Simple Poverty Scorecard® Poverty-Assessment Tool Nicaragua

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Abstract

The Simple Poverty Scorecard-brand poverty-assessment tool uses ten low-cost indicators from Nicaragua's 2009 Living Standard 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 Nicaragua to measure poverty rates, to track changes in poverty rates over time, and to segment clients for targeted services.

Version note

This paper updates Schreiner and Woller (2010), using data from 2009 instead of 2005. Estimates from the two scorecards are compatible because they use the same definition of poverty, so users of the old scorecard can (and should) switch to the new one here.

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Simple Poverty Scorecard® Poverty-Assessment Tool

			Name	Identifier
Interview ID:				
Interview date:		Participant:		
Country:	NIC	Field agent:		
Scorecard:	002	Service point:		
Sampling wgt.:		Number of household members:		

Indicator	Response	Points	Score
1. How many household members are there?	A. Eight or more	0	
	B. Seven	5	
	C. Six	9	
	D. Five	13	
	E. Four	19	
	F. Three	27	
	G. One or two	41	
2. Are all household members ages 7 to 18 enrolled this school year in the formal educational system?	A. No one 7 to 18	0	
	B. No	2	
	C. Yes	6	
3. In their main line of work in the past seven days, how many household members were wage or salary workers?	A. None	0	
	B. One	3	
	C. Two or more	7	
4. How many rooms does the household have for its use (excluding kitchen, bathrooms, hallways, and garages)?	A. One	0	
	B. Two	2	
	C. Three or more	5	
5. What is the main material of the floor of the residence?	A. Dirt, or other	0	
	B. Wood planks, mud bricks, or tiles and concrete	3	
	C. Cement bricks or tile (mosaic, ceramic, or glazed)	11	
6. What fuel does the household usually use for cooking?	A. Non-purchased firewood	0	
	B. Purchased firewood, charcoal, or does not cook	5	
	C. Butane or propane gas, kerosene, electricity, or other	10	
7. Does the household have an iron?	A. No	0	
	B. Yes	2	
8. Does the household have a blender?	A. No	0	
	B. Yes	4	
9. How many cellular telephones does the household have?	A. None	0	
	B. One	3	
	C. Two or more	8	
10. Does the household have a bicycle, boat, horse, donkey, mule, motorcycle, or automobile?	A. No	0	
	B. Yes	6	

Score:

Back-page Worksheet:
Household Members, Education, and Employment

At the start of the interview, read to the respondent: *Please tell me the names and ages of all members of your household. These are all people—regardless of blood relationship and regardless of presence at the residence on the day of the interview—who have lived (slept and ate) in the same residence for at least three of the past 12 months, eating together and generally sharing their resources and expenses. Count the household head as a household member, even if he/she has been absent for more than nine of the past 12 months. Also count newborns less than three-months-old who are children of a household member and any other children, elderly people, ill people, and those who are temporarily absent on the day of the interview but who fulfill all the other criteria to be household members. Do not count domestic servants, lodgers, or their families.*

For each member ages 7 to 18, please tell me whether he or she is enrolled this year in the formal educational system. For each member ages 10 and up, please tell me whether he or she, in his or her main line of work in the past seven days, was a wage or salary worker.

Record each household member's name and age. Then count the number of members, mark the response to the first scorecard indicator, and record the number in the space for "# HH members".

For each member 7- to 18-years-old, ask about school enrollment. Determine whether all children ages 7 to 18 were enrolled, then mark the response to the second indicator. Remember, if no members are ages 7 to 18, then mark response A.

For each member 10-years-old or older, ask their being wage or salary workers. Count the number who are, and mark the response for the third indicator.

Name	Age	If <name> is 7- to 18-years-old, did he or she enroll this school year in the formal educational system?		If <name> is 10-years-old or older, then was he or she, in the last 7 days in his/her main line of work, a wage or salary worker?	
1.		Yes	No	Yes	No
2.		Yes	No	Yes	No
3.		Yes	No	Yes	No
4.		Yes	No	Yes	No
5.		Yes	No	Yes	No
6.		Yes	No	Yes	No
7.		Yes	No	Yes	No
8.		Yes	No	Yes	No
9.		Yes	No	Yes	No
10.		Yes	No	Yes	No
11.		Yes	No	Yes	No
12.		Yes	No	Yes	No
Total "Yes":					

Look-up table for converting scores to poverty likelihoods: National poverty lines

	Poverty likelihood (%)			
		National lines		
Score	**Food**	**100%**	**150%**	**200%**
0–4	80.5	100.0	100.0	100.0
5–9	61.8	97.6	100.0	100.0
10–14	52.1	93.7	100.0	100.0
15–19	43.4	87.6	98.7	100.0
20–24	21.4	71.6	98.3	99.9
25–29	14.2	67.7	94.4	99.4
30–34	11.1	59.3	90.6	98.4
35–39	4.1	40.4	81.5	96.9
40–44	2.9	21.3	62.6	89.0
45–49	0.4	14.6	54.3	80.3
50–54	0.0	6.7	43.4	70.2
55–59	0.0	3.1	27.8	55.7
60–64	0.0	1.3	16.1	41.7
65–69	0.0	0.2	7.6	28.1
70–74	0.0	0.0	6.3	12.0
75–79	0.0	0.0	0.2	5.8
80–84	0.0	0.0	0.0	4.6
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

Look-up table for converting scores to poverty likelihoods: International 2005 and 2011 PPP poverty lines

	Poverty likelihood (%)							
	Intl. 2005 PPP lines						Intl. 2011 PPP lines	
Score	**$1.25**	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
0–4	66.8	80.5	89.3	100.0	100.0	100.0	76.6	87.8
5–9	37.7	75.2	89.3	99.7	100.0	100.0	42.7	87.8
10–14	28.4	65.7	84.3	99.4	100.0	100.0	32.7	78.7
15–19	13.7	58.6	78.6	97.8	99.2	99.3	22.3	67.7
20–24	5.7	38.3	62.5	97.1	98.9	99.1	12.0	50.7
25–29	2.7	27.2	48.5	91.6	97.8	99.0	7.4	39.5
30–34	1.1	21.3	44.5	84.9	96.2	97.0	4.8	32.8
35–39	0.8	8.1	21.9	76.4	92.0	94.5	1.1	14.0
40–44	0.4	3.5	12.1	55.4	75.9	84.0	0.5	7.1
45–49	0.0	0.6	7.9	43.2	68.4	75.1	0.0	4.4
50–54	0.0	0.1	2.9	32.3	57.5	65.6	0.0	1.2
55–59	0.0	0.1	0.8	20.6	41.0	47.7	0.0	0.3
60–64	0.0	0.1	0.3	12.7	29.6	36.3	0.0	0.2
65–69	0.0	0.0	0.0	5.3	16.2	20.6	0.0	0.0
70–74	0.0	0.0	0.0	4.4	8.7	9.7	0.0	0.0
75–79	0.0	0.0	0.0	0.0	1.9	3.2	0.0	0.0
80–84	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0
85–89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90–94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95–100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Look-up table for converting scores to poverty likelihoods: Relative and percentile-based poverty lines

	Poverty likelihood (%)					
	Poorest half of people	Percentile-based lines				
Score	below 100% Natl. line	20th	40th	50th	60th	80th
0–4	82.2	82.2	100.0	100.0	100.0	100.0
5–9	82.2	82.2	97.6	99.1	99.5	100.0
10–14	69.1	68.5	95.3	97.7	98.7	100.0
15–19	58.8	56.3	91.2	94.9	97.4	100.0
20–24	34.5	32.2	71.3	86.8	97.3	99.9
25–29	23.7	22.7	67.1	81.8	92.0	99.9
30–34	18.5	18.0	54.8	72.2	83.2	99.0
35–39	5.8	5.1	34.9	55.4	71.9	96.7
40–44	2.9	2.9	20.5	31.2	48.7	88.9
45–49	0.4	0.4	10.1	21.3	38.7	79.1
50–54	0.0	0.0	4.1	11.5	27.6	68.5
55–59	0.0	0.0	1.5	6.1	15.5	52.0
60–64	0.0	0.0	0.8	2.6	7.3	38.9
65–69	0.0	0.0	0.0	1.4	3.2	24.1
70–74	0.0	0.0	0.0	0.7	1.5	11.2
75–79	0.0	0.0	0.0	0.0	0.0	7.7
80–84	0.0	0.0	0.0	0.0	0.0	3.8
85–89	0.0	0.0	0.0	0.0	0.0	0.0
90–94	0.0	0.0	0.0	0.0	0.0	0.0
95–100	0.0	0.0	0.0	0.0	0.0	0.0

Simple Poverty Scorecard® Poverty-Assessment Tool Nicaragua

1. Introduction

Pro-poor programs in Nicaragua 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 new scorecard here uses 2009 data; it replaces the scorecard in Schreiner and Woller (2010) that uses 2005 data. For now on, only the new 2009 scorecard should be used. For a given poverty line, estimates from both the old and new scorecards are compatible because they are based on the same definition of poverty. This means that existing users of the old scorecard do not have to start over from scratch; they can estimate changes in poverty rates over time with a baseline from the 2005 scorecard and a follow-up from the 2009 scorecard.

The direct approach to poverty measurement via expenditure surveys is difficult and costly. As a case in point, Nicaragua's 2009 Living Standards Measurement Survey (EMNV, *Encuesta Nacional de Hogares sobre Medición de Nivel de Vida*) runs more than 30 pages. Enumerators visited each household twice, completing about 1.5

interviews per day. In the 15 days between the two visits, the household kept a log of all their consumption. The expenditure module includes hundreds of questions such as "In the past 15 days, did any household member buy oatmeal or *pinolillo*?[1] If yes, how frequently did you buy it? How much was bought each time? How much did this amount cost? In the past 15 days, did the household consume any oatmeal or *pinolillo* that you grew yourself, received as a gift or as payment for services, or was taken from the inventory of a store you own? How frequently did you consume oatmeal or *pinolillo* obtained in this way? How much was obtained each time? How much would you have paid for this, if you had to buy it? . . . Now then, in the past 15 days, did anyone in the household buy tortillas? . . ."

In comparison, the indirect approach via the scorecard is simple, quick, and inexpensive. It uses ten verifiable indicators (such as "What is the main material of the floor of the residence?" or "Does the household have a blender?") to get a score that is highly correlated with poverty status as measured by the exhaustive EMNV survey.

The scorecard differs from "proxy means tests" (Coady, Grosh, and Hoddinott, 2004) 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 organizations are typically blunt (such as rules based on land-ownership or housing quality) or subjective and relative (such as participatory wealth ranking facilitated by skilled field workers). Estimates from these approaches are not

[1] *Pinolillo* is a traditional gritty Nicaraguan drink made of sweet cornmeal and cacao.

comparable across villages, organizations, nor time, they may be costly, and their accuracy is unknown.

The scorecard can be used to measure the share of a program's participants who are below a given poverty line, such as the Millennium Development Goals' $1.25/day line at 2005 purchase-power parity or the International Finance Corporation's $8.00/day 2005 PPP standard for defining the "base of the pyramid".[2] USAID microenterprise partners can use scoring with the USAID "extreme" line to report how many of their participants are "very poor".[3] Scoring can also be used to measure net movement across a poverty line over time. In all these cases, the scorecard provides an expenditure-based, objective tool with known accuracy. While expenditure surveys are costly even for governments, some local pro-poor organizations may be able to implement an inexpensive scorecard to help with poverty monitoring and (if desired) targeting.

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, then they must first trust that it works. Transparency and simplicity build

[2] For market-driven investments, IFC defines the "base of the pyramid" as households who have expenditure below $8.00/day 2005 PPP or who lack of access to basic socio-economic services such as shelter, utilities, water, and sanitation. For convenience, however, the rest of this document refers to $8.00/day as a *poverty line*.

[3] USAID defines a household as "very poor" if its daily per-capita expenditure is below the highest of the $1.25/day 2005 PPP line (NIO13.94 in Nicaragua in 2009, Figure 1) or the USAID "extreme" line that divides people in households below Nicaragua's national poverty line into two equal-size groups (NIO23.08).

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 they do not work, but because they are presented (when they are presented at all) as tables of regression coefficients incomprehensible to non-specialists (with cryptic indicator names such as "`LGHHSZ_2`" and with points with negative values and many decimal places). Thanks to the predictive-modeling phenomenon known as the "flat maximum", simple scoring approaches can be about as accurate as complex ones (Schreiner, 2012; Caire and Schreiner, 2012).

Beyond its simplicity and transparency, the scorecard's technical approach is 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 these accuracy tests are simple and commonplace 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 data from the 2009 EMNV from Nicaragua's *Instituto Nacional de Información de Desarrollo* (INIDE). 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
- Applicable in all regions of Nicaragua

All points in the scorecard are non-negative 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 about 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 estimate is the average poverty likelihood among the households in the group.

Third, the scorecard can estimate changes in the poverty rate for a group of households (or for two independent samples of households that are both representative of the same population) between two points in time. This estimate is the change in the average poverty likelihood of the group(s) of households from baseline to follow-up.

The scorecard can also be used for targeting. To help managers choose an appropriate targeting cut-off for their purposes, 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 Nicaragua's national poverty line. Scores from this one scorecard are calibrated to poverty likelihoods for nine poverty lines.

The scorecard is constructed and calibrated using half of the data from the 2009 EMNV. The other half is used to validate the scorecard's accuracy for estimating households' poverty likelihoods, for estimating groups' poverty rates at a point in time, and for targeting. Accuracy for estimating changes in poverty rates for population over

time is tested using the validation sample from the 2009 EMNV and all the data from the 2005 EMNV.

