal husbandry, hunting, or fishing, does the household have any hoes? (Yes; No; No one has agriculture, animal husbandry, hunting, or fishing as their main economic activity)
1536	If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any pigs? (No; Yes; No one works mainly in agriculture)
1536	If any household member works as their main economic activity in agriculture, animal husbandry, hunting, or fishing, does the household have any chickens, hens, turkeys, swans, or ducks? (Yes; No; No one has agriculture, animal husbandry, hunting, or fishing as their main economic activity)
1505	How many household members are aged 14 or younger? (Four or more; Three; Two; One; None)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
1457	What is the nature of the work of the male head/spouse? (Farmers and skilled worked in agriculture and fishing; Unskilled laborers or non-specified; There is no male head/spouse; Skilled mechanical workers and operators; Does not work; Service workers and sales, managers in private and public organizations, professionals, scientists, and intellectuals, middle managers, technicians, and professionals, office workers, factory workers and machinery operators, or armed forces)
1398	Does this household have cable? (No; Yes)
1393	Does the household have a pressure cooker? (No; Yes)
1384	Is the residence connected to a sewer system? (No; Yes)
1366	What is the main construction material of the exterior walls of the residence? (Other, sticks or cane, wattle and daub, metal sheets, wood, or other; Adobe; Concrete, cinder block, or brick)
1354	What is the main economic activity of the business, institution, industry, farm, office, or company where the male head/spouse worked last week or in the last week in which the male head/spouse worked? (Agriculture, animal husbandry, hunting, and fishing; Construction; There is no male head/spouse; The male head/spouse does not work; Other activity)
1329	Does the household have a television? (No; Yes)
1235	Does the residence have a water meter? (No; Yes)
1222	Can the female head/spouse read and write? (No; Yes; No female head/spouse)
1209	How many household members are aged 14 or younger? (Three or more; Two; One; None)
1204	Does the household have a hand-mill for *nixtamal*? (Yes; No)
1179	Is anyone in this household working land that has been given to him/her or squatted on or who has agricultural land used commercially or for subsistence, be it owned, rented, or sharecropped? (Yes; No)
1100	Does the household have a stone mill? (Yes; No)
1091	Does the household have a CD stereo? (No; Yes)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
1037	In the past week, did any household member work as managers in private and public organizations, professionals, scientists, intellectuals, middle managers, technicians, and mid-level professionals, office workers, and armed forces? (No; Yes)
1022	In the past week, how many household members worked as unskilled workers? (Two or more; One; None)
1011	Does the residence have a land-line telephone connection? (No; Yes)
1009	What is the main construction material of the roof of the residence? (Thatch, palm leaves, or similar material, or shingles or other; Tiles; Metal sheets; Concrete or asbestos cement)
983	Does the household have a microwave oven? (No; Yes)
978	Did all children ages 7 to 17 enroll for the current school year? (No; No children ages 7 to 17; Yes)
975	Did all children ages 7 to 18 enroll for the current school year? (No; No children ages 7 to 18; Yes)
974	Does this household have a cellular telephone? (No; Yes)
970	Does any household member speak Spanish? (No; Yes)
940	What is or was the male head/spouse in the work that occupied the most time in the past week or in the last week worked? (Casual worker or domestic servant; Self-employed (agriculture or non-agriculture); There is no male head/spouse; Employee in a private company, or unpaid worker in a family business or elsewhere; Does not work; Government employee, or boss or associate of an agricultural or non-agricultural firm that employees people)
932	Did all children ages 7 to 16 enroll for the current school year? (No; No children ages 7 to 16; Yes)
908	Does the household have any automobiles, pick-ups, vans, minivans, SUVs, or trucks? (No; Yes)
887	Is the residence connected to a electrical grid? (No; Yes)
880	Does the residence have a land-line telephone connection? (No; Yes)
875	Does the household have any video cameras, VCR/cassette players, DVD players, or video game players? (No; Yes)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
873	How many rooms does the household use (do not include kitchen, bathrooms, hallways, garages, or rooms used only for business)? (One; Two; Three; Four; Five or more)
867	What is the main economic activity of the business, institution, industry, farm, office, or company where the female head/spouse worked last week or in the last week in which she worked? (Agriculture, animal husbandry, hunting, and fishing; Does not work; Manufacturing; Health services and social and personal services; There is no male head/spouse; Commerce)
848	Did all children ages 7 to 15 enroll for the current school year? (No; No children ages 7 to 15; Yes)
832	Is the female head/spouse of an indigenous ethnic group? (Indigenous; Spanish; There is no female head/spouse)
823	Does the household have an electric coffee maker? (No; Sí)
816	Did all children ages 7 to 13 enroll for the current school year? (No; No children ages 7 to 13; Yes)
772	Did all children ages 7 to 14 enroll for the current school year? (No; No children ages 7 to 14; Yes)
762	Did all children ages 7 to 12 enroll for the current school year? (No; No children ages 7 to 12; Yes)
719	Did all children ages 7 to 12 enroll for the current school year? (No; No children ages 7 to 11; Yes)
693	Does the female head/spouse speak an indigenous language? (Yes; No; There is no female head/spouse)
684	Does the male head/spouse know how to read and write? (No; Yes; There is no male head/spouse)
680	Is the male head/spouse of an indigenous ethnic group? (Yes; There is no male head/spouse; No)
666	Do any household members work mainly as casual laborers? (Yes; No)
655	Is the residence connected to a water-distribution network? (No; Yes)
608	Does the household have a typewriter? (No; Yes)
573	Does the household have a fan? (No; Yes)
560	Does the household have a camera? (No; Yes)
526	Does the male head/spouse speak an indigenous language? (Yes; There is no male head/spouse; No)
468	Is the residence connected to a water-distribution network? (No; Yes)
454	Do any household members attend a private school? (No; Yes)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
438	Is the toilet arrangement shared with other households or is it private? (There is no toilet arrangement; Shared; Private)
387	Do any household members work mainly as casual laborers or domestic workers? (Yes; No)
367	What type of residence does the household live in? (Farm house, improvised house, or other; Detached formal house; Apartment or room in a boarding house or in the house of another family)
353	How many rooms does the household use only as bedrooms? (None; One; Two; Three or more)
353	What is the nature of the work of the female head/spouse? (Farmers and skilled worked in agriculture and fishing; Does not work; Skilled mechanical workers and operators; Other; Professionals, scientists, and intellectuals, or there is no female head/spouse)
348	What is or was the female head/spouse in the work that occupied the most time in the past week or in the last week that she worked? (Does not work; Casual worker or domestic servant; Self-employed (agriculture or non-agriculture); Employee with a private company, unpaid worker in a family business or elsewhere; There is no female head/spouse; Government employee or boss or associate of an agricultural or non-agricultural firm that employees people)
325	In what area of the residence do household members usually cook? (In the yard (the household cooks outside), or in a room outside the residence; In a room also used for sleeping; In a passageway, or in a room inside the residence used only for cooking; In the living room or dining room, or the household does not cook)
313	Does the household have a transitor radio? (Yes; No)
288	Does the household have a motorcycle or scooter? (No; Yes)
278	How many household members are government employees or employees of a private firm (without counting domestic workers)? (None; One; Two or more)
270	Does the household have a sewing machine? (No; Yes)
268	Does the household have a hand-mill for *nixtamal*? (Yes; No)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
258	In the past week, how many household members worked for at least one hour for a wage or salary, as en employer or self-employed, sold some product, washed clothes or ironed for pay, guarded cars, etc., farmed or ranched, worked in a family business without pay, or did not work because of vacation, illness, or on leave? (Four or more; Three; Two; One; None)
227	In the past week, did the female head/spouse work for at least one hour for a wage or salary, as en employer or self-employed, sold some product, washed clothes or ironed for pay, guarded cars, etc., farmed or ranched, worked in a family business without pay, or did not work because of vacation, illness, or on leave? (No; Yes; There is no female head/spouse)
206	What is the tenancy status of the residence of the household? (Owned free-and-clear; Transferred, loaned, inherited, received as a gift, squatted on, or other; Rented, or owned with a mortgage)
166	How many stores, businesses, or workshops does this household run? (Two or more; One; None)
151	What is the current marital status of the female head/spouse? (Cohabiting; Married; Separated from cohabitor, or widowed; Separated from spouse, divorced, single, or there is no female head/spouse)
137	In the past week, how many household members worked as service workers and salespeople, skilled mechanical workers and operators, or factory workers and machinery operators? (None; One; Two or more)
117	What is the current marital status of the male head/spouse? (Cohabiting; Married; Other)
108	What is the structure of household headship? (Both male and female heads/spouses; Female head/spouse only; Male head/spouse only)
89	How old is the female head/spouse? (Up to 49; 60 or more; 49 to 59; There is no female head/spouse)
87	Does any household member know how to read and write? (No; Yes)
79	Does the household have any bicycles, motorcycles, or scooters? (No; Yes)

Figure 4: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly indicative of poverty)
79	Does the household have any transistor radios, CD stereos, tape players or radio tape players, or Walkmans? (No; Yes)
67	In the past week, did the male head/spouse work for at least one hour for a wage or salary, as en employer or self-employed, sold some product, washed clothes or ironed for pay, guarded cars, etc., farmed or ranched, worked in a family business without pay, or did not work because of vacation, illness, or on leave? (Yes; There is no male head/spouse; No)
51	How old is the male head/spouse? (25 to 49; 50 or more; Up to 24; There is no male head/spouse)
33	How many household members are mainly self-employed, with or without employees and in agriculture or non-agriculture? (None; One; Two or more)
31	How many bicycles does the household have? (None; One; Two or more)
20	Does the household have a tape player or radio tape player? (No; Yes)

Source: 2006 *Encuesta Nacional de Condiciones de Vida* and the national poverty line.

National Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

(and tables pertaining to all poverty lines)

Figure 5 (National line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	100.0
5–9	100.0
10–14	99.1
15–19	99.2
20–24	91.7
25–29	90.0
30–34	83.0
35–39	70.3
40–44	60.3
45–49	52.2
50–54	25.3
55–59	25.5
60–64	8.1
65–69	7.3
70–74	3.9
75–79	4.4
80–84	1.9
85–89	0.2
90–94	0.0
95–100	0.0

Figure 6 (National line): Derivation of estimated poverty likelihoods associated with scores

Score	Households below poverty line		All households at score		Poverty likelihood (estimated, %)
0–4	622	÷	622	=	100.0
5–9	1,563	÷	1,563	=	100.0
10–14	2,473	÷	2,496	=	99.1
15–19	2,858	÷	2,880	=	99.2
20–24	4,790	÷	5,225	=	91.7
25–29	5,131	÷	5,703	=	90.0
30–34	5,005	÷	6,030	=	83.0
35–39	3,736	÷	5,317	=	70.3
40–44	4,573	÷	7,578	=	60.3
45–49	2,901	÷	5,560	=	52.2
50–54	1,557	÷	6,145	=	25.3
55–59	1,780	÷	6,971	=	25.5
60–64	665	÷	8,248	=	8.1
65–69	524	÷	7,214	=	7.3
70–74	251	÷	6,461	=	3.9
75–79	357	÷	8,088	=	4.4
80–84	127	÷	6,737	=	1.9
85–89	10	÷	4,245	=	0.2
90–94	0	÷	2,752	=	0.0
95–100	0	÷	164	=	0.0

Number of all households normalized to sum to 100,000.

Figure 7 (All poverty lines): Distribution of household poverty likelihoods across ranges demarcated by poverty lines

	Likelihood of having expenditure in range demarcated by poverty lines per day per capita								
	<$1.25/day	=>$1.25/day and <Food	=>Food and <USAID	=>USAID and <$2.50/day	=>$2.50/day and <National	=>National and <$5.00/day	=>$5.00/day and <150% Natl.	=>150% Natl. and <200% Natl.	=>200% Natl.
Score	<GTQ6.13	=>GTQ6.13 and <GTQ8.91	=>GTQ8.91 and <GTQ10.99	=>GTQ10.99 and <GTQ12.27	=>GTQ12.27 and <GTQ18.28	=>GTQ18.28 and <GTQ24.54	=>GTQ24.54 and <GTQ27.41	=>GTQ27.41 and <GTQ36.55	=>GTQ36.55
0–4	30.2	41.5	14.5	13.2	0.6	0.0	0.0	0.0	0.0
5–9	16.4	48.1	17.1	13.7	4.8	0.0	0.0	0.0	0.0
10–14	21.4	43.0	16.5	12.7	5.5	0.7	0.0	0.0	0.2
15–19	16.5	28.7	29.2	14.1	10.7	0.5	0.0	0.3	0.0
20–24	9.3	24.2	25.7	9.3	23.2	7.4	0.6	0.3	0.0
25–29	9.5	15.5	25.3	13.0	26.7	6.7	1.9	1.4	0.0
30–34	2.1	13.8	25.2	5.0	36.9	12.9	1.3	2.2	0.6
35–39	1.5	9.8	19.6	3.6	35.8	19.1	2.9	6.6	1.2
40–44	2.0	5.3	14.0	5.3	33.8	19.5	5.5	10.3	4.4
45–49	0.5	1.7	9.6	3.8	36.6	26.7	4.2	12.6	4.3
50–54	0.0	0.7	7.1	0.0	17.5	28.9	9.8	25.9	10.1
55–59	0.0	0.4	4.2	0.0	21.0	30.3	7.7	24.3	12.2
60–64	0.0	0.0	1.3	0.0	6.8	21.8	9.3	34.3	26.5
65–69	0.0	0.1	0.7	0.0	6.5	16.1	11.6	21.2	43.8
70–74	0.0	0.0	1.6	0.0	2.3	7.7	4.3	15.4	68.8
75–79	0.0	0.0	0.1	0.0	4.4	2.6	4.7	18.0	70.3
80–84	0.0	0.0	0.0	0.0	1.9	2.0	4.0	16.2	76.0
85–89	0.0	0.0	0.1	0.0	0.1	0.9	0.5	2.6	95.8
90–94	0.0	0.0	0.0	0.0	0.0	1.0	0.0	3.4	95.5
95–100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

Note: All poverty likelihoods in percentage units.