All three scoring estimators are *unbiased*. That is, they match the true value on average in repeated samples when constructed from (and applied to) a single, constant population. Like all predictive models, the specific scorecard here misses the mark to some extent when constructed from a single sample (such as the 2009 EMNV) and when applied to a different population.[4]

Thus, while the indirect scoring approach is less costly than the direct survey approach, it is also biased when applied in practice. (The survey approach is unbiased by definition.) There is bias because the scorecard is constructed from a single sample and because scoring must assume that the future relationships between indicators and poverty in all possible groups of households will be the same as in the construction data. Of course, this assumption—ubiquitous and inevitable in predictive modeling—holds only partly.

When applied to the 2009 validation sample with 1,000 bootstraps of $n = 16{,}384$, the average difference between scorecard estimates of groups' poverty rates and the true rates at a point in time with the national line is –1.7 percentage points. The average absolute difference across all nine lines is 1.7 percentage points. These differences are due to sampling variation rather than bias; the average difference would be zero if the

[4] Important examples include nationally representative samples at a different point in time or sub-groups that are not nationally representative (Tarozzi and Deaton, 2009).

whole 2009 EMNV were to be repeatedly redrawn and divided into sub-samples before repeating the entire process of constructing and validating scorecards.

The 90-percent confidence intervals for these estimates are ±0.6 percentage points or less. For n = 1,024, the 90-percent intervals are ±2.2 percentage points or less.

To check the accuracy and precision of estimates of changes in poverty rates over time, the new 2009 scorecard is applied to the 2009 validation sample as a baseline and then again to the full 2005 EMNV as a follow-up estimate. The average absolute difference in 1,000 bootstraps with n = 16,384 across eight poverty lines[5] is 5.1 percentage points. Omitting the three highest and least-relevant poverty lines (two of which have vast over-estimates of change), the average true change across the remaining five lines from 2005 to 2009 is about –6.8 percentage points. The average absolute difference between the estimate and the true value for these five lines is 2.7 percentage points, and the average relative error is about 43 percent. In terms of precision, the 90-percent confidence intervals with n = 16,384 are ±0.9 percentage points or narrower. For all eight lines, scoring correctly estimated that poverty decreased, and (90-percent confidence and n = 1,024), the decrease is statistically different from zero.

[5] Change is not estimated for the USAID "extreme" line because it is not constant in real terms.

Section 2 below describes data and poverty lines. Sections 3 and 4 describe scorecard construction and offer guidelines for use in practice. 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 over time, and Section 8 covers targeting. Section 9 places the scorecard here in the context of similar exercises for Nicaragua. The last 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 6,515 households in the 2009 EMNV. This is Nicaragua's most recent national expenditure survey.

For the purposes of the scorecard, the households in the 2009 EMNV are randomly divided into two sub-samples:

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

The entire 2005 EMNV is used to validate estimates of change over time.

2.2 Poverty rates

A *poverty rate* is the share of units in households in which total household expenditure (divided by the number of household members) is below a given poverty line. The unit is either the household itself or a person in the household. Each household member has the same poverty status (or estimated poverty likelihood) as does the household as a whole.

Suppose a program serves two households. The first household is poor (its per-capita expenditure is less than a given poverty line), and it has three members, one of whom is a program participant. The second household is non-poor and has four members, two of whom are participants.

Poverty rates are either at the household-level or person-level. If the program defines its participants as households, then the household level is relevant. The estimated household-level poverty rate is the equal-weighted average of poverty statuses (or estimated poverty likelihoods) across households with participants. In the example here, this is $\frac{1 \cdot 1 + 1 \cdot 0}{1 + 1} = \frac{1}{2} = 0.5 = 50$ percent. In the "$1 \cdot 1$" term in the numerator, the first "1" is the first household's weight, and the second "1" is the first household's poverty status (poor). In the "$1 \cdot 0$" term in the numerator, the "1" is the second household's weight, and the "0" is the second household's poverty status (non-poor). The "$1 + 1$" in the denominator is the sum of the weights. Each household has a weight of one (1) because the unit of analysis is the household.

Alternatively, a person-level rate is relevant if a program defines all people in households that benefit from its services as participants. In the example here, the person-level rate is the household-size-weighted average of poverty statuses for households with participants, or $\frac{3 \cdot 1 + 4 \cdot 0}{3 + 4} = \frac{3}{7} = 0.43 = 43$ percent. In the "$3 \cdot 1$" term in the numerator, the "3" is the first household's weight because it has three members, and the "1" is its poverty status (poor). In the "$4 \cdot 0$" term in the numerator, the "4" is

the second household's weight because it has four members, and the zero is its poverty status (non-poor). The "$4 + 3$" in the denominator is the sum of the weights. A household's weight is its number of members because the unit of analysis is the household member.

As a final example that pertains to what is likely the most common situation in practice, a program may count as participants only those with whom it deals with directly. For the example here, this means that some—but not all—household members are counted. The person-level rate is now the participant-weighted average of the poverty statuses of households with participants, or $\frac{1 \cdot 1 + 2 \cdot 0}{1 + 2} = \frac{1}{3} = 0.33 = 33$ percent. The first "1" in the "$1 \cdot 1$" in the numerator is the first household's weight because it has one participant, and the second "1" is its poverty status (poor). In the "$2 \cdot 0$" term in the numerator, the "2" is the second household's weight because it has two participants, and the zero is its poverty status (non-poor). The "$1 + 2$" in the denominator is the sum of the weights. Each household's weight is its number of participants because the unit of analysis is the participant.

To summarize, estimated poverty rates are weighted averages of households' poverty statuses (or estimated poverty likelihoods), where the weights are the number of relevant units in the household. When reporting, programs should explain who is counted as a participant and why.

Figure 1 reports poverty rates and poverty lines for Nicaragua at both the household-level and the person-level for 2005 and 2009 for the construction and

validation samples. Figure 2 is similar, covering Nicaragua overall and each of its 17 provinces by urban/rural/all. Figures 1 and 2 report person-level poverty rates because these are the types of rates reported by governments and used in most policy discussions. Household-level poverty rates are also reported because—as discussed above—household-level poverty likelihoods can be straightforwardly converted into poverty rates for other units of analysis. This is also why the scorecard is constructed, calibrated, and validated using poverty status and poverty likelihoods at the household level.

2.3 Poverty lines

Nicaragua's official food poverty line (*línea de pobreza extrema*) is the cost (NIO19.15) of a food basket with 2,268 Calories. This basket was set in the past, with adjustments over time for food-price inflation and changes in the estimated Caloric needs of an average Nicaraguan. A price deflator—derived from the 2009 EMNV—adjusts this country-wide food line for food-price differences across Primary Sampling Units (INIDE, 2006). For Nicaragua overall in 2009, the poverty rate for the food line is 9.9 percent for households and 14.6 percent for people (Figure 1).[6]

The national poverty line (here sometimes called "100% of the national line", corresponding to INIDE's *línea de pobreza general*) in 2009 is NIO32.53 per person per

[6] The person-level poverty rates for the food and national lines here match those in INIDE (2011a, p. 13). INIDE does not report household-level rates.

day. This is the food line plus the cost of essential non-food goods and services (INIDE, 2011a). The content of the non-food basket was set in the past, and its cost is updated to 2009 for inflation.[7] The all-Nicaragua poverty rate for the national line is 33.0 percent for households and 42.5 percent for people (Figure 1).

The national line is used to construct the scorecard. Because programs may want to use different or various poverty lines, this paper calibrates scores from its single scorecard to poverty likelihoods for nine lines:

- Food
- 100% of national
- 150% of national
- 200% of national
- USAID "extreme"
- $1.25/day 2005 PPP
- $2.50/day 2005 PPP
- $3.75/day 2005 PPP
- $8.00/day 2005 PPP

The USAID "extreme" line is defined as the median expenditure of people (not households) below the national line (United States Congress, 2004).

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

- 2005 PPP exchange rate of NIO7.297 per $1.00 (Sun and Swanson, 2009)
- Consumer Price Index for Nicaragua overall, averaged across months:[8]
  - — July to October of 2005 (2005 EMNV fieldwork) of 150.3475
  - — September to October 2009 (2009 EMNV fieldwork) of 222.400
  - — January to December 2005 of 147.3883

[7] I have not found documentation on the derivation and valuation of the original food and non-food baskets.

[8] `bcn.gob.ni/estadisticas/inflacion/1008/8.pdf`, accessed 4 December 2009, and `bcn.gob.ni/estadisticas/trimestrales_y_mensuales/siec/datos/4.ipcn.1.xls`, accessed 9 December 2012.

Given this, the $1.25/day 2005 PPP line for Nicaragua in average prices in September to October of 2009 is (Sillers, 2006):

$$(\text{2005 PPP exchange rate}) \cdot \$1.25 \cdot \left(\frac{\text{CPI}_{\text{Sept-Oct. 2009}}}{\text{CPI}_{\text{2005 average}}} \right) =$$

$$\left(\frac{\text{NIO}7.297}{\$1.00} \right) \cdot \$1.25 \cdot \left(\frac{222.400}{147.3883} \right) = \text{NIO}13.76.$$

This 2005 PPP line applies to Nicaragua as a whole in 2009. It is adjusted for cost-of-living differences across regions by multiplying it by each region's cost-of-living deflator (provided by INIDE with the data for the 2009 EMNV). The person-weighted average deflator is 1.0127 rather than precisely 1, which is why Figures 1 and 2 report $1.25/day lines of NIO13.94 instead of NIO13.76.

USAID microenterprise partners who use the scorecard should report poverty rates to USAID based on the USAID "extreme" line. This is because USAID defines "very poor" as those households whose expenditure is below the highest of two lines:

- $1.25/day 2005 PPP (NIO13.94)
- The USAID "extreme" line that divides people in households below the national line into two equal-size groups (NIO23.08).

The definition of poverty status—that is, the definition of the measure of expenditure and the definitions of the food poverty line, the national line, and the $1.25/day 2005 PPP line—are the same in the 2009 EMNV as in the 2005 EMNV.[9] This means that estimates from the new scorecard (based on data from the 2009 EMNV) are compatible with those from the previous scorecard (based on data from the 2005 EMNV, see Schreiner and Woller, 2010). This compatibility means that existing users of the old 2005 scorecard can switch to the new 2009 scorecard and still measure changes in poverty rates over time with a baseline from the old scorecard and a follow-up from the new scorecard.

[9] This is inferred because the documentation of the 2009 EMNV does not mention any changes to the definition of poverty status and because INIDE (2011b, p. 3) states that the approach in 2009 "is characterized mainly by the application of the same methods as in previous EMNVs."

3. Scorecard construction

For Nicaragua, about 120 candidate indicators are initially prepared in the areas of:

- Family composition (such as household size)
- Education (such as school attendance)
- Housing (such as the number of rooms)
- Ownership of durable goods (such as irons or blenders)
- Employment (such as the number of wage or salary workers)
- Agriculture (such as the ownership of livestock)
- Participation in social programs (such as free school lunches)

Figure 3 lists the candidate indicators, ordered by the entropy-based "uncertainty coefficient" (Goodman and Kruskal, 1979) that measures how well a given indicator predicts poverty on its own.

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, the ownership of a blender 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. The first step is to use Logit to build one scorecard for each candidate indicator. Each scorecard's statistical power is taken as "c", a measure of its ability to rank households 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). These include 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, variety among indicators, applicability across regions, and verifiability.

A series of two-indicator scorecards are then built, each based on the one-indicator scorecard selected from the first round, 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.

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).

This algorithm is similar to common R^2-based stepwise 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.[10] The use of non-statistical criteria can improve robustness through time and helps ensure that indicators are simple, sensible, and acceptable to users.

[10] The statistical criterion for selecting an indicator is not the p value of its coefficient but rather its contribution to the ranking of households by poverty status.

The single scorecard here applies to all of Nicaragua. Evidence from Indonesia (World Bank, 2012), India and Mexico (Schreiner, 2006 and 2005a), Sri Lanka (Narayan and Yoshida, 2005), and Jamaica (Grosh and Baker, 1995) suggests that segmenting scorecards by urban/rural does not improve targeting accuracy much, although it may improve the bias and precision of estimates of poverty rates (Tarozzi and Deaton, 2009).

4. Practical guidelines for scorecard use

The main challenge of scorecard design is not to maximize statistical accuracy but rather to improve the chances that scoring is actually used in practice (Schreiner, 2005b). When scoring projects fail, the reason is not usually statistical 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 have similar targeting accuracy, thanks to the empirical phenomenon known as the "flat maximum" (Caire and Schreiner, 2012; 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 adopt it and use it properly. Of course, accuracy matters, but it is balanced against 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 imply a lot of additional work and if the whole process generally seems to make sense.

To this end, Nicaragua's scorecard fits on one page. The construction process, indicators, and points are simple and transparent. Additional work is minimized; non-specialists can compute scores by hand in the field because the scorecard has:

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

A field worker using Nicaragua's paper scorecard would:

- Record the participant's and field worker's identifiers and relevant dates
- Complete the back-page worksheet with each household member's name, age, school attendance, and employment type
- Record household size and the responses to the first, second, and third indicators based on the back-page worksheet
- Read each remaining question from the scorecard
- Circle the 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

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 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).[11] IRIS Center (2007a) and Toohig (2008) are useful nuts-and-bolts guides for budgeting, training field workers and

[11] If a program does not want field workers to know the points associated with indicators, then it can use a version of the scorecard without points and apply the points later at a central office. Schreiner (2011) argues that in Colombia (Camacho and Conover, 2011), hiding points did little to deter cheating and that cheating by the user's central office was more damaging than cheating by field agents and respondents.

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

In particular, while collecting scorecard indicators is relatively easier than alternatives, it is still absolutely difficult. Training and explicit definitions of terms and concepts in the scorecard is essential, and field workers should scrupulously study and follow the "Guidelines for the Interpretation of Indicators" found at the end of this paper, as they are an integral part of the Simple Poverty Scorecard tool.

For the example of Nigeria, Onwujekwe, Hanson, and Fox-Rushby (2006) find distressingly low inter-rater and test-retest correlations for indicators as seemingly simple and obvious as whether the household owns an automobile. At the same time, Grosh and Baker (1995) find that gross underreporting of assets does not affect targeting. For the first stage of targeting in a conditional cash-transfer program in Mexico, Martinelli and Parker (2007, pp. 24–25) 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". Still, as is done in Mexico in the second stage of its targeting process, most false self-reports can be corrected (or avoided in the first place) by field agents who verify responses with a home visit, and this is the suggested procedure when the scorecard is used for targeting in Nicaragua.

In terms of sampling 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

In general, the sampling design should follow from the organization's goals for the exercise, the questions to be answered, and the budget.

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 a central office
- Paper in the field and then keyed into a database or spreadsheet at an office
- Portable electronic devices in the field and uploaded to a database

Given a population relevant for a particular business question, the participants to be scored can be:

- All relevant participants (a census)
- A representative sample of all relevant participants
- All relevant participants in a representative sample of relevant field offices
- A representative sample of all relevant participants in a representative sample of relevant field offices

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:

- As a once-off project (precluding measuring change)
- Every two years (or at some other 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 change in poverty rates, it can be applied:

- With a different set of participants
- With the same set of participants

An example set of choices are illustrated by BRAC and ASA, two microlenders in Bangladesh who each have more than 7 million participants and who are applying the Simple Poverty Scorecard tool for Bamgladesh (Chen and Schreiner, 2009). Their design is that loan officers in a random sample of branches score all participants each time they visit a homestead (about once a year) as part of their standard due diligence prior to loan disbursement. They record responses on paper in the field before sending the forms to a central office to be entered into a database and converted to poverty likelihoods. ASA's and BRAC's sampling plans cover 25,000–50,000 participants each.

5. Estimates of household poverty likelihoods

The sum of scorecard points for a household is called the *score*. For Nicaragua, 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 line, the scores themselves have only relative units. For example, doubling the score increases the likelihood of being above a given poverty line, but it does not double the likelihood.

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, scores of 30–34 have a poverty likelihood of 59.3 percent, and scores of 35–39 have a poverty likelihood of 40.4 percent (Figure 4).

The poverty likelihood associated with a score varies by poverty line. For example, scores of 30–34 are associated with a poverty likelihood of 59.3 percent for the national line but of 1.1 percent for the $1.25/day 2005 PPP line.[12]

5.1 Calibrating scores with poverty likelihoods

A given score is 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.

[12] Starting with Figure 4, many figures have nine versions, one for each of the nine poverty lines. To keep them straight, they are grouped by poverty line. Single tables pertaining to all poverty lines are placed with the tables for the national line.

For the example of the national line (Figure 5), there are 7,607 (normalized) households in the calibration sub-sample with a score of 30–34, of whom 4,507 (normalized) are below the poverty line. The estimated poverty likelihood associated with a score of 30–34 is then 59.3 percent, because 4,507 ÷ 7,607 = 59.3 percent.

To illustrate with the national line and a score of 35–39, there are 8,407 (normalized) households in the calibration sample, of whom 3,394 (normalized) are below the line (Figure 5). Thus, the poverty likelihood for this score is 3,394 ÷ 8,407 = 40.4 percent.

The same method is used to calibrate scores with estimated poverty likelihoods for the other eight poverty lines.[13]

Even though the scorecard is constructed partly based on judgment, the calibration process produces poverty likelihoods that are objective, that is, derived from quantitative poverty lines and from survey data on expenditure. 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 constructed using only expert 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

[13] To ensure that poverty likelihoods always decrease as scores increase, it is sometimes necessary to average likelihoods iteratively across series of adjacent scores before grouping scores into ranges. This preserves unbiasedness, and it keeps users from balking when sampling variation in score ranges with few households leads to higher scores being linked with higher poverty likelihoods.

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 the Nicaragua scorecard are transformed coefficients from a Logit regression, (untransformed) 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. Going from scores to poverty likelihoods in this way requires no arithmetic at all, just a look-up table. This approach to calibration can also improve accuracy, especially with large samples.

5.2 Accuracy of estimates of households' poverty likelihoods

As long as the relationships between indicators and poverty do not change over time, and as long as the scorecard is applied to households that are representative of the same population from which the scorecard was constructed, then 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 and of changes in poverty rates between two points in time.[14]

Of course, the relationships between indicators and poverty do change to some unknown extent over time and also across sub-groups in Nicaragua's population. Thus, the scorecard will generally be biased when applied after October 2009 (the last month of fieldwork for the 2009 EMNV) or when applied with sub-groups that are not nationally representative.

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

How accurate are estimates of households' poverty likelihoods, given the assumption of constant relationships between indicators and poverty over time and the assumption of a sample that is representative of Nicaragua overall? To find out, the scorecard is applied to 1,000 bootstrap samples of size $n = 16{,}384$ from the 2009 validation sample. Bootstrapping entails (Efron and Tibshirani, 1993):

- Score each household in the 2009 validation sample
- Draw a new bootstrap sample *with replacement* from the 2009 validation sample
- For each score, compute the true poverty likelihood in the bootstrap sample, that is, the share of households with the score and with expenditure below a poverty line
- For each score, record the difference between the estimated poverty likelihood (Figure 4) and the true poverty likelihood in the bootstrap 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 bootstrap 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 7 shows the average difference between estimated and true poverty likelihoods as well as confidence intervals for the differences.

For the national line, the average poverty likelihood across bootstrap samples for scores of 30–34 in the 2009 validation sample is too high by 6.4 percentage points. For scores of 25–29, the estimate is too low by 6.9 percentage points.[15]

[15] These differences are not zero, in spite of the estimator's unbiasedness, because the scorecard comes from a single sample. The average difference by score range would be zero if samples were repeatedly drawn from the population and split into sub-samples before repeating the entire process of scorecard construction/calibration and validation.

The 90-percent confidence interval for the differences for scores of 30–34 is ±2.6 percentage points (national line, Figure 7). This means that in 900 of 1,000 bootstraps, the difference between the estimate and the true value is between +3.8 and +9.0 percentage points (because +6.4 – 2.6 = +3.8, and +6.4 + 2.6 = +9.0). In 950 of 1,000 bootstraps (95 percent), the difference is +6.4 ± 3.0 percentage points, and in 990 of 1,000 bootstraps (99 percent), the difference is +6.4 ± 4.0 percentage points.

For most scores, Figure 7 shows medium-to-large differences between estimated poverty likelihoods and true values. This is because the 2009 validation sample is a single sample that—thanks to sampling variation—differs in distribution from the construction/calibration sub-samples and from Nicaragua's population. For targeting, however, what matters is less the difference in all score ranges and more the difference 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.

In addition, if estimates of groups' poverty rates are to be usefully accurate, then errors for individual households must largely balance out. As discussed in the next section, this is generally the case.

Another possible source of differences between estimates and true values is overfitting. The scorecard here is unbiased, but it may still be *overfit* when applied after the end of the EMNV fieldwork in October 2009. That is, it may fit the data from the 2009 EMNV so closely that it captures not only some timeless patterns but also some

random patterns that, due to sampling variation, show up only in the 2009 EMNV. Or the scorecard may be overfit in the sense that it is not robust when relationships between indicators and poverty change over time or when it is applied to non-nationally representative samples.

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. Combining scorecards can also reduce overfitting, at the cost of greater complexity.

Most errors in individual households' likelihoods do cancel out in the estimates of groups' poverty rates (see later sections). Furthermore, at least some of the differences will come from non-scorecard sources such as changes in the relationships between indicators and poverty, sampling variation, changes in poverty lines, inconsistencies in data quality across time, and imperfections in cost-of-living adjustments across time and geographic regions. These factors can be addressed only by improving data quantity and quality (which is beyond the scope of the scorecard) 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 an organization samples three households on Jan. 1, 2013 and that they have scores of 20, 30, and 40, corresponding to poverty likelihoods of 71.6, 59.3, and 21.3 percent (national line, Figure 4). The group's estimated poverty rate is the households' average poverty likelihood of $(71.6 + 59.3 + 21.3) \div 3 = 50.7$ percent.

Be careful; the group's poverty rate is *not* the poverty likelihood associated with the average score. Here, the average score is 30, which corresponds to a poverty likelihood of 59.3 percent. This differs from the 50.7 percent found as the average of the three individual poverty likelihoods associated with each of the three scores. Unlike poverty likelihoods, scores are ordinal symbols, like letters in the alphabet or colors in the spectrum. Because scores are not cardinal numbers, they cannot be added up or averaged across households. Only three operations are valid for scores: conversion to poverty likelihoods, distributional analysis (Schreiner, 2012), or comparison—if desired—with a cut-off for targeting. The best rule to follow is: Always use poverty likelihoods, never scores.

6.1 Accuracy of estimated poverty rates at a point in time

For the Nicaragua scorecard applied to 1,000 bootstraps of n = 16,384 from the 2009 validation sample, the absolute difference between the estimated poverty rate at a point in time and the true rate is 4.0 percentage points or less (Figure 9, summarizing Figure 8 across poverty lines). The average absolute difference across the nine poverty lines is 1.7 percentage points. At least part of these differences is due to sampling variation in the division of the 2009 EMNV into two sub-samples.

When estimating poverty rates at a point in time, the bias reported in Figure 9 should be subtracted from the average poverty likelihood to make the estimate unbiased. For Nicaragua's scorecard and the national line, bias is –1.7 percentage points, so the unbiased estimate in the three-household example above is 50.7 – (–1.7) = 52.4 percent.

In terms of precision, the 90-percent confidence interval for a group's estimated poverty rate at a point in time with n = 16,384 is ±0.6 percentage points or less (Figure 9). This means that in 900 of 1,000 bootstraps of this size, the estimate (after subtracting off bias) is within 0.6 percentage points or less of the true value.

For example, suppose that the average poverty likelihood in a sample of n = 16,384 with the Nicaragua scorecard and the national line is 50.7 percent. Then estimates in 90 percent of samples of n = 16,384 would be expected to fall in the range of 50.7 – (–1.7) – 0.5 = 51.9 percent to 50.7 – (–1.7) + 0.5 = 52.9 percent, with the most likely true value being the unbiased estimate in the middle of this range (50.7 – (–

1.7) = 52.4 percent). This is because the original (biased) estimate is 50.7 percent, bias is –1.7 percentage points, and the 90-percent confidence interval for the national line is ±0.5 percentage points (Figure 9).

6.2 Formula for standard errors for estimates of poverty rates

How precise are the point-in-time estimates? Because the estimates are averages, they have (in "large" samples) a Normal distribution and can be characterized by their average difference vis-à-vis true values together 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 from indirect measurement via scorecards (Schreiner, 2008), first note that the textbook formula (Cochran, 1977) that relates confidence intervals with standard errors in the case of direct measurement of rates is $\pm c = \pm z \cdot \sigma$, where:

$\pm c$ is a confidence interval as a proportion (*e.g.*, 0.02 for ±2 percentage points),

z is from the Normal distribution and is $\begin{cases} 1.04 \text{ for confidence levels of 70 percent} \\ 1.28 \text{ for confidence levels of 80 percent} \\ 1.64 \text{ for confidence levels of 90 percent} \end{cases}$,

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

$\hat{p}$ is the estimated proportion of households below the poverty line in the sample,

ϕ is the finite population correction factor of $\sqrt{\frac{N - n}{N - 1}}$,

N is the population size, and

n is the sample size.

For example, Nicaragua's 2009 EMNV estimates a household-level poverty rate for the national line of $\hat{p} = 33.0$ percent (Figure 1) by direct measurement. If this estimate came from a sample of $n = 16{,}384$ households from a population N of 2,199,371 (the number of households in Nicaragua in September/October of 2009), then the finite population correction ϕ is $\sqrt{\frac{2{,}199{,}371 - 16{,}384}{2{,}199{,}371 - 1}} = 0.9963$, which can be taken as one (1). If the desired confidence level is 90-percent ($z = 1.64$), then the confidence interval $\pm c$ is $\pm\, z \cdot \sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}} = \pm 1.64 \cdot \sqrt{\frac{0.330 \cdot (1 - 0.330)}{16{,}384}} \cdot 1 = \pm 0.602$ percentage points.

The scorecard, however, does not measure poverty directly, so this formula is not applicable. To derive a formula for the Nicaragua scorecard, consider Figure 8, which reports empirical confidence intervals $\pm c$ for the differences for the scorecard applied to 1,000 bootstrap samples of various sizes from the 2009 validation sample. For example, with $n = 16{,}384$ and the national line, the 90-percent confidence interval is ± 0.515 percentage points.[16]

[16] Due to rounding, Figure 8 displays 0.5, not 0.515.

Thus, the 90-percent confidence interval with $n = 16{,}384$ is ± 0.515 percentage points for the Nicaragua scorecard and ± 0.602 percentage points for direct measurement. The ratio of the two intervals is $0.515 \div 0.602 = 0.86$.

Now consider the same case, but with $n = 8{,}192$. The confidence interval under direct measurement is $\pm 1.64 \cdot \sqrt{\frac{0.330 \cdot (1 - 0.330)}{8{,}192}} \cdot 1 = \pm 0.852$ percentage points. The empirical confidence interval with the Nicaragua scorecard (Figure 8) is ± 0.775 percentage points. Thus for $n = 8{,}192$, the ratio of the two intervals is $0.775 \div 0.852 = 0.91$.