The $3.75/day line is omitted because it is almost the same as the national line.

Figure 8 (National line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+1.3	1.2	1.5	1.9
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.6	0.7	0.9
15–19	+1.5	1.1	1.3	1.7
20–24	–2.6	2.3	2.4	3.0
25–29	+6.9	3.1	3.8	5.0
30–34	–2.8	2.6	3.0	3.8
35–39	–7.1	4.9	5.1	5.7
40–44	–2.5	3.0	3.6	4.8
45–49	–0.4	3.4	4.0	5.3
50–54	–19.4	11.3	11.6	12.4
55–59	–7.3	5.4	5.7	6.3
60–64	+1.1	1.1	1.3	1.7
65–69	+0.9	1.3	1.5	1.9
70–74	+3.2	0.2	0.3	0.4
75–79	+3.9	0.2	0.2	0.3
80–84	+1.4	0.3	0.3	0.4
85–89	+0.2	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 9 (All poverty lines): Differences, precision of differences, and the α factor for bootstrapped estimates of poverty rates for groups of households at a point in time, 2006 scorecard applied to the 2006 validation sample and to the 2000 ENCOVI

	Poverty line							
	National				USAID	International 2005 PPP		
	100%	Food	150%	200%	'Extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Estimate minus true value									
2006 scorecard applied to 2006 validation	–0.6	–0.3	–0.5	–2.8	–1.6	+0.1	–0.3	+0.2	+0.8
2006 scorecard applied to all 2000	–1.1	+1.1	–2.4	–0.3	–0.2	–0.3	+2.7	+0.3	–1.7
Precision of difference									
2006 scorecard applied to 2006 validation	0.4	0.3	0.6	0.9	0.4	0.1	0.4	0.4	0.5
2006 scorecard applied to all 2000	0.7	0.3	0.8	0.7	0.6	0.2	0.5	0.7	0.8
α factor for sample size									
2006 scorecard applied to 2006 validation	0.70	0.77	0.97	1.39	0.84	0.67	0.67	0.63	0.80
2006 scorecard applied to all 2000	1.07	0.83	1.18	1.20	1.10	1.03	0.96	1.07	1.11
Precision is measured as 90-percent confidence intervals in units of +/– percentage points.									
Differences and precision estimated from 1,000 bootstraps of size n = 16,384.									
α is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.									

Figure 10 (National line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.9	42.9	55.2	75.2
4	–1.3	27.8	35.6	51.8
8	–0.9	19.3	25.0	35.9
16	–0.8	14.8	18.4	25.6
32	–0.6	10.3	12.6	16.6
64	–0.6	7.6	9.5	12.3
128	–0.5	5.2	6.3	8.4
256	–0.5	3.5	4.3	5.8
512	–0.6	2.5	2.9	4.0
1,024	–0.6	1.8	2.2	2.8
2,048	–0.6	1.3	1.5	2.0
4,096	–0.6	0.9	1.1	1.4
8,192	–0.6	0.6	0.7	1.0
16,384	–0.6	0.4	0.5	0.7

Figure 11 (All poverty lines): Differences, precision of differences, and the α factor for bootstrapped estimates of changes in group's poverty rates between two points in time, 2007 scorecard applied to the 2000 ENCOVI

	Poverty line							
	National				USAID	International 2005 PPP		
	100%	Food	150%	200%	'Extreme'	$1.25/day	$2.50/day	$3.75/day	$5.00/day
Estimated change minus true change									
2006 scorecard applied to 2006 validation and all 2000	–0.5	+1.4	–2.0	+2.5	+1.4	–0.4	+3.0	+0.1	–2.6
Precision of estimated change minus true change									
2006 scorecard applied to 2006 validation and all 2000	0.8	0.4	1.0	1.1	0.7	0.3	0.7	0.8	0.9
α factor for sample size									
2006 scorecard applied to 2006 validation and all 2000	1.31	1.10	1.56	1.89	1.34	1.19	1.14	1.26	1.42
Precision is measured as 90-percent confidence intervals in units of +/– percentage points.									
Differences and precision estimated from 1,000 bootstraps of size n = 16,384.									
α is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.									

Figure 12 (National line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 13 (All poverty lines): Possible types of outcomes from targeting by poverty score

True poverty status	Targeting segment: Targeted	Targeting segment: Non-targeted
Below poverty line	**Inclusion** Under poverty line Correctly Targeted	**Undercoverage** Under poverty line Mistakenly Non-targeted
Above poverty line	**Leakage** Above poverty line Mistakenly Targeted	**Exclusion** Above poverty line Correctly Non-targeted

Figure 14 (National line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	40.1	0.0	59.2	59.8	–97.0
5–9	2.2	38.6	0.0	59.2	61.4	–89.3
10–14	4.6	36.1	0.1	59.2	63.8	–77.2
15–19	7.4	33.3	0.1	59.1	66.5	–63.2
20–24	12.4	28.3	0.3	58.9	71.3	–38.1
25–29	17.5	23.2	1.0	58.3	75.8	–11.7
30–34	22.8	18.0	1.8	57.5	80.3	+16.1
35–39	26.7	14.0	3.1	56.1	82.8	+38.8
40–44	31.6	9.1	5.8	53.5	85.1	+69.4
45–49	34.4	6.3	8.5	50.7	85.1	+79.0
50–54	36.9	3.8	12.2	47.1	84.0	+70.1
55–59	38.7	2.0	17.3	41.9	80.6	+57.4
60–64	39.7	1.0	24.6	34.6	74.4	+39.6
65–69	40.4	0.4	31.2	28.1	68.4	+23.4
70–74	40.5	0.2	37.5	21.8	62.3	+8.0
75–79	40.7	0.0	45.4	13.9	54.5	–11.5
80–84	40.7	0.0	52.1	7.2	47.9	–27.9
85–89	40.7	0.0	56.3	2.9	43.7	–38.3
90–94	40.7	0.0	59.1	0.2	40.9	–45.0
95–100	40.7	0.0	59.3	0.0	40.7	–45.4

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (National line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	97.1	1.5	33.4:1
5–9	2.2	99.0	5.3	103.5:1
10–14	4.7	98.8	11.4	83.5:1
15–19	7.6	98.2	18.2	54.4:1
20–24	12.8	97.3	30.5	35.6:1
25–29	18.5	94.7	43.0	17.8:1
30–34	24.5	92.8	55.9	13.0:1
35–39	29.8	89.5	65.5	8.5:1
40–44	37.4	84.5	77.6	5.5:1
45–49	43.0	80.1	84.5	4.0:1
50–54	49.1	75.2	90.6	3.0:1
55–59	56.1	69.1	95.1	2.2:1
60–64	64.3	61.7	97.5	1.6:1
65–69	71.6	56.4	99.0	1.3:1
70–74	78.0	52.0	99.5	1.1:1
75–79	86.1	47.3	99.9	0.9:1
80–84	92.8	43.9	100.0	0.8:1
85–89	97.1	42.0	100.0	0.7:1
90–94	99.8	40.8	100.0	0.7:1
95–100	100.0	40.7	100.0	0.7:1

Food Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 (Food line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	71.7
5–9	64.5
10–14	64.4
15–19	45.3
20–24	33.5
25–29	25.0
30–34	15.9
35–39	11.3
40–44	7.3
45–49	2.2
50–54	0.7
55–59	0.4
60–64	0.0
65–69	0.1
70–74	0.0
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 8 (Food line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	**Diff.**	**90-percent**	**95-percent**	**99-percent**
0–4	+31.8	10.2	12.2	15.9
5–9	–3.7	5.8	7.0	9.0
10–14	–0.3	4.5	5.5	7.5
15–19	–4.7	4.5	5.3	7.4
20–24	–5.8	4.7	4.9	5.6
25–29	+2.7	2.6	3.0	4.1
30–34	–2.5	2.5	3.0	3.9
35–39	–8.8	6.2	6.4	7.7
40–44	+3.5	0.9	1.1	1.3
45–49	–0.3	1.1	1.3	1.6
50–54	+0.5	0.1	0.2	0.2
55–59	+0.4	0.0	0.0	0.0
60–64	–0.1	0.1	0.1	0.1
65–69	+0.1	0.0	0.0	0.0
70–74	+0.0	0.0	0.0	0.0
75–79	+0.0	0.0	0.0	0.0
80–84	+0.0	0.0	0.0	0.0
85–89	+0.0	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (Food line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.9	34.2	45.0	65.8
4	–0.9	22.1	29.1	45.8
8	–0.3	12.9	18.3	30.7
16	–0.3	9.1	11.5	18.1
32	–0.3	6.4	8.1	12.4
64	–0.3	4.9	5.9	7.8
128	–0.3	3.4	4.2	5.1
256	–0.3	2.3	2.8	4.0
512	–0.3	1.7	1.9	2.4
1,024	–0.3	1.2	1.4	1.9
2,048	–0.3	0.9	1.0	1.3
4,096	–0.3	0.6	0.7	0.9
8,192	–0.3	0.4	0.5	0.6
16,384	–0.3	0.3	0.4	0.4

Figure 12 (Food line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 (Food line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.4	9.5	0.3	89.9	90.2	–90.0
5–9	1.4	8.4	0.7	89.4	90.8	–63.2
10–14	3.0	6.9	1.7	88.4	91.4	–22.2
15–19	4.3	5.5	3.2	86.9	91.3	+20.7
20–24	6.1	3.7	6.6	83.5	89.6	+32.6
25–29	7.6	2.3	10.9	79.2	86.8	–10.6
30–34	8.6	1.2	15.9	74.3	82.9	–61.0
35–39	9.2	0.6	20.6	69.5	78.8	–108.8
40–44	9.7	0.2	27.7	62.4	72.1	–181.2
45–49	9.8	0.1	33.2	57.0	66.8	–236.2
50–54	9.8	0.0	39.3	50.8	60.7	–298.3
55–59	9.8	0.0	46.2	43.9	53.7	–368.8
60–64	9.9	0.0	54.5	35.7	45.5	–452.3
65–69	9.9	0.0	61.7	28.4	38.3	–525.4
70–74	9.9	0.0	68.1	22.0	31.9	–590.9
75–79	9.9	0.0	76.2	13.9	23.8	–673.0
80–84	9.9	0.0	83.0	7.2	17.0	–741.3
85–89	9.9	0.0	87.2	2.9	12.8	–784.3
90–94	9.9	0.0	90.0	0.2	10.0	–812.2
95–100	9.9	0.0	90.1	0.0	9.9	–813.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (Food line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	58.6	3.7	1.4:1
5–9	2.2	66.2	14.7	2.0:1
10–14	4.7	63.9	30.3	1.8:1
15–19	7.6	57.5	44.1	1.4:1
20–24	12.8	48.0	62.2	0.9:1
25–29	18.5	41.0	76.9	0.7:1
30–34	24.5	35.2	87.5	0.5:1
35–39	29.8	31.0	93.7	0.4:1
40–44	37.4	25.9	98.1	0.3:1
45–49	43.0	22.8	99.4	0.3:1
50–54	49.1	20.0	99.7	0.3:1
55–59	56.1	17.6	99.8	0.2:1
60–64	64.3	15.3	100.0	0.2:1
65–69	71.6	13.8	100.0	0.2:1
70–74	78.0	12.6	100.0	0.1:1
75–79	86.1	11.5	100.0	0.1:1
80–84	92.8	10.6	100.0	0.1:1
85–89	97.1	10.2	100.0	0.1:1
90–94	99.8	9.9	100.0	0.1:1
95–100	100.0	9.9	100.0	0.1:1

150% of the National Poverty Line Tables

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 (150% of the national line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	100.0
5–9	100.0
10–14	99.8
15–19	99.7
20–24	99.7
25–29	98.6
30–34	97.2
35–39	92.2
40–44	85.3
45–49	83.0
50–54	64.0
55–59	63.5
60–64	39.2
65–69	35.0
70–74	15.9
75–79	11.7
80–84	7.8
85–89	1.6
90–94	1.0
95–100	0.0

Figure 8 (150% of the national line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	–0.3	0.2	0.2	0.2
20–24	–0.3	0.1	0.1	0.1
25–29	–0.9	0.6	0.6	0.7
30–34	–0.7	0.8	1.0	1.2
35–39	–2.1	1.9	2.1	2.7
40–44	+3.6	2.7	3.1	4.1
45–49	–2.9	2.5	2.7	3.5
50–54	–15.2	8.9	9.1	9.9
55–59	+3.8	3.4	4.1	5.4
60–64	–10.3	6.7	7.1	8.0
65–69	+1.5	2.8	3.2	4.2
70–74	–5.0	4.4	4.7	5.7
75–79	+9.0	0.5	0.6	0.8
80–84	+1.2	1.3	1.7	2.1
85–89	+1.3	0.2	0.2	0.3
90–94	+0.9	0.1	0.1	0.2
95–100	+0.0	0.0	0.0	0.0