This ratio of 0.91 for $n = 8{,}192$ is not far from the ratio of 0.86 for $n = 16{,}384$. Across all sample sizes of 256 or more in Figure 8, the average ratio turns out to be 0.88, implying that confidence intervals for indirect estimates of poverty rates via the Nicaragua scorecard and the national poverty line are about 12 percent narrower than confidence intervals for direct estimates via the 2009 EMNV. This 0.88 appears in Figure 9 as the "α factor" because if $\alpha = 0.88$, then the formula for confidence intervals c for the Nicaragua scorecard is $\pm c = \pm z \cdot \alpha \cdot \sigma$. That is, the formula for the standard error σ for point-in-time estimates of poverty rates via scoring is

$$\alpha \cdot \sqrt{\frac{\hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}}.$$

In general, α can 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 for eight of the nine poverty lines in Figure 9.

The formula relating confidence intervals with standard errors for the scorecard can be rearranged to give a formula for determining sample size before measurement. If $\widetilde{p}$ is the expected poverty rate before measurement, then the formula for sample size n from a population of size N that is based on the desired confidence level that corresponds to z and the desired confidence interval $\pm c$ is

$n = N \cdot \left(\frac{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})}{z^2 \cdot \alpha^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p}) + c^2 \cdot (N - 1)} \right)$. If the population N is "large" relative to the sample size n, then the finite population correction factor ϕ can be taken as one, and the formula becomes $n = \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \widetilde{p} \cdot (1 - \widetilde{p})$.

To illustrate how to use this, suppose the population N is 2,199,371 (the number of households in Nicaragua while the 2009 EMNV was in the field), suppose $c = 0.04375$, $z = 1.64$ (90-percent confidence), and the relevant poverty line is the national line so that the most sensible expected poverty rate $\widetilde{p}$ is Nicaragua's overall poverty rate for the national line in 2009 (33.0 percent at the household level, Figure 1). The α factor is 0.88 (Figure 9). Then the sample-size formula gives

$n = 2{,}199{,}371 \cdot \left(\frac{1.64^2 \cdot 0.88^2 \cdot 0.330 \cdot (1 - 0.330)}{1.64^2 \cdot 0.88^2 \cdot 0.330 \cdot (1 - 0.330) + 0.04375^2 \cdot (2{,}199{,}371 - 1)} \right) = 241$, which is not too far from the sample size of 256 observed for these parameters in Figure 8 for

the national line. Taking the finite population correction factor ϕ as one (1) gives the same answer, as $n = \left(\frac{0.88 \cdot 1.64}{0.04375}\right)^2 \cdot 0.330 \cdot (1 - 0.330) = 241$.[17]

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

In practice after the end of fieldwork for the EMNV in October 2009, a program would select a poverty line (say, the national line), note their participants' population size (say, $N = 10{,}000$ participants), select a desired confidence level (say, 90 percent, or $z = 1.64$), select a desired confidence interval (say, ±2.0 percentage points, or $c = \pm 0.02$), make an assumption about $\widetilde{p}$ (perhaps based on a previous measurement such as the poverty rate for the national line for Nicaragua overall of 33.0 percent in the 2009 EMNV in Figure 1), look up α (here, 0.88, Figure 9), assume that the scorecard will still work in the future and/or for non-nationally representative sub-groups,[18] and

[17] Although USAID has not specified required confidence levels nor intervals, IRIS Center (2007a and 2007b) says that a sample size of $n = 300$ is sufficient for USAID reporting. USAID microenterprise partners in Nicaragua should report using the USAID "extreme" line. Given the α factor of 0.95 for this line (Figure 9), an expected before-measurement household-level poverty rate of 14.8 percent (the all-Nicaragua rate for 2009, Figure 1), and a confidence level of 90 percent, then $n = 300$ implies a confidence interval of $\pm 0.95 \cdot 1.64 \cdot \sqrt{\frac{0.148 \cdot (1 - 0.148)}{300}} = \pm 3.2$ percentage points.

[18] This paper reports accuracy for the scorecard applied to the 2009 and 2005 validation samples, but it cannot test accuracy for later years or for other groups. Performance after October 2009 will resemble that in the 2009 EMNV with deterioration to the extent that the relationships between indicators and poverty status change over time.

then compute the required sample size. In this illustration,

$$n = 10{,}000 \cdot \left(\frac{1.64^2 \cdot 0.88^2 \cdot 0.330 \cdot (1 - 0.330)}{1.64^2 \cdot 0.88^2 \cdot 0.330 \cdot (1 - 0.330) + 0.02^2 \cdot (10{,}000 - 1)} \right) = 1{,}033.$$

7. Estimates of changes in 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, poverty could get better or worse, and scoring does not indicate what caused change. This point is often forgotten or confused, 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 participation 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 the impact of participation only if there is some way to know what would have happened in the absence of participation. 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, 2013, an organization samples three households who score 20, 30, and 40 and so have poverty likelihoods of 71.6, 59.3, and 21.3 percent (national line, Figure 4). Adjusting for the

known bias of –1.7 percentage points (Figure 9), the group's baseline estimated poverty rate is the households' average poverty likelihood of [(71.6 + 59.3 + 21.3) ÷ 3] – (–1.7) = 52.4 percent.

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

- Score a new, independent sample, measuring change across samples
- Score the same sample both at baseline and at follow-up

By way of illustration, suppose that a year later on Jan. 1, 2014, the organization samples three additional households who are in the same population as the three original households (or suppose that the organization scores the same three original households a second time) and finds that their scores are 25, 35, and 45 (poverty likelihoods of 67.7, 40.4, and 14.6 percent, national line, Figure 4). Adjusting for the known bias, the average poverty likelihood at follow-up is [(67.7 + 40.4 + 14.6) ÷ 3] – (–1.7) = 42.6 percent, an improvement of 52.4 – 42.6 = 9.8 percentage points.[19]

Thus, about one in ten participants in this hypothetical example crossed the poverty line in 2013.[20] Among those who started below the line, about one in five (9.8 ÷ 52.4 = 18.7 percent) on net ended up above the line.[21]

[19] Of course, such a huge reduction in poverty in one year is highly unlikely, but this is just an example to show how the scorecard can be used to estimate change.
[20] This is a net figure; some people start above the line and end below it, and vice versa.
[21] The scorecard does not reveal the reasons for this change.

7.3 Accuracy for estimated change in two independent samples

Given the the scorecard built from the construction/calibration sample from the 2009 EMNV, an estimate of the change in the poverty rate over time from two independent samples is the difference between a baseline estimate from the 2009 validation sample and a follow-up estimate from the full 2005 EMNV. This set-up mimics how the scorecard would be used in practice to estimate change. In particular, it is both *out-of-sample* (the baseline and follow-up estimates apply to data that is not used to construct the scorecard) and *out-of-time* (the follow-up data is from a different year than the data used to construct the scorecard). Of course, the test can only use data from the past, so while the test is the best-available guide to future accuracy, it is inevitably imperfect.

Figure 10 shows the average differences—across 1,000 bootstraps of $n = 16{,}384$—between the scorecard's estimated change in household-level poverty rates and the true change. For the example of the national poverty line with a baseline of 2009 and a follow-up of 2005, the true change in the poverty rate is –6.2 percentage points (Figure 1), and so the scorecard's estimate of –9.3 percentage points is off by 3.1 percentage points (Figure 10). Seen relative to the absolute value of the true change, the absolute error is about $3.1 \div 6.2 = 50$ percent.

Across the eight poverty lines in Figure 10,[22] the average absolute error is about 250 percent of the true change. This figure is drawn upwards by wide-of-the-mark estimates for 150% and 200% of the national line; the true change for these two lines is small, but the scorecard estimates a large change. These are also the highest two lines—along with the IFC's $8.00/day standard—so they are also the least relevant. Looking only at the lowest five lines, relative error is about 43 percent of the true change.

In terms of precision (as indicated by the α factor for a given poverty line in Figure 10), confidence intervals for scorecard-based estimates of change over time are about 15- to 50-percent wider than survey-based estimates of change.

Are scoring's estimates of change over time accurate enough? There is no objective standard for answering this question, and it depends on the context and the goal of the analysis. Perhaps the weakest benchmark is whether the estimates have the right sign. In the tests here, scoring matches reality in that it always estimates a decrease in poverty rates.

Beyond that low hurdle, another way to help judge whether estimates are likely to be useful is via the relative error (averaging 43 percent for the five lowest lines). For example, the four-year-out estimated change of, say, –9.3 percentage points (what scoring estimates for the national line between 2005–9) suggests that the true change is

[22] There are no estimates of change for the USAID "extreme" line because it is a relative line whose real value is not constant over time.

probably in the range of –9.3 x (1 + 0.43) = –13.3 to –9.3 x (1 – 0.43) = –5.3 percentage points.

Most formally, accuracy can be gauged via the standard statistical concepts of bias ("Estimated change minus true value" in Figure 10) and precision, which is reported in Figure 10 as 90-percent confidence intervals from 1,000 bootstraps with $n =$ 16,384 under "Precision of difference" and—more generally—as formulas for standard errors using the α factor. In all eight tests here for Nicaragua, scoring's estimated change is negative and statistically significant (assuming $n = 1{,}024$ and a 90-percent confidence interval.

There can be no general, once-and-for-all answer as to whether the scorecard is accurate enough to be useful for measuring change over time. The tests for Nicaragua here offer a mixture of hope and disappointment. Scoring correctly estimated a statistically significant decrease in poverty rates, but relative error is 43 percent for the five lowest poverty lines, and estimates for two of the three highest lines are very inaccurate.

The ultimate question is whether scoring is better than alternatives. While a central strength of the scorecard is that its accuracy for measuring change is known (so programs to make informed choices), this is not the case for most alternatives.

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:

$$\pm c = \pm z \cdot \sigma = \pm z \cdot \alpha \cdot \sqrt{\frac{2 \cdot \hat{p} \cdot (1 - \hat{p})}{n}} \cdot \sqrt{\frac{N - n}{N - 1}}.$$

z, c, $\hat{p}$ and N are defined as above, n is the sample size at both baseline and follow-up,[23] and α is the average (across a range of bootstrapped sample sizes) of the ratio of the observed confidence interval from a scorecard and the theoretical confidence interval under direct measurement.

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

$n = 2 \cdot N \cdot \left(\frac{z^2 \cdot \alpha^2 \cdot \tilde{p} \cdot (1 - \tilde{p})}{z^2 \cdot \alpha^2 \cdot \tilde{p} \cdot (1 - \tilde{p}) + c^2 \cdot (N - 1)} \right)$. If ϕ can be taken as one, then the formula becomes $n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \tilde{p} \cdot (1 - \tilde{p})$.

To illustrate the use of this formula to determine sample size for estimating changes in poverty rates across two independent samples, suppose the desired confidence level is 90 percent ($z = 1.64$), the desired confidence interval is ± 2 percentage points ($\pm c = \pm 0.02$), the poverty line is the national line, $\alpha = 1.15$ (the α for

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

the national line in Figure 10), $\hat{p} = 0.330$ (from Figure 1), and the population N is large enough relative to the expected sample size n that the finite population correction factor ϕ can be taken as one. Then the baseline sample size is

$n = 2 \cdot \left(\frac{1.15 \cdot 1.64}{0.02} \right)^2 \cdot 0.330 \cdot (1 - 0.330) \cdot 1 = 3{,}933$, and the follow-up sample size is also 3,933.

7.4 Accuracy for estimated change for one sample, scored twice

Analogous to previous derivations, the general formula relating the confidence interval $\pm c$ to the standard error σ when using a scorecard to estimate change for a single group of households, all of whom are scored at two points in time, is:[24]

$$\pm c = \pm z \cdot \sigma = \pm z \cdot \alpha \cdot \sqrt{\frac{\hat{p}_{12} \cdot (1 - \hat{p}_{12}) + \hat{p}_{21} \cdot (1 - \hat{p}_{21}) + 2 \cdot \hat{p}_{12} \cdot \hat{p}_{21}}{n}} \cdot \sqrt{\frac{N - n}{n - 1}},$$

where z, c, α, N, and n are defined as usual, $\hat{p}_{12}$ is the share of all sampled households that move from below the poverty line to above it, and $\hat{p}_{21}$ is the share of all sampled households that move from above the line to below it.

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

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

$$n = 2 \cdot \left(\frac{\alpha \cdot z}{c} \right)^2 \cdot \widetilde{p}_{*} \cdot \sqrt{\frac{N - n}{n - 1}}.$$

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

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

Given this, a sample-size formula for a group of households to whom the Nicaragua scorecard is applied twice (once after October 2009 and then again later) is

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

In Peru (the only source of an estimate, Schreiner, 2009), 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 ($\pm c = \pm 0.02$), the poverty line is the national line, the sample will first be scored in 2013 and then again in 2016 ($y = 3$), and the population N is so large relative to the expected

sample size n that the finite population correction factor ϕ can be taken as one. The pre-baseline poverty rate p_{2009} is taken as 33.0 percent (Figure 1), and α is assumed to be 1.30. Then the baseline sample size is

$n = 2 \cdot \left(\frac{1.30 \cdot 1.64}{0.02} \right)^2 \cdot \left\{ -0.02 + 0.016 \cdot 3 + 0.47 \cdot \left[0.330 \cdot (1 - 0.330) \right] \right\} \cdot 1 = 2{,}999$. The same group of 2,999 households is scored at follow-up as well.