Figure 10 (150% of the national line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.4	44.9	54.9	77.5
4	–1.0	31.8	39.1	54.2
8	–0.9	24.2	30.1	42.0
16	–0.5	19.2	22.1	28.5
32	–0.5	13.8	16.5	21.6
64	–0.4	9.4	11.4	14.7
128	–0.4	6.9	8.1	10.4
256	–0.4	4.8	5.8	7.3
512	–0.4	3.5	4.2	5.5
1,024	–0.4	2.4	3.0	4.0
2,048	–0.5	1.7	2.1	2.7
4,096	–0.5	1.2	1.5	1.9
8,192	–0.5	0.9	1.0	1.4
16,384	–0.5	0.6	0.7	0.9

Figure 12 (150% of the national line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 (150% of the national line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	57.7	0.0	41.7	42.3	–97.9
5–9	2.2	56.1	0.0	41.7	43.9	–92.5
10–14	4.7	53.6	0.0	41.7	46.4	–83.9
15–19	7.6	50.7	0.0	41.7	49.3	–74.1
20–24	12.8	45.5	0.0	41.7	54.5	–56.1
25–29	18.4	39.9	0.1	41.6	60.1	–36.7
30–34	24.3	34.0	0.2	41.5	65.8	–16.2
35–39	29.4	28.9	0.4	41.3	70.6	+1.6
40–44	36.0	22.3	1.4	40.3	76.3	+26.0
45–49	40.6	17.7	2.4	39.3	79.9	+43.3
50–54	45.4	12.9	3.7	38.0	83.4	+62.1
55–59	49.4	8.9	6.6	35.1	84.5	+81.0
60–64	53.2	5.1	11.1	30.6	83.8	+80.9
65–69	56.0	2.3	15.5	26.2	82.2	+73.3
70–74	57.1	1.2	20.9	20.8	77.9	+64.2
75–79	57.7	0.6	28.4	13.3	71.1	+51.3
80–84	58.2	0.1	34.6	7.1	65.3	+40.6
85–89	58.3	0.0	38.8	2.9	61.2	+33.4
90–94	58.3	0.0	41.5	0.2	58.5	+28.7
95–100	58.3	0.0	41.7	0.0	58.3	+28.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (150% of the national line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	100.0	1.1	Only poor targeted
5–9	2.2	100.0	3.7	Only poor targeted
10–14	4.7	100.0	8.0	Only poor targeted
15–19	7.6	100.0	13.0	Only poor targeted
20–24	12.8	100.0	21.9	Only poor targeted
25–29	18.5	99.7	31.6	319.0:1
30–34	24.5	99.2	41.7	121.6:1
35–39	29.8	98.5	50.4	65.8:1
40–44	37.4	96.3	61.8	25.9:1
45–49	43.0	94.4	69.6	16.9:1
50–54	49.1	92.4	77.9	12.2:1
55–59	56.1	88.2	84.8	7.4:1
60–64	64.3	82.7	91.3	4.8:1
65–69	71.6	78.3	96.1	3.6:1
70–74	78.0	73.2	98.0	2.7:1
75–79	86.1	67.0	99.0	2.0:1
80–84	92.8	62.7	99.9	1.7:1
85–89	97.1	60.0	100.0	1.5:1
90–94	99.8	58.4	100.0	1.4:1
95–100	100.0	58.3	100.0	1.4:1

200% of the National Poverty Line Tables

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 (200% of the national line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	100.0
5–9	100.0
10–14	99.8
15–19	100.0
20–24	100.0
25–29	100.0
30–34	99.4
35–39	98.8
40–44	95.6
45–49	95.7
50–54	89.9
55–59	87.8
60–64	73.5
65–69	56.2
70–74	31.2
75–79	29.7
80–84	24.1
85–89	4.2
90–94	4.5
95–100	0.0

Figure 8 (200% of the national line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	+0.0	0.0	0.0	0.0
20–24	+0.0	0.0	0.0	0.0
25–29	+0.0	0.0	0.0	0.0
30–34	+0.8	0.7	0.8	1.0
35–39	+3.7	1.8	2.1	2.6
40–44	+2.0	1.8	2.0	2.6
45–49	–1.4	1.2	1.2	1.5
50–54	–2.8	2.4	2.5	3.0
55–59	–3.8	2.6	2.6	2.9
60–64	+6.3	2.9	3.5	4.6
65–69	–7.1	5.1	5.3	5.9
70–74	–32.9	18.2	18.5	19.3
75–79	+5.1	2.8	3.3	4.2
80–84	+12.7	1.7	2.0	2.5
85–89	–22.3	13.5	14.1	14.9
90–94	+4.2	0.2	0.2	0.3
95–100	+0.0	0.0	0.0	0.0

Figure 10 (200% of the national line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.2	47.7	59.5	74.9
4	–1.4	39.2	48.3	63.8
8	–1.3	30.2	37.3	49.9
16	–2.0	24.0	27.8	35.9
32	–2.0	16.8	20.4	27.2
64	–2.0	12.4	14.7	18.7
128	–2.6	8.6	10.3	13.4
256	–2.8	6.3	7.6	10.1
512	–2.9	4.6	5.3	7.2
1,024	–2.9	3.2	3.8	4.8
2,048	–2.9	2.2	2.7	3.6
4,096	–2.8	1.6	1.9	2.4
8,192	–2.8	1.1	1.4	1.9
16,384	–2.8	0.9	1.0	1.3

Figure 12 (200% of the national line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 (200% of the national line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	70.9	0.0	28.5	29.1	–98.3
5–9	2.2	69.4	0.0	28.5	30.6	–93.9
10–14	4.7	66.9	0.0	28.5	33.1	–86.9
15–19	7.6	64.0	0.0	28.5	36.0	–78.9
20–24	12.8	58.8	0.0	28.5	41.2	–64.3
25–29	18.5	53.0	0.0	28.5	47.0	–48.3
30–34	24.4	47.1	0.1	28.4	52.8	–31.6
35–39	29.6	41.9	0.2	28.3	57.9	–16.9
40–44	36.9	34.6	0.5	28.0	64.9	+3.9
45–49	42.3	29.3	0.7	27.8	70.0	+19.2
50–54	48.0	23.5	1.1	27.4	75.4	+35.8
55–59	54.1	17.5	2.0	26.4	80.5	+54.0
60–64	59.9	11.6	4.4	24.0	83.9	+73.7
65–69	64.7	6.8	6.8	21.6	86.4	+90.5
70–74	67.8	3.7	10.2	18.3	86.1	+85.8
75–79	70.0	1.5	16.1	12.4	82.4	+77.5
80–84	71.0	0.6	21.9	6.6	77.6	+69.4
85–89	71.5	0.0	25.6	2.9	74.4	+64.2
90–94	71.5	0.0	28.3	0.2	71.7	+60.4
95–100	71.5	0.0	28.5	0.0	71.5	+60.2

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (200% of the national line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	100.0	0.9	Only poor targeted
5–9	2.2	100.0	3.1	Only poor targeted
10–14	4.7	100.0	6.5	Only poor targeted
15–19	7.6	100.0	10.6	Only poor targeted
20–24	12.8	100.0	17.9	Only poor targeted
25–29	18.5	100.0	25.8	Only poor targeted
30–34	24.5	99.7	34.2	354.3:1
35–39	29.8	99.4	41.4	155.9:1
40–44	37.4	98.7	51.6	78.4:1
45–49	43.0	98.4	59.1	60.2:1
50–54	49.1	97.8	67.2	44.8:1
55–59	56.1	96.4	75.6	26.8:1
60–64	64.3	93.1	83.7	13.5:1
65–69	71.6	90.5	90.5	9.5:1
70–74	78.0	86.9	94.8	6.7:1
75–79	86.1	81.3	97.9	4.4:1
80–84	92.8	76.4	99.2	3.2:1
85–89	97.1	73.6	99.9	2.8:1
90–94	99.8	71.7	100.0	2.5:1
95–100	100.0	71.5	100.0	2.5:1

USAID "Extreme" Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 (USAID "extreme" line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	86.2
5–9	81.5
10–14	80.9
15–19	74.5
20–24	59.2
25–29	50.2
30–34	41.1
35–39	30.9
40–44	21.3
45–49	11.8
50–54	7.8
55–59	4.6
60–64	1.3
65–69	0.8
70–74	1.6
75–79	0.1
80–84	0.0
85–89	0.1
90–94	0.0
95–100	0.0

Figure 8 (USAID "extreme" line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+1.9	6.1	7.5	10.2
5–9	+1.8	5.7	6.8	8.8
10–14	–2.4	3.5	4.4	5.6
15–19	+3.5	3.9	4.5	5.8
20–24	–2.8	3.1	3.8	4.7
25–29	+9.1	3.2	4.0	5.2
30–34	–1.7	3.1	3.7	5.3
35–39	–10.5	7.2	7.5	8.3
40–44	–3.5	3.2	3.6	4.6
45–49	–12.4	8.1	8.5	9.2
50–54	–4.1	3.1	3.3	3.8
55–59	–6.7	4.6	4.9	5.3
60–64	–2.3	1.6	1.7	1.9
65–69	–1.6	1.2	1.3	1.4
70–74	+1.6	0.0	0.0	0.0
75–79	+0.0	0.0	0.0	0.0
80–84	+0.0	0.0	0.0	0.0
85–89	+0.1	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (USAID "extreme" line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.5	44.2	56.0	74.4
4	–2.1	29.2	37.2	53.4
8	–1.6	20.1	26.4	35.3
16	–1.5	14.3	17.2	24.1
32	–1.6	9.6	11.3	15.4
64	–1.7	6.7	7.6	10.8
128	–1.5	4.6	5.5	7.7
256	–1.5	3.3	3.9	5.4
512	–1.6	2.4	2.8	3.6
1,024	–1.5	1.7	2.1	2.7
2,048	–1.6	1.3	1.5	1.9
4,096	–1.6	0.9	1.1	1.4
8,192	–1.6	0.6	0.7	0.9
16,384	–1.6	0.4	0.5	0.7

Figure 12 (USAID "extreme" line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 (USAID "extreme" line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.5	19.4	0.1	80.0	80.5	–94.3
5–9	1.9	18.1	0.3	79.7	81.6	–79.7
10–14	3.9	16.1	0.8	79.2	83.1	–57.2
15–19	5.8	14.1	1.7	78.3	84.2	–32.8
20–24	8.9	11.0	3.9	76.2	85.1	+8.8
25–29	11.4	8.5	7.0	73.0	84.5	+50.2
30–34	14.0	5.9	10.5	69.6	83.6	+47.5
35–39	15.7	4.2	14.2	65.9	81.6	+29.0
40–44	17.4	2.5	20.0	60.0	77.4	–0.5
45–49	18.3	1.7	24.7	55.4	73.6	–24.0
50–54	18.9	1.0	30.2	49.9	68.8	–51.5
55–59	19.4	0.5	36.7	43.4	62.8	–84.0
60–64	19.7	0.2	44.6	35.5	55.2	–123.8
65–69	19.9	0.0	51.6	28.4	48.3	–159.1
70–74	19.9	0.0	58.1	22.0	41.9	–191.5
75–79	19.9	0.0	66.2	13.9	33.8	–232.0
80–84	19.9	0.0	72.9	7.2	27.1	–265.8
85–89	19.9	0.0	77.2	2.9	22.8	–287.1
90–94	19.9	0.0	79.9	0.2	20.1	–300.9
95–100	19.9	0.0	80.1	0.0	19.9	–301.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (USAID "extreme" line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	81.6	2.5	4.4:1
5–9	2.2	84.8	9.3	5.6:1
10–14	4.7	82.4	19.3	4.7:1
15–19	7.6	77.0	29.2	3.4:1
20–24	12.8	69.6	44.7	2.3:1
25–29	18.5	61.9	57.4	1.6:1
30–34	24.5	57.3	70.5	1.3:1
35–39	29.8	52.6	78.7	1.1:1
40–44	37.4	46.5	87.3	0.9:1
45–49	43.0	42.5	91.7	0.7:1
50–54	49.1	38.5	95.0	0.6:1
55–59	56.1	34.6	97.5	0.5:1
60–64	64.3	30.7	99.0	0.4:1
65–69	71.6	27.8	99.9	0.4:1
70–74	78.0	25.5	99.9	0.3:1
75–79	86.1	23.1	100.0	0.3:1
80–84	92.8	21.5	100.0	0.3:1
85–89	97.1	20.5	100.0	0.3:1
90–94	99.8	20.0	100.0	0.2:1
95–100	100.0	19.9	100.0	0.2:1