8. Targeting

When an organization 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 is defined by whether expenditure is below a poverty line as directly measured by a survey. In contrast, targeting status is an organization'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 11 depicts these four possible targeting outcomes. Targeting accuracy varies by the cut-off score; a higher cut-off has better inclusion (but greater leakage), while a lower cut-off has better exclusion (but higher undercoverage).

Programs 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 12 shows the distribution of households by targeting outcome for Nicaragua. For an example cut-off of 30–34, outcomes for the national line in the 2009 validation sample are:

- Inclusion: 24.2 percent are below the line and correctly targeted
- Undercoverage: 8.8 percent are below the line and mistakenly not targeted
- Leakage: 8.6 percent are above the line and mistakenly targeted
- Exclusion: 58.4 percent are above the line and correctly not targeted

Increasing the cut-off to 35–39 improves inclusion and undercoverage but worsens leakage and exclusion:

- Inclusion: 27.7 percent are below the line and correctly targeted
- Undercoverage: 5.4 percent are below the line and mistakenly not targeted
- Leakage: 13.5 percent are above the line and mistakenly targeted
- Exclusion: 53.4 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 12 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. A program that uses targeting—with or without scoring—should thoughtfully consider how it values successful inclusion or 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 12 shows "Total Accuracy" for all cut-offs for the Nicaragua scorecard. For the national line in the 2009 validation sample, total net benefit is greatest (82.6) for a cut-off of 34 or less, with better than four in five households in Nicaragua 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).[25]

[25] Figure 12 also reports "BPAC", discussed in the next section.

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 achieve a desired poverty rate among targeted households. The third column of Figure 13 ("% targeted who are poor") shows, for the Nicaragua scorecard applied to the 2009 validation sample, the expected poverty rate among households who score at or below a given cut-off. For the example of the national line, targeting households who score 34 or less would target 32.8 percent of all households (second column) and produce a poverty rate among those targeted of 73.8 percent (third column).

Figure 13 also reports two other measures of targeting accuracy. The first is a version of coverage ("% of poor who are targeted"). For the example of the national line with the 2009 validation sample and a cut-off of 34 or less, 73.2 percent of all poor households are covered.

The final targeting measure in Figure 13 is the number of successfully targeted poor households for each non-poor household mistakenly targeted (right-most column). For the national line with the 2009 validation sample and a cut-off of 34 or less, covering 2.8 poor households means leaking to 1 non-poor household.

9. Context of poverty-assessment tools in Nicaragua

This section discusses six existing poverty-assessment tools for Nicaragua in terms of their goals, methods, definitions of poverty, data, indicators, cost, bias, and precision. The advantages of the scorecard are its:

- Use of data from the latest available nationally representative expenditure survey
- About equal targeting accuracy
- Simplicity and transparency, increasing its feasibility for local programs
- Reporting of bias and precision, including formulas for standard errors.

9.1 Gwatkin *et al.*

Gwatkin *et al.* (2007) construct a poverty-assessment tool for Nicaragua with an approach that they use in 56 countries with Demographic and Health Surveys (Rutstein and Johnson, 2004). They use Principal Components Analysis to make an asset index from simple, low-cost indicators available for the 11,328 households in Nicaragua's 2001 DHS. The PCA index is like the scorecard here except that, because the DHS does not collect data on expenditure, it is based on a different conception of poverty, its accuracy vis-à-vis an expenditure-based poverty is unknown, and it can only be assumed to be a proxy for long-term wealth/economic status.[26] Well-known examples of the PCA asset-

[26] Nevertheless, the indicators are similar and the "flat maximum" is important, so carefully built PCA indexes and expenditure-based poverty-assessment tools may pick up the same underlying construct (perhaps "permanent income", see Bollen, Glanville, and Stecklov, 2007), and they may rank households much the same. Comparisons of rankings by PCA indexes and expenditure-based poverty-assessment tools include Lindelow (2006), Wagstaff and Watanabe (2003), and Montgomery *et al.* (2000).

index approach include Stifel and Christiaensen (2007), Filmer and Pritchett (2001), and Sahn and Stifel (2000 and 2003).

The 25 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
  - Tenancy status
  - Type of floors
  - Type of walls
  - Type of roof
  - Electrical connection
  - Source of energy for lighting
  - Source of water for drinking
  - Source of water for washing
  - Type of water receptacle
  - Means of water disposal
  - Type of toilet arrangement
  - Whether the toilet arrangement is shared with other households
  - Type of sewer connection
  - Means of trash disposal
  - Type of cooking fuel
- Whether any household member works agricultural land
- Ownership of consumer durables:
  - Radio
  - Television
  - Refrigerator
  - Telephone
  - Bicycle
  - Motorcycle or scooter
  - Car or truck
- Number of people per sleeping room

Gwatkin *et al.* suggest three possible 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 deal with monitoring, so the uses of the PCA index are similar to those of the scorecard here.

Still, the Gwatkin *et al.* index is more difficult and costly than the scorecard. In particular, finding a household's score requires adding up 110 point values, half of which are negative and all of which have five decimal places.

Unlike the PCA index, the scorecard here 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.

In essence, Gwatkin *et al.*—like all PCA asset indexes—define poverty in terms of the indicators and points in the index itself. Thus, the index is not a proxy standing in for something else (such as expenditure) but rather a direct measure of a non-expenditure-based definition of poverty. There is nothing wrong—and a lot right—about defining poverty in this way, but it is not as common as an expenditure-based definition.

The asset-index approach defines people as *poor* if their assets (physical, human, financial, and social) fall below a threshold. Arguments for the asset-based view include

Carter and Barrett (2006), Schreiner and Sherraden (2006), Sahn and Stifel (2003), and Sherraden (1991). The main advantages of the asset-based view are that:

- Asset ownership is easier to measure accurately than expenditure
- Access to resources in the long term—and thus capacity to produce income and to consume—depends on the control of assets
- Assets get at capability more directly, the difference between, say, "Does your income permit adequate sanitation?" versus "Does your toilet have a septic tank?"

While the asset view and the income/consumption view are distinct, they are also tightly linked. After all, income/consumption are flows of resources received/consumed from the use of stocks of assets. Both views are low-dimensional simplifications—due to practical limits on definitions and measurement—of a higher-dimensional and more complete conception of the production of human well-being.

9.2 Filmer and Scott

Filmer and Scott (2012) test (on 11 countries, including Nicaragua) how well different types of asset indexes produce ranks that correlate with ranks from:

- Other asset indexes
- Expenditure as directly measured by a survey
- Expenditure as estimated by a regression (that is, a poverty-assessment tool)

They find that different approaches to constructing asset indexes generally lead to similar rankings vis-à-vis the benchmarks of directly measured expenditure and regression-estimated expenditure. This result is strongest for countries where regression works well for predicting expenditure and for less-poor countries with larger shares of non-food expenditure.

For Nicaragua, Filmer and Scott use data on the 4,191 households in the 2001 EMNV to select 32 indicators that—as in Gwatkin *et al.* and in this paper—are simple, low-cost, and verifiable:

- Characteristics of the residence:
  - Type of walls
  - Type of roof
  - Type of floor
  - Source of energy for lighting
  - Source of water
  - Type of toilet arrangement
  - Type of cooking fuel
  - Rooms per household member
- Ownership of consumer durables:
  - Radio
  - Radio/tape player
  - Stereo system
  - Black-and-white television
  - Color television
  - VCR
  - Telephone
  - Blender
  - Toaster
  - Rice cooker
  - Mill
  - Oven
  - Microwave oven
  - Personal computer
  - Iron
  - Sewing machine
  - Typewriter
  - Fan
  - Washing machine
  - Air conditioner
  - Bicycle
  - Motorcycle
  - Boat
  - Car

As Filmer and Scott's goal is to establish general properties of approaches to constructing asset indexes (rather than to provide asset indexes that local, pro-poor organizations can use), they do not report tools points or standard errors.

9.3 Zeller, Sharma, Henry, and Lapenu

Like this paper, Zeller *et al.* (2006) seek to develop a practical, low-cost, accurate way to assess the poverty of participants in local pro-poor programs. Their benchmark for comparison is not absolute poverty status according to an expenditure-based poverty line but rather relative poverty compared with other households in the area.

Like Gwatkin *et al.* and Filmer and Scott, Zeller *et al.* use PCA to combine indicators into an index. They test their approach with microfinance organizations in four countries, one of which is Nicaragua. They apply a special-purpose survey to a random sample of 200 participants of ACODEP and a comparison group of 300 non-participants in the program area. They then compare the indexes' distributions by terciles to see which group tends to be poorer.

Zeller *et al.* start the construction process with a long list of potential indicators and narrow it down based on their correlation with expenditure on clothing. In the PCA analysis, they select 16 indicators that are statistically significant:

- Characteristics of the residence:
  - Value
  - Type
  - Number of rooms per person
  - Type of toilet arrangement
  - Type of cooking fuel
- Education of the household head
- Ownership of consumer durables:
  - Number of televisions
  - Number of VCRs
  - Value of electrical devices
  - Value of vehicles
  - Value of assets per adult
- Food security:
  - Number of meals served in the past two days
  - Episodes of hunger in the past 30 days
  - Episodes of hunger in the past twelve months
  - Frequency of purchase of a staple food
  - Food stock in the house
- Per-capita expenditure on clothing

Like all asset indexes (and like the scorecard here), Zeller *et al.*'s index can rank households and can be applied in diverse contexts. Its small sample, however, is not nationally representative. Most important, the specific indicators in Nicaragua's index are difficult and costly to collect. For example, most households cannot easily estimate the value of their residence, let alone the value of their electrical devices, the per-adult value of their assets, or their per-capita spending on clothing. Furthermore, the food-security indicators relate to historical events and so are inherently non-verifiable. Even if all these indicators could be collected accurately, they would probably not rank

households much better—thanks to the "flat maximum"—than indexes with simpler, less-costly indicators.

Zeller *et al.* do not report the wording of their indicators nor their points, so a local pro-poor organization in Nicaragua could not pick up their index and use it even if they wanted to.

9.4 IFPRI

Maluccio (2009) describes the use of a poverty-assessment tool documented in International Food Policy Research Institute (IFPRI, 2002) for targeting conditional cash transfers in Nicaragua's *Red de Protección Social* (RPS, social safety net). Inspired by Mexico's *PROGRESA/Oportunidades*, the RPS aimed to alleviate short-term poverty via cash transfers conditional on participants' reducing their long-term poverty by developing and maintaining the long-term human capital of their children through school attendance and regular preventative health care.

The RSP's pilot used a poverty-assessment tool to target some of its beneficiaries. In 2000, a baseline expenditure survey similar to the 1998 EMNV was administered to all of about 6,000 eligible households in 42 rural localities in six municipalities. The localities themselves had been selected partly via a geographic targeting tool and had poverty rates (by the national line) of about 80 percent.

IFPRI constructed the tool using data on 1,570 households from this baseline survey and stepwise regression on the natural logarithm of per-capita household expenditure. There were about 40 indicators:

- Demographics:
  - Number of members (and its logarithm)
  - Number of members (and its square) multiplied by the average education of members older than 13
  - Number of members (and its logarithm and its square) multiplied by the age of the head (and its square)
  - Number of members (and its square) in households with a female head
  - Number of members less than four-years-old
  - Age of the head squared
- Characteristics of the residence:
  - Tenancy status
  - Type of walls
  - Type of roof
  - Number of rooms in the residence (and its logarithm and square)
  - Number of rooms used by the household (squared)
  - People per sleeping room (squared)
  - Type of toilet arrangement
  - Electrical connection
- Ownership of assets:
  - Fan
  - Pesticide sprayer
- Employment:
  - Presence of agricultural casual laborers
  - Presence of self-employed farmers
  - Number of non-agricultural wage and salaried workers
  - Number of non-agricultural casual laborers
  - Number of non-agricultural self-employed people
  - Number of non-paid family workers
  - Whether anyone in the household older than six does not work
- Agriculture:
  - Use of chemical fertilizers in the past twelve months
  - Whether livestock were raised in the past twelve months
  - Area of agricultural land owned

- Characteristics of the census block where the household lives:
  - Median age of household heads
  - Median age of heads multiplied by median household size
  - Median education of household heads
  - Median education of heads multiplied by median household size
  - Median education of heads multiplied by share of female heads
  - Standard deviation of ages of heads
  - Standard deviation of ages of heads multiplied by median household size
  - Share of households with tile (*embaldosado*) floors
  - Share of households with a radio/tape player
  - Average hours to walk to the nearest school (and its logarithm)
  - Share of households who kept cows in the past twelve months
  - Share of households receiving some type of public social transfer

This tool is meant for use by government agencies, not local organizations. It is lengthy and complex, and requires data not only on households but also on census blocks. Although the basic indicators themselves are few and straightforward, calculating a score requires software to combine basic indicators and to compute ratios, logarithms, medians, and standard deviations. Finally, the tool is tailored to a six, very poor, rural localities in the departments of Madríz and Matagalpa.

Maluccio reports that the RPS tool's targeting is effective, pointing to undercoverage of less than 8 percent and leakage of less than 11 percent.[27] As a benchmark for the improvements due to the RPS' tool, note that selecting 75 percent of households in these localities at random would give undercoverage of 20 percent and leakage of 5 percent. Comparison with the targeting accuracy of the scorecard here is not possible because the RPS focused on a specific, high-poverty area.

[27] These measures are defined as in this paper and assume an 80-percent poverty rate in the pilot localities.