$1.25/day 2005 PPP Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 ($1.25/day 2005 PPP line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	30.2
5–9	16.4
10–14	21.4
15–19	16.5
20–24	9.3
25–29	9.5
30–34	2.1
35–39	1.5
40–44	2.0
45–49	0.5
50–54	0.0
55–59	0.0
60–64	0.0
65–69	0.0
70–74	0.0
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 8 ($1.25/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–0.5	9.3	11.0	14.4
5–9	–8.2	6.4	7.1	7.8
10–14	+1.7	3.6	4.3	6.1
15–19	–3.2	3.2	4.0	5.1
20–24	+1.5	1.5	1.8	2.5
25–29	+6.3	0.9	1.1	1.4
30–34	–7.7	4.9	5.1	5.6
35–39	+1.5	0.0	0.0	0.0
40–44	+1.7	0.2	0.3	0.3
45–49	+0.3	0.2	0.2	0.3
50–54	+0.0	0.0	0.0	0.0
55–59	+0.0	0.0	0.0	0.0
60–64	+0.0	0.0	0.0	0.0
65–69	+0.0	0.0	0.0	0.0
70–74	+0.0	0.0	0.0	0.0
75–79	+0.0	0.0	0.0	0.0
80–84	+0.0	0.0	0.0	0.0
85–89	+0.0	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($1.25/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.3	16.7	28.9	46.0
4	–0.0	11.8	17.4	30.8
8	+0.1	7.5	10.4	16.4
16	+0.0	5.0	6.2	8.6
32	+0.1	3.3	4.1	5.1
64	+0.1	2.4	2.9	3.8
128	+0.1	1.7	2.0	2.7
256	+0.1	1.2	1.5	1.9
512	+0.1	0.8	1.0	1.3
1,024	+0.1	0.6	0.7	1.0
2,048	+0.1	0.4	0.5	0.6
4,096	+0.1	0.3	0.3	0.4
8,192	+0.1	0.2	0.3	0.3
16,384	+0.1	0.1	0.2	0.2

Figure 12 ($1.25/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 ($1.25/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.2	2.9	0.4	96.5	96.8	–72.1
5–9	0.8	2.3	1.4	95.5	96.2	–5.1
10–14	1.3	1.8	3.4	93.5	94.8	–9.4
15–19	1.9	1.3	5.7	91.2	93.0	–84.0
20–24	2.4	0.7	10.4	86.5	88.9	–234.5
25–29	2.6	0.5	15.8	81.0	83.7	–410.7
30–34	3.0	0.1	21.5	75.4	78.4	–592.8
35–39	3.0	0.1	26.8	70.1	73.1	–764.2
40–44	3.1	0.0	34.3	62.6	65.6	–1,006.6
45–49	3.1	0.0	39.9	57.0	60.1	–1,184.9
50–54	3.1	0.0	46.0	50.9	54.0	–1,382.9
55–59	3.1	0.0	53.0	43.9	47.0	–1,607.5
60–64	3.1	0.0	61.2	35.7	38.8	–1,873.3
65–69	3.1	0.0	68.4	28.4	31.6	–2,105.7
70–74	3.1	0.0	74.9	22.0	25.1	–2,313.9
75–79	3.1	0.0	83.0	13.9	17.0	–2,574.6
80–84	3.1	0.0	89.7	7.2	10.3	–2,791.7
85–89	3.1	0.0	94.0	2.9	6.0	–2,928.5
90–94	3.1	0.0	96.7	0.2	3.3	–3,017.2
95–100	3.1	0.0	96.9	0.0	3.1	–3,022.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($1.25/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	39.2	7.9	0.6:1
5–9	2.2	34.7	24.5	0.5:1
10–14	4.7	27.4	41.4	0.4:1
15–19	7.6	24.5	59.7	0.3:1
20–24	12.8	18.8	77.5	0.2:1
25–29	18.5	14.3	85.0	0.2:1
30–34	24.5	12.3	97.2	0.1:1
35–39	29.8	10.1	97.2	0.1:1
40–44	37.4	8.2	99.0	0.1:1
45–49	43.0	7.2	99.9	0.1:1
50–54	49.1	6.3	99.9	0.1:1
55–59	56.1	5.5	100.0	0.1:1
60–64	64.3	4.8	100.0	0.1:1
65–69	71.6	4.3	100.0	0.0:1
70–74	78.0	4.0	100.0	0.0:1
75–79	86.1	3.6	100.0	0.0:1
80–84	92.8	3.3	100.0	0.0:1
85–89	97.1	3.2	100.0	0.0:1
90–94	99.8	3.1	100.0	0.0:1
95–100	100.0	3.1	100.0	0.0:1

$2.50/day 2005 PPP Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 ($2.50/day 2005 PPP line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	99.4
5–9	95.2
10–14	93.6
15–19	88.5
20–24	68.5
25–29	63.2
30–34	46.1
35–39	34.5
40–44	26.5
45–49	15.6
50–54	5.3
55–59	3.6
60–64	0.4
65–69	0.6
70–74	0.4
75–79	0.0
80–84	0.0
85–89	0.1
90–94	0.0
95–100	0.0

Figure 8 ($2.50/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+4.8	2.9	3.6	4.4
5–9	+14.3	5.6	6.9	9.1
10–14	+6.4	3.2	3.9	5.0
15–19	+8.0	3.3	3.8	5.3
20–24	–6.2	4.5	4.8	5.4
25–29	+12.1	3.2	4.0	5.4
30–34	–7.0	5.0	5.2	5.7
35–39	–10.6	7.1	7.5	8.4
40–44	–3.7	3.3	3.6	4.7
45–49	–10.0	6.9	7.3	7.7
50–54	+1.3	0.9	1.1	1.5
55–59	+1.6	0.5	0.6	0.8
60–64	+0.1	0.1	0.2	0.2
65–69	+0.2	0.2	0.3	0.4
70–74	+0.4	0.0	0.0	0.0
75–79	–0.0	0.0	0.0	0.1
80–84	+0.0	0.0	0.0	0.0
85–89	+0.1	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($2.50/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.9	43.5	54.6	72.7
4	–1.2	27.2	34.2	52.9
8	–0.6	18.0	23.2	34.0
16	–0.4	11.9	14.8	19.4
32	–0.4	8.2	10.0	12.6
64	–0.5	5.7	6.8	9.5
128	–0.3	4.1	5.0	6.8
256	–0.3	2.8	3.5	4.5
512	–0.4	2.1	2.4	3.2
1,024	–0.4	1.4	1.7	2.1
2,048	–0.4	1.0	1.2	1.5
4,096	–0.4	0.7	0.9	1.1
8,192	–0.3	0.5	0.6	0.8
16,384	–0.3	0.4	0.4	0.6

Figure 12 ($2.50/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 ($2.50/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	21.9	0.1	77.5	78.1	–94.7
5–9	1.9	20.5	0.3	77.3	79.2	–81.7
10–14	4.1	18.4	0.6	76.9	81.0	–61.0
15–19	6.3	16.1	1.3	76.3	82.6	–38.2
20–24	10.1	12.3	2.7	74.9	85.0	+2.0
25–29	13.3	9.2	5.2	72.3	85.6	+41.5
30–34	16.4	6.1	8.1	69.4	85.8	+63.8
35–39	18.5	3.9	11.3	66.2	84.8	+49.6
40–44	20.8	1.7	16.7	60.9	81.7	+25.8
45–49	21.6	0.8	21.4	56.2	77.8	+4.9
50–54	22.0	0.4	27.1	50.5	72.5	–20.8
55–59	22.3	0.2	33.8	43.8	66.0	–50.6
60–64	22.4	0.1	42.0	35.6	58.0	–87.0
65–69	22.4	0.0	49.1	28.4	50.9	–118.9
70–74	22.4	0.0	55.6	22.0	44.4	–147.7
75–79	22.4	0.0	63.7	13.9	36.3	–183.6
80–84	22.4	0.0	70.4	7.2	29.6	–213.7
85–89	22.4	0.0	74.6	2.9	25.4	–232.6
90–94	22.4	0.0	77.4	0.2	22.6	–244.8
95–100	22.4	0.0	77.6	0.0	22.4	–245.6

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($2.50/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	89.8	2.5	8.8:1
5–9	2.2	88.3	8.6	7.6:1
10–14	4.7	86.8	18.1	6.6:1
15–19	7.6	83.4	28.1	5.0:1
20–24	12.8	79.0	45.0	3.8:1
25–29	18.5	71.8	59.2	2.5:1
30–34	24.5	66.9	73.0	2.0:1
35–39	29.8	62.1	82.5	1.6:1
40–44	37.4	55.5	92.5	1.2:1
45–49	43.0	50.3	96.3	1.0:1
50–54	49.1	44.8	98.1	0.8:1
55–59	56.1	39.7	99.3	0.7:1
60–64	64.3	34.8	99.7	0.5:1
65–69	71.6	31.3	99.9	0.5:1
70–74	78.0	28.7	99.9	0.4:1
75–79	86.1	26.1	100.0	0.4:1
80–84	92.8	24.2	100.0	0.3:1
85–89	97.1	23.1	100.0	0.3:1
90–94	99.8	22.5	100.0	0.3:1
95–100	100.0	22.4	100.0	0.3:1

$3.75/day 2005 PPP Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 ($3.75/day 2005 PPP line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	100.0
5–9	100.0
10–14	99.1
15–19	99.3
20–24	90.9
25–29	91.3
30–34	84.3
35–39	73.1
40–44	62.3
45–49	54.2
50–54	27.3
55–59	21.3
60–64	8.5
65–69	7.5
70–74	4.7
75–79	0.5
80–84	1.9
85–89	0.6
90–94	0.0
95–100	0.0

Figure 8 ($3.75/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+1.3	1.2	1.5	1.9
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.6	0.7	0.9
15–19	+0.8	0.8	0.9	1.2
20–24	–3.4	2.7	2.8	3.2
25–29	+7.9	3.1	3.8	5.0
30–34	–1.2	2.5	3.0	3.8
35–39	–5.0	3.8	4.0	4.7
40–44	–2.1	3.0	3.5	5.0
45–49	+3.7	3.5	4.0	5.2
50–54	–16.0	9.6	10.0	10.4
55–59	+3.4	2.6	3.1	4.1
60–64	+1.2	1.1	1.4	1.8
65–69	+1.0	1.3	1.5	1.9
70–74	+4.0	0.2	0.3	0.4
75–79	–0.0	0.2	0.2	0.3
80–84	+1.4	0.3	0.3	0.4
85–89	+0.6	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($3.75/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.8	42.4	55.8	75.1
4	–0.9	27.5	36.3	51.4
8	–0.4	18.8	24.0	34.8
16	–0.1	13.6	17.2	23.9
32	+0.2	9.4	11.3	15.5
64	+0.1	6.7	8.6	11.1
128	+0.2	4.8	5.9	7.4
256	+0.2	3.2	4.0	5.1
512	+0.2	2.2	2.7	3.5
1,024	+0.2	1.6	1.9	2.5
2,048	+0.2	1.1	1.3	1.7
4,096	+0.2	0.8	0.9	1.3
8,192	+0.2	0.6	0.7	0.9
16,384	+0.2	0.4	0.5	0.6

Figure 12 ($3.75/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 ($3.75/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	40.0	0.0	59.4	60.0	–97.0
5–9	2.2	38.4	0.0	59.4	61.5	–89.3
10–14	4.6	36.0	0.1	59.3	64.0	–77.1
15–19	7.4	33.2	0.1	59.3	66.7	–63.1
20–24	12.5	28.1	0.3	59.1	71.5	–37.8
25–29	17.6	23.0	0.9	58.5	76.0	–11.2
30–34	22.8	17.8	1.7	57.7	80.5	+16.5
35–39	26.8	13.8	3.1	56.3	83.1	+39.4
40–44	31.8	8.8	5.6	53.8	85.6	+70.5
45–49	34.6	6.0	8.4	51.0	85.6	+79.3
50–54	37.0	3.6	12.1	47.3	84.3	+70.2
55–59	38.5	2.1	17.6	41.8	80.4	+56.8
60–64	39.6	1.1	24.8	34.6	74.2	+39.0
65–69	40.2	0.4	31.3	28.1	68.3	+22.9
70–74	40.4	0.2	37.6	21.8	62.2	+7.4
75–79	40.6	0.0	45.5	13.9	54.4	–12.1
80–84	40.6	0.0	52.2	7.2	47.8	–28.6
85–89	40.6	0.0	56.5	2.9	43.5	–39.1
90–94	40.6	0.0	59.2	0.2	40.8	–45.8
95–100	40.6	0.0	59.4	0.0	40.6	–46.2

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($3.75/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	97.1	1.5	33.4:1
5–9	2.2	99.0	5.3	103.5:1
10–14	4.7	98.8	11.4	83.5:1
15–19	7.6	98.4	18.3	61.6:1
20–24	12.8	97.5	30.7	38.4:1
25–29	18.5	95.0	43.3	19.2:1
30–34	24.5	93.0	56.1	13.2:1
35–39	29.8	89.7	65.9	8.7:1
40–44	37.4	85.1	78.4	5.7:1
45–49	43.0	80.4	85.1	4.1:1
50–54	49.1	75.4	91.2	3.1:1
55–59	56.1	68.7	94.9	2.2:1
60–64	64.3	61.5	97.4	1.6:1
65–69	71.6	56.2	99.1	1.3:1
70–74	78.0	51.8	99.5	1.1:1
75–79	86.1	47.1	99.9	0.9:1
80–84	92.8	43.7	100.0	0.8:1
85–89	97.1	41.8	100.0	0.7:1
90–94	99.8	40.7	100.0	0.7:1
95–100	100.0	40.6	100.0	0.7:1