9.5 IRIS Center

USAID commissioned IRIS Center (2011) to build a "Poverty Assessment Tool" (PAT) for use by USAID's microenterprise partners in Nicaragua when reporting the share of their participants who are "very poor". The PAT is constructed with three-fourths of the 6,852 households in the 2005 EMNV; the other one-fourth is reserved for out-of-sample validation. The PAT supports five poverty lines:

- Food line (poverty rate not reported)
- USAID "extreme" line, with a reported household-level poverty rate of 19.6 percent[28]
- Halfway between the USAID "extreme" line and the national line (poverty rate not reported)
- National line, with a reported household-level poverty rate of 39.2 percent
- 150% of the national line (poverty rate not reported)

In general, the PAT is like the scorecard here, except that it:

- Uses older data (2005 rather than 2009)
- Has a more indicators (18 rather than 10)
- Estimates expenditure quantiles (rather than poverty likelihoods)
- Does not support 2005 PPP poverty lines
- Presents a more complex system of points
- Does not report formulas for standard errors

After comparing several statistical approaches,[29] IRIS settles on quantile regression. Based on the values of indicators for a given household, the PAT estimates the expected value of the 46th percentile of the logarithm of per-capita household

[28] IRIS and this paper report the same household-level poverty rate for the national line, but they differ for the USAID "extreme" line (19.6 percent versus 17.7 percent). IRIS' line divides households (not people) below the national line into two equal groups, but this does not seem to fit the law (Schreiner, 2013; U.S. Congress, 2004).

[29] Thanks to the "flat max", all methods have almost the same "Total Accuracy".

expenditure. A household is classified as *poor* if this estimate is less than a given poverty line.

The PAT's 18 indicators are simple and verifiable:

- Household demographics:
  - — Household size (and its square)
  - — Age of the household head (and its square)
  - — Share of household members who are 5-years-old or younger
- Education:
  - — Education of the household head
  - — Share of household members with no education
  - — Share of household members with secondary education
- Characteristics of the residence:
  - — Urban/rural
  - — Region (Managua, Pacific, Central, Atlantic)
  - — Type of wall
  - — Type of roof
  - — Number of rooms
  - — Source of drinking water
  - — Type of toilet arrangement
  - — Source of energy for lighting
  - — Type of cooking fuel
  - — Means of garbage disposal
- Asset ownership:
  - — Number of small tools
  - — Cattle

IRIS reports accuracy in terms of:

- Bias and precision of estimated poverty rates at a point in time[30]
- Targeting (inclusion, undercoverage, leakage, and exclusion)
- The Balanced Poverty Accuracy Criterion, USAID's standard for certifying PATs

[30] IRIS (2005) calls bias the "Poverty Incidence Error" (PIE) and shows that—in their expenditure-estimation approach—it is equal to the absolute value of the difference between undercoverage and leakage.

IRIS Center (2005) proposed BPAC. It considers accuracy in terms of inclusion and in terms of the absolute difference between undercoverage and leakage (that is, bias). The formula is $\text{BPAC} = 100 \cdot \left(\frac{\text{Inclusion} - \mid \text{Undercoverage} - \text{Leakage} \mid}{\text{Inclusion} + \text{Undercoverage}} \right)$.

Because bias is the difference between undercoverage and leakage, and because the normalization term $\frac{100}{\text{Inclusion} + \text{Undercoverage}}$ is not useful except when comparing poverty-assessment tools applied to populations with different poverty rates, the formula can be simplified to $\text{BPAC} = \text{Inclusion} - \mid \text{Bias} \mid$. IRIS maximizes BPAC by choosing the cut-point for its quantile regression so as to make undercoverage the same as leakage (so bias is zero) when households are classified based on whether their estimated expenditure is below the USAID "extreme" poverty line.

Expressing BPAC as $\text{Inclusion} - \mid \text{Bias} \mid$ is useful because it helps to show why BPAC is not useful for comparing the PAT with the scorecard. Regardless of whether undercoverage differs from leakage and given the assumptions discussed earlier in this paper, the scorecard—like the PAT—produces unbiased estimates of poverty rates. While BPAC can be used to compare alternative poverty-assessment tools under the PAT's expenditure-estimation approach, it does not make sense to apply it to the scorecard. This is because, when estimating poverty rates, the scorecard does not use a cut-off to classify households as either 100-percent poor or 100-percent non-poor. Instead, households have a poverty likelihood somewhere in the range of 0 to 100

percent. If a user of a scorecard sets a targeting cut-off, then it matters only for targeting, and it does not affect the estimation of poverty rates at all.

In any case, both the PAT and the scorecard give unbiased estimates of poverty rates, so any distinction between their accuracy must relate to targeting or to the precision of their estimates of poverty rates.

An apples-to-apples comparison of targeting requires that both tools be applied to a population with the same poverty rate. This is straightforward for the national line in the 2005 EMNV, as both IRIS and Figure 1 here report a household-level poverty rate of 39.2 percent. IRIS does not report out-of-sample tests for this line, but an in-sample test has inclusion of 30.4 percent and exclusion of 52.0 percent. For comparison, applying the scorecard here out-of-sample and out-of-time to the full 2005 EMNV with a cut-off of 44 or less gives about the same inclusion (30.7 percent) but worse exclusion (47.1 percent). The scorecard's slightly worse performance can be chalked up to competing out-of-sample and out-of-time against IRIS' in-sample test. Indeed, the scorecard based on the 2005 EMNV in Schreiner and Woller (2010, p. 89)—while still applied out-of-sample—gives inclusion of 32.0 percent and exclusion of 50.2 percent (cut-off of 39 or less). For this line, the scorecard and the PAT have about the same targeting accuracy.

For the USAID "extreme" line, IRIS reports both in-sample and out-of-sample tests, but an apples-to-apples comparison is more complicated. IRIS sets its USAID

"extreme" line to divide *households* below the national line into two equal groups, leading to a household-level poverty rate of 19.6 percent. This paper, however, sets its USAID "extreme" line to divide *people* below the national line into two equal groups, and this leads to a household-level poverty rate of 17.7 percent. For comparability in the test here, the USAID "extreme" line in this paper is redefined to match that of IRIS.

In the PAT's out-of-sample test for the USAID "extreme" line, inclusion is 11.4 percent and exclusion is 73.5 percent. (In-sample, IRIS gets inclusion of 12.8 percent and exclusion of 73.7 percent.) For the scorecard here (out-of-sample and out-of-time), a cut-off of 24 or less gives inclusion of 14.0 percent and exclusion of 71.2 percent. Accounting for the out-of-time disadvantage faced by the scorecard here, the two tools again have about the same targeting accuracy.

In terms of the precision of estimated poverty rates, IRIS reports a 95-percent (z = 1.96) confidence interval of $\pm c = \pm(2.81 + 1.61) \div 2 = \pm 2.210$ percentage points for the difference between the PAT's estimates and true values in 1,000 bootstrapped out-of-sample tests (n = 5,135) for the USAID "extreme" line and its household-level poverty rate of 19.6 percent in the 2005 EMNV. With direct measurement, the 95-percent confidence interval is $\pm 1.96 \cdot \sqrt{\frac{0.196 \cdot (1 - 0.196}{5{,}135}} \cdot 1 = \pm 1.086$ percentage points. Thus, an estimate of the PAT's α factor for this is 2.210 ÷ 1.086 = 2.03. For the scorecard and this line, α is 0.66. Thus, the PAT's confidence intervals for estimated poverty rates are about three times wider.

To sum up the accuracy comparison for the PAT versus the scorecard:

- Both approaches give unbiased estimates of poverty rates
- Both approaches have about the same targeting accuracy
- The scorecard estimates poverty rates more precisely

IRIS reports targeting accuracy for the PAT, and the BPAC formula considers targeting accuracy. Yet IRIS says that the PAT should not be used for targeting.[31]

IRIS also doubts that the PAT can be useful for measuring change, noting that "it is unclear that the tools will be able to identify real changes in poverty over time due to their inherent measurement errors. Unless the changes in the poverty rate are exceptionally large and the tools exceptionally accurate, the changes identified are likely to be contained within the margin of error."[32]

That is, IRIS expects that estimates of change will often include zero in some confidence interval. In Nicaragua, the out-of-sample estimates of change between the 2005 and 2009 EMNV are—as noted above—statistically different from zero for $n =$ 1,024 and with 90-percent confidence for all eight poverty lines.

Targeting and estimating changes over time are possible uses that are supported for the scorecard. This paper reports targeting accuracy as well as margins of error (formula for standard errors) for measures of change over time so that users can decide for themselves whether accuracy is adequate for their purposes.

[31] `http://www.povertytools.org/faq/faq.html#11`, retrieved 19 February 2009.
[32] `http://www.povertytools.org/faq/faq2.html`, retrieved 7 December 2012.

9.6 Sobrado and Rocha

As part of the World Bank's *Nicaragua Poverty Assessment* (2008, Annex 4), Sobrado and Rocha use the 2005 EMNV and the 2005 Census to build poverty-assessment tools that feed into a "poverty map" (Elbers, Lanjouw, and Lanjouw, 2003; Hentschel *et al.*, 2000) that estimates poverty status for Nicaragua at the level of municipalities. This is the latest in a series of poverty maps for Nicaragua. According to Henninger and Snel (2002), the earlier maps were widely used and helped make planning and policy-making more transparent and thus more pro-poor.

Sobrado and Rocha build seven tools for the regions of Managua, urban and rural Pacific, urban and rural Central, and urban and rural Atlantic. They use stepwise ordinary least squares on the logarithm of per-capita expenditure, using only indicators found both in the 2005 EMNV and the 2005 Census.

They then apply the tools to households in the 2005 Census to estimate poverty rates by municipality for both the food and national lines. The municipal-level estimates from poverty mapping are more precise than direct estimates based on the EMNV. Finally, Sobrado and Rocha make "poverty maps" that quickly show—in a way that is clear to non-specialists—how poverty rates (and changes in poverty between 1998 and 2005) vary by municipality.

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

- Build poverty-assessment tools with survey data that is representative of a given population and then apply them to sub-groups that may not be representative of that population
- 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
- Report bias
- 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 (such as the poverty gap) that go beyond head-count poverty rates
- Requires data on fewer households for tool construction and calibration
- Includes community-level indicators, increasing accuracy and precision
- 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 social performance.[33] On a technical

[33] Another apparent difference is that the developers of poverty mapping (Elbers, Lanjouw, and Lanjouw, 2003; Demombynes *et al.*, 2004) say that it is too inaccurate to be used for targeting at the household level, while Schreiner (2008c) supports household-level 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).

level, Sobrado and Rocha estimate expenditure directly, whereas the scorecard here estimates poverty likelihoods.

Sobrado and Rocha use the following indicators in their seven tools:

- Demographics:
  - Number of household members ages:
    - 0 to 5
    - 6 to 15
    - 16 to 59
    - 60 or more
    - Of any age
  - Average age of household members
  - Ethnicity of the household head
- Emigration:
  - Whether the household head was born in a different municipality
  - Whether any household member has emigrated
  - Number of household members who have emigrated in the past five years
  - Share of male members who have emigrated
  - Years of education of emigrants
  - Destination of emigrants
- Education:
  - Share of household members 10-years-old or older who are literate
  - Whether the household head is literate
  - Whether the household head has a college degree
  - Average years of education for household members 16-years-old or older
  - Share of household members 15-years-old or younger who attend school
- Employment:
  - Average hours worked by household members 16-years-old or older
  - Occupation of the household head
  - Sector of work of the household head
- Characteristics of the residence:
  - Department
  - Type
  - Tenancy status
  - Length of residence
  - Type of floors
  - Type of walls
  - Type of roof
  - Type of electrical connection
  - Source of water

    - Type of toilet arrangement
    - Type of cooking fuel
    - Method of garbage disposal
    - Type of kitchen
- Ownership of durable assets:
    - Hi-fi stereo system
    - Radio/tape player
    - Small equipment
    - Medium and large equipment
    - Telephone, cable television, and internet
- Characteristics of the census segment (average):
    - Distance to travel to nearest health center:
        - Hours
        - Kilometers
    - Literacy rate for people 10-years-old or older
    - Birth rate in past five years
    - Households with a member who works in agriculture
    - Share of people 16-years-old or older who work
    - Share of household heads who are female
    - Source of drinking water
    - Ownership of durable assets:
        - Fan
        - Radio
        - Bicycle
        - Cellular telephone

The average regional tool uses about 19 of these 51 indicators and is based on data from about 1,000 households. The tools are built with stepwise regression, so they may be overfit. This matters, for example, when comparing the bias of Sobrado and Rocha's tools for all-Nicaragua poverty rates in 2005 (–0.9 percentage points for the food line, –2.1 percentage points for the national line) to those estimated out-of-sample and out-of-time here (+0.5 for the food line and +1.4 for the national line) because Sobrado and Rocha's test is in-sample, which—when coupled with overfitting—tends to overstate accuracy.

Although Sobrado and Rocha note that "the correct calculation of the standard error is key to any poverty map" (p. 194), they do not actually report standard errors, so the precision of their estimates cannot be compared with those in this paper.

10. Conclusion

This paper presents the scorecard. Pro-poor organizations in Nicaragua can use it to estimate the likelihood that a household has expenditure below a given poverty line, to estimate the poverty rate of a group of households at a point in time, and to estimate changes in the poverty rate of a group of households between two points in time. The scorecard can also be used for targeting.

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

The scorecard is constructed with data from Nicaragua's 2009 EMNV. It replaces an earlier one based on the 2005 EMNV (Schreiner and Woller, 2010). The old 2005 scorecard should be abandoned in favor of the new 2009 scorecard. Estimates from the two scorecards are compatible, so existing users can estimate changes with a baseline from the old scorecard and a follow-up from the new scorecard.