$5.00/day 2005 PPP Poverty Line

2006 Scorecard Applied to 2006 Validation Sample

Figure 5 ($5.00/day 2005 PPP line): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	100.0
5–9	100.0
10–14	99.8
15–19	99.7
20–24	99.1
25–29	96.7
30–34	95.9
35–39	89.4
40–44	79.8
45–49	78.8
50–54	54.2
55–59	55.8
60–64	29.9
65–69	23.4
70–74	11.6
75–79	7.0
80–84	3.8
85–89	1.1
90–94	1.0
95–100	0.0

Figure 8 ($5.00/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2006 validation sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	–0.3	0.2	0.2	0.2
20–24	–0.7	0.4	0.4	0.4
25–29	–2.8	1.5	1.6	1.6
30–34	–1.4	1.1	1.2	1.3
35–39	–3.6	2.7	2.9	3.2
40–44	+1.5	2.6	3.2	4.5
45–49	–3.7	3.0	3.2	3.6
50–54	–16.6	9.8	10.0	10.7
55–59	+13.0	3.5	4.2	5.1
60–64	–12.1	7.7	8.1	9.0
65–69	+5.1	2.0	2.4	3.1
70–74	+9.2	0.5	0.6	0.8
75–79	+5.4	0.4	0.4	0.6
80–84	+2.6	0.4	0.5	0.7
85–89	+0.8	0.2	0.2	0.3
90–94	+1.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($5.00/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2006 validation sample

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.1	43.1	52.2	73.0
4	–0.4	29.5	36.6	50.8
8	–0.2	21.7	26.6	40.1
16	+0.2	16.7	20.0	25.7
32	+0.5	11.2	13.2	17.2
64	+0.5	8.1	9.6	14.0
128	+0.6	5.7	6.8	9.5
256	+0.7	4.2	5.0	6.7
512	+0.8	2.8	3.4	4.9
1,024	+0.8	2.0	2.4	3.4
2,048	+0.8	1.4	1.7	2.2
4,096	+0.8	1.0	1.2	1.6
8,192	+0.8	0.7	0.9	1.1
16,384	+0.8	0.5	0.6	0.8

Figure 12 ($5.00/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2006 validation sample

By definition, this table does not exist for the 2006 scorecard applied to the 2006 validation sample.

Figure 14 ($5.00/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2006 validation sample

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	52.6	0.0	46.8	47.4	–97.7
5–9	2.2	51.0	0.0	46.8	49.0	–91.8
10–14	4.7	48.5	0.0	46.8	51.5	–82.4
15–19	7.6	45.6	0.0	46.8	54.4	–71.6
20–24	12.8	40.4	0.0	46.8	59.5	–52.0
25–29	18.4	34.8	0.1	46.7	65.1	–30.7
30–34	24.2	28.9	0.3	46.5	70.8	–8.3
35–39	29.2	24.0	0.6	46.2	75.4	+11.0
40–44	35.6	17.6	1.8	45.0	80.5	+37.2
45–49	39.8	13.4	3.1	43.7	83.5	+55.7
50–54	44.2	9.0	4.9	41.9	86.1	+75.4
55–59	47.2	6.0	8.9	37.9	85.1	+83.2
60–64	50.2	3.0	14.1	32.7	82.9	+73.4
65–69	52.0	1.2	19.5	27.3	79.3	+63.3
70–74	52.5	0.6	25.5	21.3	73.9	+52.1
75–79	53.0	0.2	33.1	13.7	66.6	+37.7
80–84	53.1	0.0	39.7	7.1	60.3	+25.4
85–89	53.2	0.0	43.9	2.9	56.1	+17.5
90–94	53.2	0.0	46.6	0.2	53.4	+12.3
95–100	53.2	0.0	46.8	0.0	53.2	+12.0

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($5.00/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2006 validation sample

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.6	100.0	1.2	Only poor targeted
5–9	2.2	100.0	4.1	Only poor targeted
10–14	4.7	100.0	8.8	Only poor targeted
15–19	7.6	100.0	14.2	Only poor targeted
20–24	12.8	99.8	24.0	425.1:1
25–29	18.5	99.5	34.6	200.8:1
30–34	24.5	98.9	45.6	86.9:1
35–39	29.8	97.8	54.9	45.2:1
40–44	37.4	95.1	66.9	19.3:1
45–49	43.0	92.7	74.9	12.7:1
50–54	49.1	89.9	83.1	8.9:1
55–59	56.1	84.1	88.7	5.3:1
60–64	64.3	78.0	94.4	3.5:1
65–69	71.6	72.7	97.8	2.7:1
70–74	78.0	67.3	98.8	2.1:1
75–79	86.1	61.5	99.6	1.6:1
80–84	92.8	57.2	99.9	1.3:1
85–89	97.1	54.8	100.0	1.2:1
90–94	99.8	53.3	100.0	1.1:1
95–100	100.0	53.2	100.0	1.1:1

National Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 (National line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.1	0.2	0.2	0.3
5–9	+1.2	1.3	1.4	1.7
10–14	–0.3	0.5	0.5	0.7
15–19	+1.7	1.2	1.4	1.9
20–24	+1.3	1.9	2.3	2.9
25–29	–6.2	3.5	3.6	3.7
30–34	–7.5	4.6	4.7	4.9
35–39	+2.5	2.9	3.6	4.6
40–44	–2.2	3.1	3.7	4.8
45–49	+6.7	3.7	4.4	6.3
50–54	–5.3	4.3	4.7	5.2
55–59	+7.3	2.2	2.7	3.5
60–64	–4.2	3.0	3.2	3.6
65–69	+4.8	0.5	0.6	0.8
70–74	–19.7	12.4	12.9	13.6
75–79	+2.9	0.5	0.6	0.7
80–84	+1.4	0.3	0.3	0.4
85–89	+0.2	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (National line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.8	42.2	58.2	81.7
4	–1.4	33.0	40.7	60.1
8	–1.2	25.6	32.8	49.6
16	–1.0	19.5	26.0	33.7
32	–0.8	14.2	17.9	24.4
64	–0.9	10.3	12.0	17.2
128	–0.9	7.3	8.7	11.6
256	–0.9	5.4	6.4	8.4
512	–1.0	3.7	4.5	5.8
1,024	–1.0	2.7	3.2	4.2
2,048	–1.0	2.0	2.3	3.1
4,096	–1.1	1.3	1.6	2.1
8,192	–1.1	0.9	1.1	1.4
16,384	–1.1	0.7	0.8	1.0

Figure 12 (National line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.0	62.9	75.1	100.5
4	–0.2	44.4	53.8	73.1
8	–0.3	32.0	41.5	56.1
16	–0.2	23.6	29.3	41.4
32	–0.2	17.5	20.8	29.3
64	–0.2	13.0	15.4	22.2
128	–0.4	9.3	11.3	15.6
256	–0.4	6.7	7.9	10.6
512	–0.5	4.6	5.4	7.2
1,024	–0.4	3.4	3.9	5.2
2,048	–0.5	2.4	2.8	3.8
4,096	–0.5	1.6	1.9	2.5
8,192	–0.5	1.1	1.3	1.7
16,384	–0.5	0.8	1.0	1.2

Figure 14 (National line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.7	45.1	0.0	54.2	54.9	–97.1
5–9	2.0	43.8	0.0	54.2	56.2	–91.1
10–14	4.8	41.0	0.0	54.1	59.0	–78.8
15–19	8.4	37.4	0.1	54.1	62.5	–63.1
20–24	13.9	31.9	0.6	53.6	67.5	–37.8
25–29	20.1	25.7	1.0	53.1	73.3	–9.9
30–34	26.1	19.7	1.8	52.3	78.4	+17.8
35–39	31.4	14.4	3.8	50.4	81.8	+45.3
40–44	35.6	10.2	6.4	47.8	83.5	+69.5
45–49	39.6	6.2	10.0	44.2	83.8	+78.1
50–54	42.1	3.7	13.3	40.9	82.9	+70.9
55–59	43.5	2.3	18.2	36.0	79.5	+60.3
60–64	44.8	1.0	25.1	29.1	73.8	+45.2
65–69	45.2	0.6	31.8	22.4	67.6	+30.6
70–74	45.6	0.2	37.5	16.7	62.3	+18.2
75–79	45.7	0.1	43.9	10.3	56.1	+4.3
80–84	45.8	0.0	49.3	4.9	50.7	–7.7
85–89	45.8	0.0	52.2	2.0	47.8	–14.0
90–94	45.8	0.0	54.0	0.2	46.0	–17.9
95–100	45.8	0.0	54.2	0.0	45.8	–18.3

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (National line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	99.4	1.5	169.4:1
5–9	2.0	99.0	4.4	98.9:1
10–14	4.9	99.1	10.5	107.9:1
15–19	8.5	98.6	18.3	71.2:1
20–24	14.5	95.8	30.4	22.7:1
25–29	21.2	95.1	43.9	19.2:1
30–34	27.9	93.4	56.9	14.1:1
35–39	35.2	89.2	68.5	8.3:1
40–44	42.0	84.8	77.8	5.6:1
45–49	49.6	79.8	86.4	4.0:1
50–54	55.4	75.9	91.8	3.2:1
55–59	61.7	70.5	95.0	2.4:1
60–64	69.9	64.1	97.7	1.8:1
65–69	77.0	58.7	98.7	1.4:1
70–74	83.1	54.9	99.5	1.2:1
75–79	89.6	51.1	99.9	1.0:1
80–84	95.1	48.1	100.0	0.9:1
85–89	98.0	46.7	100.0	0.9:1
90–94	99.8	45.9	100.0	0.8:1
95–100	100.0	45.8	100.0	0.8:1

Food Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 (Food line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–4.0	7.6	8.8	11.6
5–9	–5.7	5.4	6.3	8.3
10–14	+6.3	4.1	5.0	6.9
15–19	+0.4	3.8	4.5	5.8
20–24	+7.4	2.5	3.0	4.1
25–29	+9.8	1.9	2.3	3.0
30–34	–3.0	2.9	3.1	4.2
35–39	+1.3	1.7	2.0	2.8
40–44	+2.7	1.0	1.2	1.5
45–49	+0.9	0.4	0.5	0.6
50–54	–0.9	0.8	0.8	1.0
55–59	–0.2	0.4	0.5	0.7
60–64	–0.1	0.1	0.1	0.1
65–69	+0.1	0.0	0.0	0.0
70–74	+0.0	0.0	0.0	0.0
75–79	+0.0	0.0	0.0	0.0
80–84	+0.0	0.0	0.0	0.0
85–89	+0.0	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (Food line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.2	35.6	45.0	60.0
4	+0.2	24.2	30.5	44.2
8	+0.9	15.6	19.8	27.0
16	+1.2	10.4	13.0	17.7
32	+1.3	7.0	8.1	11.2
64	+1.2	4.9	5.9	7.7
128	+1.1	3.6	4.4	5.7
256	+1.1	2.5	3.0	4.0
512	+1.1	1.8	2.1	2.7
1,024	+1.1	1.3	1.5	2.0
2,048	+1.1	0.9	1.1	1.4
4,096	+1.1	0.6	0.7	1.0
8,192	+1.1	0.4	0.5	0.7
16,384	+1.1	0.3	0.4	0.5

Figure 12 (Food line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.1	52.2	64.2	97.6
4	+1.1	32.4	42.0	62.4
8	+1.3	20.7	26.3	37.5
16	+1.4	13.0	16.4	23.1
32	+1.6	9.1	11.2	15.5
64	+1.6	6.7	7.9	9.9
128	+1.4	4.8	5.8	7.9
256	+1.4	3.4	4.0	5.3
512	+1.4	2.3	2.8	3.6
1,024	+1.4	1.7	2.0	2.6
2,048	+1.4	1.2	1.5	1.8
4,096	+1.4	0.8	1.0	1.2
8,192	+1.4	0.6	0.7	0.9
16,384	+1.4	0.4	0.5	0.6

Figure 14 (Food line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.5	10.3	0.2	89.0	89.5	–89.3
5–9	1.4	9.4	0.7	88.5	89.9	–68.1
10–14	3.0	7.8	1.8	87.4	90.4	–26.8
15–19	4.8	6.0	3.7	85.5	90.3	+22.9
20–24	6.6	4.2	7.9	81.3	87.9	+26.7
25–29	8.1	2.7	13.1	76.1	84.2	–21.0
30–34	9.2	1.6	18.7	70.5	79.7	–73.0
35–39	10.0	0.8	25.2	64.0	74.0	–133.4
40–44	10.4	0.4	31.6	57.6	68.1	–192.4
45–49	10.6	0.2	39.0	50.2	60.9	–260.7
50–54	10.8	0.0	44.6	44.6	55.3	–313.2
55–59	10.8	0.0	50.9	38.3	49.1	–371.2
60–64	10.8	0.0	59.1	30.1	40.9	–447.0
65–69	10.8	0.0	66.2	23.0	33.8	–512.9
70–74	10.8	0.0	72.3	16.9	27.7	–568.9
75–79	10.8	0.0	78.8	10.4	21.2	–629.5
80–84	10.8	0.0	84.3	4.9	15.7	–680.8
85–89	10.8	0.0	87.2	2.0	12.8	–707.6
90–94	10.8	0.0	89.0	0.2	11.0	–724.1
95–100	10.8	0.0	89.2	0.0	10.8	–725.8