The new scorecard is constructed with half of the 2009 EMNV data, calibrated to nine poverty lines, and tested on the other half of the 2009 data. For estimates of changes in poverty rates over time, validation also uses the full 2005 EMNV.

Bias and precision are 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 are not the same as estimates of program impact. Targeting accuracy is also reported.

When the scorecard is applied to the 2009 validation sample, the absolute difference between estimates versus true poverty rates for groups of households at a point in time is 4.0 percentage points or less and averages—across the nine poverty lines—about 1.7 percentage points. Unbiased estimates may be had by subtracting this known bias from the original estimates. For $n = 16{,}384$ and 90-percent confidence, the precision of these differences is ± 0.6 percentage points or better.

For estimates of changes in poverty rates between 2005 and 2009, the average absolute differences across the five lowest poverty lines is 2.7 percentage points. The average relative error for these lines is about 43 percent. For all lines, the scorecard correctly estimated that poverty decreased from 2005 to 2009, and the estimates are all statistically significant with 90-percent confidence and $n = 1{,}024$.

If an organization wants to use the scorecard for targeting, then the results here provide useful information for selecting a cut-off that fits its 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 an organization feel so daunted by its complexity or its cost that it does 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 (most likely below a poverty line) to 100 (least likely below a poverty line). Scores are converted to poverty likelihoods via simple look-up tables, and targeting cut-offs are

likewise straightforward 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 Nicaragua to estimate expenditure-based poverty rates, track changes in poverty rates over time, and target services. The same approach can be applied to any country with similar data.

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Guidelines for the Interpretation of Scorecard Indicators

The following is translated from:

Instituto Nacional de Estadísticas y Censos. (2001) "Manual del Encuestador: Encuesta Nacional de Hogares sobre Medición de Nivel de Vida de 2001", Managua, `inide.gob.ni/pobreza/emnv/manenc.pdf`, retrieved 3 December 2009. (the *Manual*)

General guidelines for the enumerator

According to p. 1 of the *Manual*, "Study this *Manual* carefully. When interviewing, carry it with you to resolve issues and to clarify questions based on its instructions."

According to pp. 7–8 of the *Manual,* you should:

- Study these guidelines until you master them
- Follow the instructions in this *Manual* [including this one]
- Do the work yourself, by yourself, and in person
- Introduce the respondent to anyone from your organization who accompanies you to observe the interview, explaining that they are there in an official capacity
- Ask politely for the respondent's cooperation with the survey (after having presented your official identification from your organization), and record the answers in the proper places
- Conduct the interview in person with the household at its residence, carefully following the instructions in the questionnaire and in this *Manual*
- Review the questionnaire at the end of each interview to detect omissions and to correct any errors
- Visit the household again if any errors or omissions are found
- Conduct yourself in a manner consistent with the highest standards and in a way that reflects the importance of the work that you are doing"

According to p. 9 of the *Manual*, you should never:

- Allow someone else to do your work
- Change any information provided by the respondent
- Divulge any information provided by the respondent. Likewise, do not show the completed questionnaires to anyone except those with due authorization
- Forget that the information supplied by the respondent is confidential
- Take people with you on the interviews who are not supposed to be there
- Pressure the respondents to participate with false promises or incentives
- Destroy (or refuse to turn in) the completed surveys
- Drink alcohol or take other mind-altering drugs while on the job"

According to p. 10 of the *Manual*, a *interview* is "a friendly conversation between two people for the purpose of obtaining the information sought by the survey. Remember that an interview deals with information that is personal and confidential and should always be conducted in-person and directly with the respondent."

According to p. 43 of the *Manual*, "The preferred respondent is the head of the household (be it male or female), or the spouse of the head."

Guidelines for good interviewing

According to pp. 10–13 of the *Manual*, "There are several good practices that are helpful for successful interviewing.

Introducing yourself

"As the enumerator, you must always pay careful attention to the impression that you make with the respondent. Because the respondent does not know you, show empathy, sensitivity, and interest in your dealings with him/her.

"When you first meet the respondent, be friendly and introduce yourself, identify your organization, describe the purpose of the survey ['to learn more about how the organization's participants live'], and request the respondent's cooperation.

An effective introduction might go like this: 'Good morning. I am an enumerator with [organization], and we are surveying [all/a sample] of our participants to learn more about how they live. . . . I would like to ask you a few questions, and I hope that you will have the courtesy to help me.'

"It is unwise to begin by asking questions such as 'Are you very busy?', 'Could you spare me a few minutes?', or 'Would you be willing to answer a few questions?' These sorts of questions invite negative responses. Instead, begin positively.

Confidentiality of responses

"Before asking any questions, tell the respondent that his/her responses will be kept strictly confidential. . . . Also, explain that no identifying information will be published that could link the responses with the respondent.

Interview location

"Ideally, the respondent will choose a location for the interview that facilitates communication and that will help maintain the confidentiality of the responses.

Privacy

"To ensure privacy, do your best to avoid interviewing around people who are not members of the respondent's household. Their presence may cause the respondent to change his/her responses or to refuse to respond. If a third party is hanging around, explain to him/her that the interview is private and then politely ask him/her to leave.

Neutrality

"Accept the respondent's answers without judgement. Do not offer your own personal opinions or assessments. Avoid expressing criticism, approval, or disapproval, be it by facial expression, tone of voice, or body language. Do not share your opinions with the respondent, and do not suggest answers.

Managing the interview

"Be in control. As the enumerator, you are in charge of the interview, and you should guide and direct it. If a respondent rambles on without answering a question or gets side-tracked with digressions that do not pertain to the survey, then it is wise to refrain from interrupting. Nevertheless, use tact and try to bring the discussion back to the interview as soon as you can.

Do not assume that you know the answers

"Regardless of the socio-economic or other characteristics of the respondent, location, or residence, you should not assume that you know any answers to any questions without actually asking the respondent. Do not form preconceived notions.

"In the same way, do not suggest answers based on what appears to be the respondent's socio-economic/cultural class. Just read all the questions word-for-word as they are in the survey. If the questionnaire calls for it, ask probing questions.

Do not rush the interview

"Ask the questions in a way that helps the respondent to understand what the question wants to know. Once you have asked the question, stand back and give the respondent time to think. Otherwise, the he/she might give careless or inaccurate answers.

Dealing with reluctant respondents

"Be prepared for evasive answers. Sometimes, a respondent will be vague or imprecise, saying 'I don't know', or even refusing to answer altogether. When this happens, try to encourage him/her, to build up his/her confidence, and to help him/her feel more comfortable. Then continue with the next question. Explain that the survey is important to your organization and that it is being applied to [all/a sample] of its participants.

Dealing with refusals

"Some respondents will refuse, from the start, to participate in the survey. Others will answer some questions but then stop. When this happens, you should politely remind the respondent of the importance of the survey and your organization's desire to learn more about how its participants live.

Ending the interview

"When all questions have been asked (but before you say good-bye), review the questionnaire carefully, checking for omitted questions or incomplete answers. Once you are sure everything is complete, thank the respondent for his/her cooperation, and take your leave."

Detailed guidelines for specific scorecard indicators

1. How many household members are there?
    A. Eight or more
    B. Seven
    C. Six
    D. Five
    E. Four
    F. Three
    G. One or two

The *Manual* spreads its presentation of the elements of the definitions of *household* and *household member* over several pages. Here is a complete summary.

A *household* is a person or a group of people—who may or may not be blood relatives and who may not all be present in the residence on the day of the interview—who have lived (slept and ate) in the same residence for at least three of the past 12 months, eating together and generally sharing their resources and expenses.

In addition, the following count as *household members*:

- The household head, even if he/she has been absent from the residence for more than nine of the past 12 months
- Newborns less than three-months-old who are children of a household member
- Children, the elderly, the ill, and those who are temporarily absent on the day of the interview but who fulfill all the other criteria to be household members

The following do not count as *household members*:

- Domestic servants and their family members
- Lodgers and their family members
- People who happen to be present in the residence on the day of the interview but who do not fulfill all the other general criteria to be household members

The summary above is based on the following excerpts from the *Manual*.

According to p. 27 of the *Manual*, a *household* is "the person or the group of people—regardless of blood relationship—who normally live in the same residence, occupying all or part of it, and who share food."

According to p. 26 of the *Manual*, a *residence* "is any building consisting of a room or a group of rooms that is structurally separate and independent and that is designed to shelter one or more households."

According to p. 43 of the *Manual*, *household members* are "all people who make up the household, that is, who normally live together in the same residence and who eat from a common pot. This includes children who have yet to attain the age of majority, newborns, elderly people, ill people, or temporarily absent household members."

"More than one household may live in a given residence, such as when there are different groups of people who live in different parts of a residence and who prepare their meals separately. A household may have just one person, or it may have more than one person. Household members need not be blood relatives. For example, a household may consist of four friends who rent a house together and who share food.

A *permanent resident* "is someone who lives in a given residence that serves as his/her permanent domicile, that is, where he/she eats and sleeps.

"People who have been separated from their former marital partner [and who no longer live in the same residence] are not considered to be permanent residents, even if they share food with some member of the household being interviewed."

According to p. 44 of the *Manual*, *household members* "are all people who normally eat and sleep in the [residence] and who have been there for at least three of the 12 months preceding the interview.

"Do not count lodgers nor domestic servants (employees) and their family members.

"The head of the household—whether male or female—is always counted as a household member, even if he/she has not lived in the residence for at least three of the past 12 months. Likewise, newborns who are less than three-months-old are counted as household members, as long as they are the children of a household member."

According to p. 45 of the *Manual*, there are "three basic criteria for determining whether a person is a member of a household:

- Lives under the same roof (usual residence)
- Shares meals (common pot), and
- Shares resources and expenses in general

According to pp. 51–52 of the *Manual*, "the following count as household members:

- The head of the household (whether male or female), even if he/she has not lived in the residence for at least three of the past 12 months
- People who have usually lived in the residence for at least three of the past 12 months and who are present in the residence at the time of the interview (except for lodgers and domestic servants and their family members)
- Permanent residents who happen to be temporarily away on the day of the interview for reasons such as work, vacation, illness, classes, etc., as long as they have been absent for less than nine of the past 12 months
- Newborns less than three-months-old who are children of a household member

"The following do not count as household members:

- People who happen to be temporarily present in the residence on the day of the interview (but not for at least three of the past 12 months)
- Permanent residents who have been absent (for example, due to work, vacation, illness, classes, etc.) for more than nine months
- Lodgers (people who pay the household for room and board, or who pay only for lodging and eat somewhere else, even if they have a blood relationship with the household head)
- Domestic servants
- Children and other relatives of lodgers and domestic servants
- Deceased people

2. Are all household members ages 7 to 18 enrolled this school year in the formal educational system?
   A. No one 7 to 18
   B. No
   C. Yes

Please see the guidelines for the first indicator for the definition of *household member*.

According to p. 71 of the *Manual*, this indicator "seeks to determine whether household members enrolled for the current school year."

According to p. 47 of the *Manual*, age is counted as "that as of a given person's most recent birthday."

3. In their main line of work in the past seven days, how many household members were wage or salary workers?
   A. None
   B. One
   C. Two or more

Please see the guidelines for the first indicator for the definition of *household member*.

According to p. 78 of the *Manual*, a *wage or salary worker* is "someone who works for an employer, the state, or a private institution/business in exchange for a wage or salary."

According to p. 77 of the *Manual*, a *line of work* is "the career, post, job, or work activity in which a person spends his/her time."

According to p. 78 of the *Manual*, *work* is "those tasks that people do to produce goods or services to earn income, for their own consumption in the household, or as unpaid helpers (be it in a family business or some other business), regardless of the regularity of the work and regardless of their relationship with the means of production. By this definition, the following are not considered to be 'productive work' because they do not produce any income:

- Household chores
- Construction, improvement, or maintenance of one's own residence
- Voluntary community service (such as Red Cross, Civil Defense Corps, Parent/Teacher Association, etc.)

According to p. 82 of the *Manual*, the *main line of work* is "the job or occupation in which the household member works the most hours. If the person works the same number of hours in two or more lines of work, then the main one is that which earns the most income. If two or more lines of work are tied both in terms of hours and in terms of income, then the main one is the one that the respondent considers it to be."

4. How many rooms does the household have for its use (excluding kitchen, bathrooms, hallways, and garages)?
   A. One
   B. Two
   C. Three or more

According to p. 27 of the *Manual*, a *room* "is a space in a residence separated by permanent walls (regardless of material) that reach from the floor to the ceiling or roof. A room may have a particular use or function (such as a bedroom, living room, dining room, or study). This definition of *room* excludes spaces used exclusively for cooking, garages, hallways, and corridors that serve to connect a room with other rooms."

According to p. 33 of the *Manual*, this indicator "refers to the total number of rooms in the residence that are used by the household being interviewed. When asking the question, tell the respondent to exclude any rooms used exclusively for cooking as well as any garages, storage rooms, bathrooms, and hallways.

"Rooms that are shared by the household and a business—whether they are living rooms, dining rooms, kitchens, or bedrooms—should be counted.

"Two living spaces that are separated by a hanging cloth, curtains, movable folding screens, or by pieces of cardboard, plastic, or other non-permanent materials should be counted as a single room.

"If the residence has but a single room where household members sleep, eat, and cook, count it as one room, even if it is divided by a hanging cloth or other similar non-permanent materials."

"If the residence has only a single room, and if this room is occupied by two or more households, then count the interviewed household as having one room.

5. What is the main material of the floor of the residence?

A. Dirt, or other

B. Wood planks, mud bricks, or tiles and concrete

C. Cement bricks or tile (mosaic, ceramic, or glazed)

According to p. 31 of the *Manual*, the goal is "to determine the material used in the largest share of the floors of the residence.