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (Food line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	72.3	4.5	2.6:1
5–9	2.0	68.1	12.9	2.1:1
10–14	4.9	62.2	28.0	1.6:1
15–19	8.5	56.2	44.2	1.3:1
20–24	14.5	45.6	61.4	0.8:1
25–29	21.2	38.3	75.0	0.6:1
30–34	27.9	33.0	85.4	0.5:1
35–39	35.2	28.3	92.3	0.4:1
40–44	42.0	24.8	96.6	0.3:1
45–49	49.6	21.4	98.4	0.3:1
50–54	55.4	19.4	99.6	0.2:1
55–59	61.7	17.5	99.9	0.2:1
60–64	69.9	15.5	100.0	0.2:1
65–69	77.0	14.0	100.0	0.2:1
70–74	83.1	13.0	100.0	0.1:1
75–79	89.6	12.1	100.0	0.1:1
80–84	95.1	11.4	100.0	0.1:1
85–89	98.0	11.0	100.0	0.1:1
90–94	99.8	10.8	100.0	0.1:1
95–100	100.0	10.8	100.0	0.1:1

150% of the National Poverty Line Tables

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 (150% of the national line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	–0.3	0.2	0.2	0.2
20–24	+0.0	0.2	0.3	0.3
25–29	–1.4	0.7	0.7	0.7
30–34	–1.2	0.8	0.9	0.9
35–39	+2.0	2.0	2.3	3.0
40–44	–5.4	3.5	3.6	4.0
45–49	+0.5	2.3	2.7	3.4
50–54	–15.2	9.2	9.5	10.2
55–59	+10.0	3.3	3.8	4.9
60–64	–8.1	5.8	6.1	7.2
65–69	+10.2	2.9	3.6	4.5
70–74	–21.0	12.8	13.2	13.8
75–79	+0.7	1.8	2.2	2.9
80–84	–5.6	4.4	4.7	5.4
85–89	–1.3	1.3	1.5	2.0
90–94	+0.8	0.3	0.3	0.4
95–100	+0.0	0.0	0.0	0.0

Figure 10 (150% of the national line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.6	47.6	58.8	79.4
4	–1.3	36.1	45.5	62.4
8	–1.8	28.6	35.3	47.6
16	–1.7	21.4	25.9	35.1
32	–1.8	16.3	19.4	24.8
64	–2.0	11.5	13.6	19.1
128	–2.2	7.8	9.4	12.0
256	–2.2	5.8	6.7	8.9
512	–2.3	4.5	5.2	6.2
1,024	–2.4	3.0	3.6	4.7
2,048	–2.4	2.1	2.5	3.1
4,096	–2.4	1.5	1.8	2.4
8,192	–2.4	1.0	1.2	1.6
16,384	–2.4	0.8	0.9	1.2

Figure 12 (150% of the national line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.8	68.0	80.8	100.0
4	–0.3	49.3	61.1	76.5
8	–0.9	38.9	48.3	62.8
16	–1.2	29.2	33.5	43.9
32	–1.3	21.6	26.8	32.3
64	–1.7	15.2	18.6	23.9
128	–1.8	10.5	12.7	15.4
256	–1.8	7.9	9.3	12.1
512	–1.9	5.7	6.8	9.0
1,024	–2.0	4.0	4.8	6.2
2,048	–2.0	2.8	3.2	4.2
4,096	–1.9	1.9	2.2	3.1
8,192	–1.9	1.3	1.6	2.1
16,384	–2.0	1.0	1.2	1.6

Figure 14 (150% of the national line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.7	62.5	0.0	36.8	37.5	–97.9
5–9	2.0	61.1	0.0	36.8	38.9	–93.5
10–14	4.9	58.3	0.0	36.8	41.7	–84.6
15–19	8.5	54.7	0.0	36.8	45.3	–73.1
20–24	14.5	48.7	0.0	36.8	51.3	–54.0
25–29	21.1	42.0	0.0	36.8	57.9	–33.0
30–34	27.7	35.5	0.2	36.6	64.3	–12.0
35–39	34.5	28.7	0.7	36.1	70.6	+10.3
40–44	40.6	22.6	1.5	35.4	75.9	+30.7
45–49	46.7	16.5	2.9	33.9	80.6	+52.4
50–54	51.1	12.0	4.3	32.6	83.7	+68.6
55–59	54.7	8.5	7.0	29.8	84.5	+84.2
60–64	58.3	4.8	11.5	25.3	83.6	+81.7
65–69	60.4	2.7	16.6	20.3	80.7	+73.8
70–74	61.7	1.4	21.3	15.5	77.2	+66.3
75–79	62.6	0.6	27.0	9.8	72.4	+57.3
80–84	63.1	0.1	32.1	4.8	67.8	+49.2
85–89	63.2	0.0	34.9	2.0	65.1	+44.8
90–94	63.2	0.0	36.7	0.2	63.3	+42.0
95–100	63.2	0.0	36.8	0.0	63.2	+41.7

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (150% of the national line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	100.0	1.1	Only poor targeted
5–9	2.0	100.0	3.2	Only poor targeted
10–14	4.9	100.0	7.7	Only poor targeted
15–19	8.5	99.9	13.5	1,960.1:1
20–24	14.5	99.8	23.0	455.6:1
25–29	21.2	99.8	33.4	597.5:1
30–34	27.9	99.2	43.8	118.6:1
35–39	35.2	98.0	54.6	49.0:1
40–44	42.0	96.5	64.2	27.7:1
45–49	49.6	94.1	73.9	15.9:1
50–54	55.4	92.3	80.9	12.0:1
55–59	61.7	88.6	86.6	7.8:1
60–64	69.9	83.5	92.4	5.1:1
65–69	77.0	78.5	95.7	3.7:1
70–74	83.1	74.3	97.7	2.9:1
75–79	89.6	69.9	99.1	2.3:1
80–84	95.1	66.3	99.8	2.0:1
85–89	98.0	64.4	100.0	1.8:1
90–94	99.8	63.3	100.0	1.7:1
95–100	100.0	63.2	100.0	1.7:1

200% of the National Poverty Line Tables

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 (200% of the national line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	+0.0	0.0	0.1	0.1
20–24	+0.1	0.2	0.2	0.2
25–29	+0.0	0.0	0.0	0.0
30–34	–0.2	0.3	0.4	0.5
35–39	+1.3	0.9	1.0	1.3
40–44	–2.2	1.5	1.5	1.6
45–49	+0.7	1.0	1.2	1.6
50–54	–5.0	3.0	3.1	3.3
55–59	+15.6	2.9	3.4	4.5
60–64	+10.6	3.6	4.1	5.5
65–69	–14.2	8.5	8.7	9.2
70–74	–17.3	10.7	11.1	11.8
75–79	+6.9	2.5	2.9	3.8
80–84	+3.2	3.4	4.1	5.5
85–89	–5.2	4.0	4.2	4.8
90–94	+3.4	0.7	0.8	1.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (200% of the national line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.8	46.6	59.3	73.7
4	+0.5	34.5	42.8	59.6
8	+0.4	26.8	33.9	45.0
16	+0.4	20.1	25.6	32.9
32	–0.1	14.9	18.3	25.3
64	+0.2	11.0	13.6	18.0
128	+0.0	7.5	9.0	12.4
256	–0.1	5.6	6.4	8.7
512	–0.1	3.9	4.6	6.3
1,024	–0.3	2.7	3.2	4.4
2,048	–0.3	2.0	2.3	2.9
4,096	–0.3	1.4	1.7	2.1
8,192	–0.3	1.0	1.2	1.6
16,384	–0.3	0.7	0.9	1.1

Figure 12 (200% of the national line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+3.0	67.8	81.5	107.2
4	+1.9	50.0	64.9	84.2
8	+1.7	41.2	48.4	63.4
16	+2.4	31.9	37.4	48.5
32	+1.9	23.0	27.0	36.9
64	+2.2	16.9	20.4	26.9
128	+2.7	11.3	13.2	17.1
256	+2.7	8.5	10.0	13.1
512	+2.8	6.2	7.3	9.6
1,024	+2.6	4.3	5.1	7.0
2,048	+2.6	3.0	3.5	4.7
4,096	+2.6	2.2	2.7	3.2
8,192	+2.6	1.6	1.9	2.4
16,384	+2.5	1.1	1.4	1.7

Figure 14 (200% of the national line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.7	72.8	0.0	26.5	27.2	–98.2
5–9	2.0	71.4	0.0	26.5	28.6	–94.4
10–14	4.9	68.6	0.0	26.5	31.4	–86.7
15–19	8.5	65.0	0.0	26.5	35.0	–76.9
20–24	14.5	58.9	0.0	26.5	41.0	–60.4
25–29	21.1	52.3	0.0	26.5	47.7	–42.4
30–34	27.8	45.6	0.1	26.5	54.3	–24.1
35–39	35.0	38.5	0.2	26.3	61.3	–4.5
40–44	41.6	31.9	0.4	26.1	67.7	+13.8
45–49	48.7	24.8	0.9	25.6	74.2	+33.7
50–54	53.9	19.6	1.5	25.0	78.9	+48.7
55–59	58.6	14.8	3.1	23.5	82.1	+63.8
60–64	63.9	9.5	6.0	20.6	84.5	+82.1
65–69	67.9	5.5	9.1	17.4	85.4	+87.6
70–74	70.3	3.1	12.7	13.8	84.1	+82.7
75–79	72.1	1.3	17.5	9.1	81.2	+76.2
80–84	73.1	0.4	22.0	4.5	77.6	+70.0
85–89	73.4	0.0	24.6	1.9	75.3	+66.5
90–94	73.5	0.0	26.4	0.2	73.6	+64.1
95–100	73.5	0.0	26.5	0.0	73.5	+63.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (200% of the national line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	100.0	0.9	Only poor targeted
5–9	2.0	100.0	2.8	Only poor targeted
10–14	4.9	100.0	6.6	Only poor targeted
15–19	8.5	99.9	11.6	1,960.1:1
20–24	14.5	99.9	19.8	818.3:1
25–29	21.2	99.9	28.8	1,191.3:1
30–34	27.9	99.8	37.9	470.2:1
35–39	35.2	99.4	47.6	171.3:1
40–44	42.0	99.0	56.6	98.8:1
45–49	49.6	98.1	66.2	51.5:1
50–54	55.4	97.3	73.4	36.0:1
55–59	61.7	95.1	79.8	19.2:1
60–64	69.9	91.5	87.0	10.7:1
65–69	77.0	88.2	92.5	7.5:1
70–74	83.1	84.7	95.7	5.5:1
75–79	89.6	80.5	98.2	4.1:1
80–84	95.1	76.8	99.5	3.3:1
85–89	98.0	74.9	99.9	3.0:1
90–94	99.8	73.6	100.0	2.8:1
95–100	100.0	73.5	100.0	2.8:1

USAID "Extreme" Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 (USAID "extreme" line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–2.1	6.1	7.2	9.2
5–9	+1.7	5.0	6.0	7.8
10–14	+2.3	3.5	4.3	5.5
15–19	–2.9	3.2	3.8	4.6
20–24	+1.3	3.3	3.8	4.8
25–29	+18.1	3.0	3.7	4.9
30–34	–6.2	4.7	4.9	5.6
35–39	+2.5	2.6	3.1	4.0
40–44	–15.8	9.8	10.3	11.0
45–49	–3.5	3.1	3.4	3.9
50–54	+2.3	1.2	1.4	1.7
55–59	–0.6	1.3	1.6	2.0
60–64	–0.9	0.8	0.9	1.2
65–69	+0.6	0.1	0.1	0.2
70–74	+1.5	0.1	0.1	0.1
75–79	–0.0	0.1	0.1	0.2
80–84	+0.0	0.0	0.0	0.0
85–89	+0.1	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 (USAID "extreme" line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.6	44.9	54.3	67.3
4	–0.9	32.7	41.0	53.4
8	–0.6	23.5	30.0	41.8
16	+0.1	17.6	21.5	29.4
32	+0.1	11.8	14.9	21.3
64	–0.1	8.5	10.5	13.8
128	–0.2	6.3	7.8	9.8
256	–0.2	4.6	5.4	7.0
512	–0.2	3.2	3.8	4.9
1,024	–0.2	2.1	2.6	3.6
2,048	–0.2	1.7	1.9	2.5
4,096	–0.2	1.2	1.4	1.8
8,192	–0.2	0.8	0.9	1.3
16,384	–0.2	0.6	0.7	0.9

Figure 12 (USAID "extreme" line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.1	66.3	82.0	108.1
4	+1.2	45.3	57.3	75.3
8	+1.0	31.5	38.7	54.3
16	+1.5	22.9	28.7	37.3
32	+1.8	15.3	18.8	26.5
64	+1.6	10.3	12.7	16.9
128	+1.4	7.4	9.2	12.4
256	+1.3	5.3	6.4	8.8
512	+1.4	3.8	4.5	6.1
1,024	+1.4	2.7	3.1	4.3
2,048	+1.4	2.0	2.4	3.3
4,096	+1.4	1.4	1.7	2.3
8,192	+1.4	0.9	1.1	1.5
16,384	+1.4	0.7	0.8	1.0

Figure 14 (USAID "extreme" line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	21.9	0.1	77.4	78.0	–94.4
5–9	1.7	20.8	0.4	77.1	78.8	–83.4
10–14	3.9	18.6	1.0	76.6	80.5	–60.9
15–19	6.7	15.8	1.8	75.7	82.4	–32.5
20–24	10.4	12.1	4.1	73.4	83.8	+10.9
25–29	13.5	9.0	7.7	69.8	83.3	+54.1
30–34	16.5	6.0	11.4	66.1	82.5	+49.1
35–39	18.6	3.9	16.6	60.9	79.5	+26.3
40–44	20.3	2.2	21.7	55.8	76.1	+3.6
45–49	21.4	1.1	28.2	49.3	70.7	–25.4
50–54	21.9	0.6	33.5	44.0	66.0	–48.8
55–59	22.3	0.2	39.4	38.1	60.3	–75.3
60–64	22.4	0.1	47.5	30.0	52.5	–111.0
65–69	22.5	0.0	54.5	23.0	45.4	–142.5
70–74	22.5	0.0	60.6	16.9	39.4	–169.3
75–79	22.5	0.0	67.1	10.4	32.9	–198.3
80–84	22.5	0.0	72.6	4.9	27.4	–222.9
85–89	22.5	0.0	75.5	2.0	24.5	–235.8
90–94	22.5	0.0	77.3	0.2	22.7	–243.7
95–100	22.5	0.0	77.5	0.0	22.5	–244.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 (USAID "extreme" line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	89.3	2.7	8.3:1
5–9	2.0	82.5	7.5	4.7:1
10–14	4.9	80.4	17.4	4.1:1
15–19	8.5	78.6	29.7	3.7:1
20–24	14.5	71.6	46.3	2.5:1
25–29	21.2	63.8	60.0	1.8:1
30–34	27.9	59.0	73.2	1.4:1
35–39	35.2	52.9	82.7	1.1:1
40–44	42.0	48.4	90.4	0.9:1
45–49	49.6	43.1	95.0	0.8:1
50–54	55.4	39.6	97.4	0.7:1
55–59	61.7	36.1	98.9	0.6:1
60–64	69.9	32.1	99.7	0.5:1
65–69	77.0	29.2	99.9	0.4:1
70–74	83.1	27.1	99.9	0.4:1
75–79	89.6	25.1	100.0	0.3:1
80–84	95.1	23.6	100.0	0.3:1
85–89	98.0	22.9	100.0	0.3:1
90–94	99.8	22.5	100.0	0.3:1
95–100	100.0	22.5	100.0	0.3:1

$1.25/day 2005 PPP Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 ($1.25/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+13.1	5.6	6.7	9.8
5–9	–16.5	11.4	12.0	13.2
10–14	–4.6	4.3	4.7	6.7
15–19	+1.4	2.6	3.1	4.1
20–24	–0.7	1.6	2.0	2.6
25–29	+4.9	1.1	1.2	1.6
30–34	–8.3	5.4	5.7	6.1
35–39	–1.2	1.2	1.3	1.8
40–44	+1.2	0.4	0.4	0.6
45–49	+0.3	0.2	0.2	0.2
50–54	–0.5	0.5	0.5	0.6
55–59	+0.0	0.0	0.0	0.0
60–64	+0.0	0.0	0.0	0.0
65–69	+0.0	0.0	0.0	0.0
70–74	+0.0	0.0	0.0	0.0
75–79	+0.0	0.0	0.0	0.0
80–84	+0.0	0.0	0.0	0.0
85–89	+0.0	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($1.25/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.3	19.7	31.2	47.0
4	–0.5	14.3	18.1	33.8
8	–0.5	10.6	13.9	22.8
16	–0.3	7.1	9.1	14.4
32	–0.2	5.0	6.1	8.6
64	–0.3	3.5	4.4	5.8
128	–0.3	2.6	3.3	4.3
256	–0.3	2.0	2.3	2.9
512	–0.3	1.3	1.6	2.0
1,024	–0.3	0.9	1.1	1.5
2,048	–0.3	0.6	0.8	1.0
4,096	–0.3	0.4	0.5	0.6
8,192	–0.3	0.3	0.4	0.5
16,384	–0.3	0.2	0.3	0.4

Figure 12 ($1.25/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.0	22.3	47.5	79.9
4	–0.5	19.6	27.2	50.0
8	–0.6	13.4	16.6	30.8
16	–0.3	8.5	10.5	16.8
32	–0.3	6.0	7.2	10.7
64	–0.4	4.1	5.1	7.2
128	–0.4	3.0	3.6	4.8
256	–0.4	2.2	2.6	3.3
512	–0.4	1.5	1.8	2.2
1,024	–0.4	1.0	1.2	1.7
2,048	–0.4	0.7	0.9	1.1
4,096	–0.4	0.5	0.6	0.7
8,192	–0.4	0.4	0.4	0.6
16,384	–0.4	0.3	0.3	0.4

Figure 14 ($1.25/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.2	3.4	0.5	95.9	96.1	–76.4
5–9	0.6	3.0	1.5	94.9	95.5	–27.5
10–14	1.2	2.4	3.6	92.7	94.0	–0.6
15–19	1.8	1.8	6.7	89.7	91.5	–84.6
20–24	2.5	1.1	12.0	84.3	86.8	–232.1
25–29	2.9	0.7	18.2	78.1	81.1	–402.8
30–34	3.3	0.3	24.6	71.8	75.1	–577.9
35–39	3.5	0.2	31.7	64.7	68.1	–775.0
40–44	3.6	0.1	38.4	57.9	61.5	–960.5
45–49	3.6	0.0	46.0	50.4	54.0	–1,168.9
50–54	3.6	0.0	51.8	44.6	48.2	–1,327.7
55–59	3.6	0.0	58.1	38.3	41.9	–1,501.7
60–64	3.6	0.0	66.3	30.1	33.7	–1,727.7
65–69	3.6	0.0	73.4	23.0	26.6	–1,924.2
70–74	3.6	0.0	79.4	16.9	20.6	–2,091.0
75–79	3.6	0.0	86.0	10.4	14.0	–2,271.7
80–84	3.6	0.0	91.5	4.9	8.5	–2,424.3
85–89	3.6	0.0	94.4	2.0	5.6	–2,504.2
90–94	3.6	0.0	96.2	0.2	3.8	–2,553.5
95–100	3.6	0.0	96.4	0.0	3.6	–2,558.5

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($1.25/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	27.9	5.1	0.4:1
5–9	2.0	28.4	16.0	0.4:1
10–14	4.9	25.2	33.8	0.3:1
15–19	8.5	21.3	49.9	0.3:1
20–24	14.5	17.2	69.1	0.2:1
25–29	21.2	13.9	81.0	0.2:1
30–34	27.9	11.9	92.0	0.1:1
35–39	35.2	9.8	95.6	0.1:1
40–44	42.0	8.5	98.5	0.1:1
45–49	49.6	7.2	99.2	0.1:1
50–54	55.4	6.5	100.0	0.1:1
55–59	61.7	5.9	100.0	0.1:1
60–64	69.9	5.2	100.0	0.1:1
65–69	77.0	4.7	100.0	0.0:1
70–74	83.1	4.4	100.0	0.0:1
75–79	89.6	4.0	100.0	0.0:1
80–84	95.1	3.8	100.0	0.0:1
85–89	98.0	3.7	100.0	0.0:1
90–94	99.8	3.6	100.0	0.0:1
95–100	100.0	3.6	100.0	0.0:1

$2.50/day 2005 PPP Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 ($2.50/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+2.4	2.1	2.6	3.4
5–9	+10.0	4.7	5.5	7.2
10–14	+11.2	3.3	4.0	5.0
15–19	+3.3	2.8	3.3	4.4
20–24	+5.9	3.3	3.9	4.8
25–29	+24.1	3.5	4.2	5.4
30–34	–3.5	3.3	3.7	4.9
35–39	+1.4	2.6	3.2	4.0
40–44	+5.6	3.0	3.7	4.8
45–49	+1.5	2.6	3.1	4.1
50–54	+0.1	1.1	1.3	1.8
55–59	+0.7	0.8	1.0	1.2
60–64	+0.1	0.2	0.2	0.3
65–69	+0.4	0.1	0.1	0.2
70–74	+0.3	0.1	0.1	0.1
75–79	–0.1	0.1	0.1	0.1
80–84	+0.0	0.0	0.0	0.0
85–89	+0.1	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($2.50/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.0	42.7	52.5	67.5
4	+2.1	31.1	39.5	53.7
8	+2.4	21.2	27.7	44.1
16	+2.9	16.1	20.2	29.4
32	+2.9	11.4	14.3	20.6
64	+2.7	8.0	10.0	14.1
128	+2.7	5.8	7.0	9.7
256	+2.7	3.9	5.0	6.5
512	+2.7	2.8	3.4	4.5
1,024	+2.7	2.0	2.5	3.3
2,048	+2.7	1.5	1.7	2.3
4,096	+2.7	1.0	1.2	1.6
8,192	+2.7	0.7	0.9	1.2
16,384	+2.7	0.5	0.6	0.8

Figure 12 ($2.50/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.9	63.1	77.0	106.7
4	+3.3	40.4	52.6	75.3
8	+2.9	28.0	35.4	50.5
16	+3.3	19.7	23.7	34.7
32	+3.3	13.9	16.5	22.7
64	+3.2	9.5	11.3	16.8
128	+3.0	6.8	8.4	11.0
256	+3.0	4.9	5.8	7.5
512	+3.1	3.4	4.2	5.7
1,024	+3.1	2.3	2.9	4.1
2,048	+3.0	1.7	2.1	2.9
4,096	+3.0	1.2	1.4	1.9
8,192	+3.0	0.9	1.0	1.4
16,384	+3.0	0.7	0.8	1.0

Figure 14 ($2.50/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	23.6	0.0	75.7	76.4	–94.6
5–9	1.8	22.4	0.2	75.5	77.3	–84.1
10–14	4.2	20.1	0.7	75.1	79.2	–62.7
15–19	7.2	17.0	1.3	74.5	81.7	–35.2
20–24	11.4	12.8	3.2	72.6	84.0	+7.0
25–29	15.1	9.1	6.1	69.7	84.8	+49.6
30–34	18.3	6.0	9.7	66.1	84.4	+60.2
35–39	20.9	3.3	14.3	61.5	82.4	+41.0
40–44	22.4	1.9	19.7	56.1	78.5	+18.9
45–49	23.4	0.9	26.2	49.5	72.9	–8.2
50–54	23.9	0.4	31.5	44.3	68.1	–30.0
55–59	24.1	0.1	37.6	38.2	62.3	–55.1
60–64	24.2	0.1	45.7	30.1	54.2	–88.6
65–69	24.2	0.0	52.8	23.0	47.2	–117.8
70–74	24.2	0.0	58.8	16.9	41.2	–142.7
75–79	24.2	0.0	65.4	10.4	34.6	–169.7
80–84	24.2	0.0	70.9	4.9	29.1	–192.6
85–89	24.2	0.0	73.8	2.0	26.2	–204.5
90–94	24.2	0.0	75.6	0.2	24.4	–211.9
95–100	24.2	0.0	75.8	0.0	24.2	–212.6

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($2.50/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	94.5	2.6	17.1:1
5–9	2.0	88.4	7.5	7.7:1
10–14	4.9	85.4	17.2	5.8:1
15–19	8.5	84.9	29.8	5.6:1
20–24	14.5	78.3	47.0	3.6:1
25–29	21.2	71.3	62.3	2.5:1
30–34	27.9	65.4	75.3	1.9:1
35–39	35.2	59.4	86.2	1.5:1
40–44	42.0	53.2	92.3	1.1:1
45–49	49.6	47.1	96.5	0.9:1
50–54	55.4	43.1	98.5	0.8:1
55–59	61.7	39.1	99.5	0.6:1
60–64	69.9	34.6	99.8	0.5:1
65–69	77.0	31.4	99.9	0.5:1
70–74	83.1	29.2	100.0	0.4:1
75–79	89.6	27.0	100.0	0.4:1
80–84	95.1	25.5	100.0	0.3:1
85–89	98.0	24.7	100.0	0.3:1
90–94	99.8	24.3	100.0	0.3:1
95–100	100.0	24.2	100.0	0.3:1

$3.75/day 2005 PPP Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 ($3.75/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+1.7	1.8	2.1	2.6
5–9	+4.5	2.6	3.0	4.5
10–14	–0.2	0.5	0.6	0.8
15–19	+2.1	1.3	1.5	2.0
20–24	+3.3	2.3	2.6	3.5
25–29	–4.1	2.5	2.6	2.7
30–34	–5.0	3.3	3.5	3.7
35–39	+7.0	2.8	3.2	4.6
40–44	+1.9	3.2	3.8	4.8
45–49	+11.3	3.5	4.2	5.8
50–54	–0.1	3.2	3.8	4.6
55–59	+3.8	2.2	2.5	3.4
60–64	–3.4	2.6	2.8	3.2
65–69	+5.2	0.5	0.6	0.8
70–74	–18.8	12.0	12.5	13.2
75–79	–0.9	0.7	0.8	0.9
80–84	+1.4	0.3	0.3	0.4
85–89	+0.6	0.0	0.0	0.0
90–94	+0.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($3.75/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.3	44.0	59.3	82.1
4	+0.0	33.8	41.6	60.4
8	+0.2	26.0	32.2	50.2
16	+0.4	18.8	25.6	34.9
32	+0.7	14.2	18.4	25.5
64	+0.5	10.2	12.1	17.2
128	+0.5	7.3	8.7	11.4
256	+0.5	5.4	6.3	8.1
512	+0.4	3.7	4.5	5.8
1,024	+0.4	2.7	3.2	4.1
2,048	+0.4	2.0	2.3	3.0
4,096	+0.3	1.3	1.6	2.0
8,192	+0.3	0.9	1.1	1.4
16,384	+0.3	0.7	0.8	1.1

Figure 12 ($3.75/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/− percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.5	61.6	74.1	98.7
4	+0.9	43.1	53.9	71.1
8	+0.6	31.6	41.3	52.4
16	+0.5	23.7	29.0	39.6
32	+0.5	17.0	20.6	30.0
64	+0.4	12.7	14.8	20.0
128	+0.3	8.8	10.6	14.1
256	+0.3	6.4	7.6	9.7
512	+0.2	4.4	5.1	6.9
1,024	+0.2	3.2	3.8	4.9
2,048	+0.1	2.3	2.7	3.6
4,096	+0.1	1.5	1.9	2.4
8,192	+0.1	1.1	1.3	1.7
16,384	+0.1	0.8	0.9	1.2

Figure 14 ($3.75/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.6	43.5	0.0	55.8	56.4	–97.0
5–9	2.0	42.2	0.1	55.7	57.7	–90.9
10–14	4.8	39.4	0.1	55.7	60.5	–78.2
15–19	8.3	35.9	0.2	55.6	63.9	–62.0
20–24	13.7	30.5	0.8	55.0	68.7	–36.0
25–29	19.8	24.4	1.4	54.5	74.3	–7.3
30–34	25.6	18.5	2.3	53.5	79.2	+21.2
35–39	30.7	13.5	4.5	51.4	82.1	+49.1
40–44	34.8	9.4	7.2	48.6	83.3	+73.8
45–49	38.4	5.7	11.2	44.7	83.1	+74.8
50–54	40.7	3.5	14.7	41.1	81.8	+66.7
55–59	42.0	2.2	19.7	36.1	78.2	+55.5
60–64	43.2	1.0	26.7	29.2	72.4	+39.7
65–69	43.6	0.5	33.4	22.4	66.1	+24.5
70–74	44.0	0.2	39.1	16.7	60.7	+11.5
75–79	44.1	0.0	45.5	10.3	54.5	–2.9
80–84	44.2	0.0	51.0	4.9	49.0	–15.3
85–89	44.2	0.0	53.8	2.0	46.2	–21.9
90–94	44.2	0.0	55.6	0.2	44.4	–25.9
95–100	44.2	0.0	55.8	0.0	44.2	–26.3

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($3.75/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	97.0	1.5	31.9:1
5–9	2.0	96.3	4.5	25.8:1
10–14	4.9	97.7	10.8	43.2:1
15–19	8.5	97.5	18.8	39.0:1
20–24	14.5	94.3	31.0	16.5:1
25–29	21.2	93.6	44.8	14.6:1
30–34	27.9	91.9	58.0	11.3:1
35–39	35.2	87.3	69.5	6.9:1
40–44	42.0	82.8	78.7	4.8:1
45–49	49.6	77.5	87.0	3.4:1
50–54	55.4	73.4	92.0	2.8:1
55–59	61.7	68.1	95.1	2.1:1
60–64	69.9	61.9	97.8	1.6:1
65–69	77.0	56.7	98.8	1.3:1
70–74	83.1	52.9	99.5	1.1:1
75–79	89.6	49.3	99.9	1.0:1
80–84	95.1	46.4	100.0	0.9:1
85–89	98.0	45.1	100.0	0.8:1
90–94	99.8	44.3	100.0	0.8:1
95–100	100.0	44.2	100.0	0.8:1

$5.00/day 2005 PPP Poverty Line

2006 Scorecard Applied to the 2000 ENCOVI

Figure 8 ($5.00/day 2005 PPP line): Bootstrapped differences between estimated and true household poverty likelihoods with confidence intervals in a large sample (n = 16,384), 2006 scorecard applied to the 2000 ENCOVI sample

	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+0.0	0.0	0.0	0.0
5–9	+0.0	0.0	0.0	0.0
10–14	–0.2	0.1	0.1	0.1
15–19	–0.3	0.2	0.2	0.2
20–24	–0.6	0.4	0.4	0.4
25–29	–2.9	1.5	1.6	1.6
30–34	–1.5	1.1	1.1	1.2
35–39	+4.4	2.4	2.8	3.6
40–44	–7.9	4.8	5.0	5.3
45–49	+1.0	2.5	3.0	3.8
50–54	–19.5	11.5	11.8	12.4
55–59	+12.7	3.1	3.6	4.8
60–64	+3.2	2.6	3.0	4.3
65–69	+8.6	2.0	2.4	3.2
70–74	–20.0	12.4	12.9	13.6
75–79	–0.0	1.5	1.8	2.5
80–84	–7.8	5.5	5.9	6.5
85–89	+1.0	0.1	0.1	0.1
90–94	+1.0	0.0	0.0	0.0
95–100	+0.0	0.0	0.0	0.0

Figure 10 ($5.00/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of poverty rates for groups of households at a point in time, by sample size, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.7	45.3	59.1	79.8
4	–1.1	34.0	44.2	64.5
8	–1.3	26.8	33.0	49.4
16	–1.4	20.9	26.0	34.8
32	–1.2	15.2	18.5	24.7
64	–1.6	11.0	13.0	17.0
128	–1.6	8.0	8.8	11.5
256	–1.6	5.6	6.7	9.1
512	–1.6	4.1	4.9	6.0
1,024	–1.7	2.9	3.5	4.3
2,048	–1.7	2.0	2.4	3.1
4,096	–1.7	1.4	1.7	2.3
8,192	–1.7	1.0	1.2	1.6
16,384	–1.7	0.8	0.9	1.1

Figure 12 ($5.00/day 2005 PPP line): Differences and precision of differences for bootstrapped estimates of changes in group's poverty rates between two points in time, 2006 scorecard applied to the 2000 ENCOVI

Sample Size	Difference between estimate and true value			
		Confidence interval (+/– percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.4	64.9	79.0	101.7
4	–0.7	46.6	59.4	76.4
8	–1.0	34.8	44.3	58.0
16	–1.5	26.7	32.1	40.4
32	–1.7	19.3	23.1	30.7
64	–2.1	14.1	16.6	21.2
128	–2.2	9.9	11.8	15.2
256	–2.2	7.3	8.9	10.9
512	–2.4	5.2	6.5	8.0
1,024	–2.5	3.8	4.5	5.8
2,048	–2.5	2.6	3.0	4.1
4,096	–2.5	1.8	2.1	2.6
8,192	–2.5	1.2	1.5	2.0
16,384	–2.6	0.9	1.1	1.4

Figure 14 ($5.00/day 2005 PPP line): Households by targeting classification and score, along with "Total Accuracy" and BPAC, 2006 scorecard applied to the 2000 ENCOVI

Score	Inclusion: < poverty line correctly targeted	Undercoverage: < poverty line mistakenly non-targeted	Leakage: => poverty line mistakenly targeted	Exclusion: => poverty line correctly non-targeted	Total Accuracy Inclusion + Exclusion	BPAC See text
0–4	0.7	57.8	0.0	41.6	42.2	–97.7
5–9	2.0	56.4	0.0	41.6	43.6	–93.0
10–14	4.9	53.6	0.0	41.6	46.4	–83.3
15–19	8.5	49.9	0.0	41.5	50.0	–70.9
20–24	14.5	43.9	0.0	41.5	56.0	–50.3
25–29	21.0	37.4	0.1	41.4	62.5	–27.8
30–34	27.5	31.0	0.4	41.1	68.6	–5.2
35–39	34.0	24.5	1.2	40.4	74.4	+18.4
40–44	39.8	18.6	2.2	39.3	79.1	+40.0
45–49	45.4	13.0	4.2	37.4	82.8	+62.6
50–54	49.3	9.1	6.0	35.5	84.9	+79.2
55–59	52.3	6.2	9.4	32.1	84.4	+83.9
60–64	55.1	3.4	14.8	26.7	81.8	+74.7
65–69	56.6	1.9	20.4	21.1	77.7	+65.1
70–74	57.5	0.9	25.5	16.0	73.5	+56.3
75–79	58.1	0.4	31.5	10.0	68.1	+46.1
80–84	58.4	0.0	36.7	4.8	63.3	+37.2
85–89	58.4	0.0	39.6	2.0	60.4	+32.3
90–94	58.4	0.0	41.4	0.2	58.6	+29.2
95–100	58.4	0.0	41.6	0.0	58.4	+28.9

Inclusion, undercoverage, leakage, and exclusion normalized to sum to 100.

Figure 15 ($5.00/day 2005 PPP line): Households below the poverty line and all households at a given score or at or below a given score cut-off, 2006 scorecard applied to the 2000 ENCOVI

Targeting cut-off	% all households who are targeted	% targeted who are poor	% of poor who are targeted	Poor households targeted per non-poor household targeted
0–4	0.7	100.0	1.1	Only poor targeted
5–9	2.0	100.0	3.5	Only poor targeted
10–14	4.9	100.0	8.3	Only poor targeted
15–19	8.5	99.9	14.5	1,960.1:1
20–24	14.5	99.8	24.8	399.9:1
25–29	21.2	99.4	36.0	173.5:1
30–34	27.9	98.5	47.0	65.9:1
35–39	35.2	96.6	58.2	28.5:1
40–44	42.0	94.7	68.1	18.0:1
45–49	49.6	91.6	77.7	10.9:1
50–54	55.4	89.1	84.4	8.2:1
55–59	61.7	84.7	89.4	5.5:1
60–64	69.9	78.8	94.2	3.7:1
65–69	77.0	73.5	96.8	2.8:1
70–74	83.1	69.3	98.4	2.3:1
75–79	89.6	64.8	99.4	1.8:1
80–84	95.1	61.4	100.0	1.6:1
85–89	98.0	59.6	100.0	1.5:1
90–94	99.8	58.6	100.0	1.4:1
95–100	100.0	58.4	100.0	1.4:1

Appendix A:
Guide to Interpretation of Scorecard Indicators

The following information comes from:

Instituto Nacional de Estadística. (2006) *Manual de Procedimientos Técnicos del Encuestador*, Guatemala. (the "manual")

1. How many household members are aged 13 or younger?

According to page 37 of the manual, "a household is the social unit made up of a single person or a group of people who normally reside in the same residence and who together share the ways and means of satisfying their basic necessities. These people may or may not be related by blood, being characterized by the long-term sharing of cooking and eating arrangements among all household members. That is to say, household members eat from the same pot and sleep under the same roof. A household may be made up of a single person."

2. Do all children ages 7 to 13 attend school?

According to page 122 of the manual, this question asks about "enrollment in the current school year in a formal educational institution (schools, high schools, institutes, and colleges.) . . . It is important to note that someone who enrolls can still, at some point, drop out. In any case, the key issue for the purposes of this question is whether the child enrolled in the current school year."

3. Can the female head/spouse read and write?

According to page 117 of the manual (see also page 122), "If a person only knows how to read or only knows how to write, then he or she is considered illiterate. Likewise, people who only know how to write or sign their names are to be considered illiterate."

4. Do any household members work mainly as casual laborers or domestic workers?

According to page 152 of the manual, "*Casual laborer* refers only to those who produce goods or services as directed by a boss, who are contracted by the day, task, job, or batch, independently of how frequently payment is made, and who receive a fixed payment or a piece-rate. The casual laborer does manual labor during a workday that usually lasts eight hours.

"*Domestic servant* refers to domestic workers who, in exchange for payment, do such tasks as cooking, ironing, housecleaning, child care, gardening, driving, etc. on a long-term basis. They may be lodged permanently in the residence of their boss, but they have a long-term employment relationship with a salary or wage that generally is paid monthly."

5. What is the main construction material of the residence's floors?

According to page 48 of the manual, "The question refers to the material that makes up the majority of the floors of all rooms in the residence. The response should not be based only on the floor material of the front room, as in some residences the floor of the front room is made of a different material than the floors of the other rooms. Do not record floor coverings such as carpets or staves."

6. Does the household have a refrigerator?

According to page 222 of the manual, the concept of *refrigerator* includes "electric refrigerators as well as gas refrigerators, regardless of model or size. Also included are freezers as well as coolers that do not make or store ice."

7. Does the household have a gas or electric stove?

According to page 222 of the manual, "The concept of *gas or electric stove* encompasses the different types of this appliance, including (for example) stoves with ovens, stoves without ovens, stoves using propane gas, stoves using LPG, and stoves using electricity. It does not include stoves that use firewood."

8. Does the household have a stone mill?

The manual does not provide additional information about this indicator.

9. Does the household have an electric iron?

The manual does not provide additional information about this indicator.

10. If any household member works mainly in agriculture, animal husbandry, hunting, or fishing, does the household have any cows, bulls, calves, pigs, horses, burros, or mules?

The manual does not provide additional information about this indicator.