"If the floors are constructed of more than one type of material, ask which material is the main one. If the response does not correspond with any of the listed options, then mark 'Other'.

"The *main material of the floor* refers to the material covering the floor of the residence. Because some residences have floors of different materials in different rooms, the response should not be based solely on the flooring material of the room in which the interview takes place."

6. What fuel does the household usually use for cooking?
    A. Non-purchased firewood
    B. Purchased firewood, charcoal, or does not cook
    C. Butane or propane gas, kerosene, electricity, or other

According to p. 39 in the *Manual*, "this refers to the main type of fuel that the household uses for cooking. If the household uses more than one type of fuel, then record the one that is used in the greatest quantity."

7. Does the household have an iron?

A. No

B. Yes

According to p. 124 of the *Manual*, the section of the EMNV titled "Household appliances" is used to collect data on spending for "electronic household appliances such as stoves, refrigerators, washing machines, irons, vacuum cleaners, radios, etc." This suggests that this indicator concerns the possession of an electric iron, not an iron that are heated by burning wood or charcoal.

8. Does the household have a blender?
    A. No
    B. Yes

The *Manual* does not have any additional information about this indicator.

9. How many cellular telephones does the household have?

A. None
B. One
C. Two or more

According to p. 40 of the *Manual*, "Include cellular telephones that are lent to a household member by an employer for business use."

10. Does the household have a bicycle, boat, horse, donkey, mule, motorcycle, or automobile?
    A. No
    B. Yes

The *Manual* does not have any additional information about this indicator.

Figure 1 (National lines): Sample sizes, poverty lines, and poverty rates for all of Nicaragua by survey year, sub-sample, poverty line, and household-level/person-level

Year	Line or Rate	HHs or People	n	Poverty lines and poverty rates (%) National Food	100%	150%	200%
All of Nicaragua							
2009	Line	People		10.97	19.99	29.98	39.98
	Rate	HHs	6,515	12.4	39.2	60.5	74.6
	Rate	People		17.3	48.4	69.8	81.8
2005	Line	People		19.15	32.53	48.80	65.06
	Rate	HHs	6,852	9.9	33.0	58.4	73.5
	Rate	People		14.6	42.5	67.8	80.9
Construction and calibration:							
(Selecting indicators and points, and associating scores with poverty likelihoods)							
2009	Rate	HHs	3,250	9.9	33.0	58.2	73.5
Validation:							
(Measuring accuracy)							
2009	Rate	HHs	3,265	9.9	33.0	58.6	73.5
2005	Rate	HHs	6,852	9.9	33.0	58.4	73.5

Source: 2005 and 2009 Encuesta Nacional de Hogares sobre la medición de Nivel de Vida

Poverty lines are NIO/day/person in ave. prices in all of Nicaragua in July to Oct. 2005 and Sept. to Oct. 2009.

Figure 1 (International 2005 and 2011 PPP lines): Sample sizes, poverty lines, and poverty rates for all of Nicaragua by survey year, sub-sample, poverty line, and household-level/person-level

	Line or	HHs or		Poverty lines and poverty rates (%)							
				Intl. 2005 PPP						Intl. 2011 PPP	
Year	**Rate**	**People**	n	**$1.25**	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
All of Nicaragua											
2009	Line	People		9.49	15.18	18.97	30.36	37.95	40.47	10.58	17.25
	Rate	HHs	6,515	8.3	25.1	36.3	61.2	71.7	75.1	11.3	31.3
	Rate	People		11.8	32.8	45.2	70.4	79.7	82.2	15.9	39.8
2005	Line	People		13.94	22.30	27.88	44.60	55.75	59.45	15.54	25.35
	Rate	HHs	6,852	3.3	15.2	25.1	53.4	66.4	70.0	5.0	20.7
	Rate	People		5.6	21.6	33.5	63.0	75.0	77.9	8.0	28.5
Construction and calibration:											
(Selecting indicators and points, and associating scores with poverty likelihoods)											
2009	Rate	HHs	3,250	3.5	14.9	25.1	53.2	66.3	70.1	5.4	20.2
Validation:											
(Measuring accuracy)											
2009	Rate	HHs	3,265	3.2	15.4	25.1	53.5	66.4	69.8	4.5	21.2
2005	Rate	HHs	6,852	3.3	15.2	25.1	53.4	66.4	70.0	5.0	20.7

Source: 2005 and 2009 Encuesta Nacional de Hogares sobre la medición de Nivel de Vida

Poverty lines are NIO per day per person in ave. prices in all of Nicaragua in July to Oct. 2005 and Sept. to Oct. 2009.

Figure 1 (Relative and percentile-based lines): Sample sizes, poverty lines, and poverty rates for all of Nicaragua by survey year, sub-sample, poverty line, and household-level/person-level

Year	Line or Rate	HHs or People	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
All of Nicaragua									
2009	Line	People		12.14	10.95	17.20	21.15	25.84	41.95
	Rate	HHs	6,515	18.3	14.8	32.0	41.3	51.0	72.5
	Rate	People		24.1	20.0	40.0	50.0	60.0	80.0
2005	Line	People		21.74	21.18	31.17	36.75	44.01	66.97
	Rate	HHs	6,852	15.0	14.1	31.3	40.6	50.6	72.6
	Rate	People		21.2	20.0	40.0	50.0	60.0	80.0
Construction and calibration:									
(Selecting indicators and points, and associating scores with poverty likelihoods)									
2009	Rate	HHs	3,250	14.1	13.6	31.5	40.4	50.2	72.6
Validation:									
(Measuring accuracy)									
2009	Rate	HHs	3,265	15.9	14.6	31.0	40.9	50.9	72.5
2005	Rate	HHs	6,852	15.0	14.1	31.3	40.6	50.6	72.6

Source: 2005 and 2009 Encuesta Nacional de Hogares sobre la medición de Nivel de Vida

Poverty lines are NIO per day per person in ave. prices in all of Nicaragua in July to Oct. 2005 and Sept. to Oct. 2009.

Figure 2 (Nicaragua, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.48	20.91	31.37	41.82
		Rate (HHs)	3,455	4.4	23.3	46.0	63.3
		Rate (people)		6.7	30.9	55.3	71.6
Rural	2005	Line		10.33	18.82	28.23	37.64
		Rate (HHs)	3,397	23.5	61.6	81.0	90.4
		Rate (people)		30.6	70.4	88.2	94.7
All	2005	Line		10.97	19.99	29.98	39.98
		Rate (HHs)	6,852	12.4	39.2	60.5	74.6
		Rate (people)		17.3	48.4	69.8	81.8
Urban	2009	Line		19.66	33.40	50.09	66.79
		Rate (HHs)	4,794	3.4	19.8	44.6	61.7
		Rate (people)		5.6	26.8	54.0	70.4
Rural	2009	Line		18.48	31.39	47.08	62.77
		Rate (HHs)	1,721	19.8	53.2	79.5	91.7
		Rate (people)		26.6	63.3	86.1	94.8
All	2009	Line		19.15	32.53	48.80	65.06
		Rate (HHs)	6,515	9.9	33.0	58.4	73.5
		Rate (people)		14.6	42.5	67.8	80.9

Source and definitions: See Table 1 and text.

Figure 2 (Nicaragua, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	3,455	9.93	15.88	19.85	31.76	39.70	42.34	11.06	18.05
		Rate (HHs)		2.5	11.9	20.9	46.8	59.5	64.0	3.9	16.4
		Rate (people)		4.0	17.0	28.0	56.0	68.7	72.2	5.8	22.6
Rural	2005	Line	3,397	8.93	14.29	17.86	28.58	35.73	38.10	9.96	16.25
		Rate (HHs)		16.4	43.7	58.0	81.4	88.8	90.6	21.9	52.1
		Rate (people)		21.7	53.0	67.0	88.6	93.7	94.9	28.7	61.5
All	2005	Line	6,852	9.49	15.18	18.97	30.36	37.95	40.47	10.58	17.25
		Rate (HHs)		8.3	25.1	36.3	61.2	71.7	75.1	11.3	31.3
		Rate (people)		11.8	32.8	45.2	70.4	79.7	82.2	15.9	39.8
Urban	2009	Line	4,794	14.31	22.89	28.62	45.79	57.23	61.03	15.95	26.02
		Rate (HHs)		0.9	7.0	13.2	38.7	53.0	57.3	1.6	10.2
		Rate (people)		1.5	10.7	18.4	47.9	62.4	66.3	2.8	14.9
Rural	2009	Line	1,721	13.45	21.52	26.90	43.03	53.79	57.36	14.99	24.46
		Rate (HHs)		7.2	27.7	43.3	75.8	86.8	89.3	10.2	36.7
		Rate (people)		11.0	36.1	53.4	82.9	91.6	93.1	14.8	46.5
All	2009	Line	6,515	13.94	22.30	27.88	44.60	55.75	59.45	15.54	25.35
		Rate (HHs)		3.3	15.2	25.1	53.4	66.4	70.0	5.0	20.7
		Rate (people)		5.6	21.6	33.5	63.0	75.0	77.9	8.0	28.5

Source and definitions: See Table 1 and text.

Figure 2 (Nicaragua, relative- and percentile-based linesrelative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	3,455	12.70	11.46	18.00	22.13	27.04	43.89
		Rate (HHs)		5.0	3.6	13.2	21.5	31.7	58.3
		Rate (people)		7.3	5.4	18.4	28.2	39.7	67.3
Rural	2005	Line	3,397	11.43	10.31	16.20	19.91	24.33	39.50
		Rate (HHs)		36.9	30.6	58.4	69.1	78.2	92.4
		Rate (people)		45.4	38.5	67.4	77.5	85.7	96.1
All	2005	Line	6,852	12.14	10.95	17.20	21.15	25.84	41.95
		Rate (HHs)		18.3	14.8	32.0	41.3	51.0	72.5
		Rate (people)		24.1	20.0	40.0	50.0	60.0	80.0
Urban	2009	Line	4,794	22.32	21.74	31.99	37.72	45.18	68.74
		Rate (HHs)		5.0	4.4	15.5	23.2	33.3	59.4
		Rate (people)		7.8	6.8	21.0	30.6	41.8	68.3
Rural	2009	Line	1,721	20.98	20.43	30.07	35.45	42.47	64.61
		Rate (HHs)		30.3	29.0	55.5	67.3	77.1	92.7
		Rate (people)		38.9	37.6	65.1	75.7	84.1	95.6
All	2009	Line	6,515	21.74	21.18	31.17	36.75	44.01	66.97
		Rate (HHs)		15.0	14.1	31.3	40.6	50.6	72.6
		Rate (people)		21.2	20.0	40.0	50.0	60.0	80.0

Source and definitions: See Table 1 and text.

Figure 2 (Nueva Segovia, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.40	18.94	28.41	37.88
		Rate (HHs)	186	18.6	43.3	62.8	80.1
		Rate (people)		21.4	49.7	69.1	84.9
Rural	2005	Line		9.90	18.03	27.04	36.05
		Rate (HHs)	182	35.2	79.9	91.6	94.7
		Rate (people)		42.8	85.8	95.1	97.1
All	2005	Line		10.10	18.41	27.61	36.81
		Rate (HHs)	368	27.4	62.7	78.1	87.8
		Rate (people)		33.9	70.9	84.3	92.0
Urban	2009	Line		18.64	31.66	47.49	63.32
		Rate (HHs)	37	6.3	22.8	49.8	67.6
		Rate (people)		7.0	27.7	56.5	74.5
Rural	2009	Line		18.02	30.61	45.91	61.22
		Rate (HHs)	47	20.9	54.3	89.4	100.0
		Rate (people)		27.6	63.1	94.8	100.0
All	2009	Line		18.28	31.05	46.58	62.10
		Rate (HHs)	84	13.7	38.8	69.9	84.0
		Rate (people)		18.9	48.2	78.7	89.3

Source and definitions: See Table 1 and text.

Figure 2 (Nueva Segovia, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	186	8.99	14.38	17.98	28.77	35.96	38.35	10.02	16.35
		Rate (HHs)		13.2	29.7	41.3	63.9	77.3	82.6	17.8	37.4
		Rate (people)		15.3	34.3	47.9	69.6	81.7	86.9	20.3	42.5
Rural	2005	Line	182	8.56	13.69	17.11	27.38	34.23	36.50	9.54	15.56
		Rate (HHs)		21.1	61.3	77.0	92.6	94.5	94.7	33.4	70.0
		Rate (people)		26.2	68.9	83.4	95.9	97.0	97.1	41.0	76.7
All	2005	Line	368	8.74	13.98	17.47	27.96	34.95	37.26	9.74	15.89
		Rate (HHs)		17.4	46.5	60.2	79.1	86.4	89.0	26.1	54.6
		Rate (people)		21.7	54.5	68.7	85.0	90.7	92.9	32.4	62.5
Urban	2009	Line	37	13.56	21.70	27.13	43.41	54.26	57.86	15.12	24.67
		Rate (HHs)		1.6	13.9	17.1	43.1	56.1	65.5	6.3	15.5
		Rate (people)		2.1	18.9	21.8	48.4	65.5	72.8	7.0	20.1
Rural	2009	Line	47	13.11	20.98	26.23	41.97	52.46	55.94	14.62	23.85
		Rate (HHs)		5.1	29.4	39.1	87.2	95.3	100.0	12.2	31.2
		Rate (people)		11.1	37.0	48.1	93.5	98.4	100.0	19.1	39.9
All	2009	Line	84	13.30	21.29	26.61	42.57	53.22	56.75	14.83	24.20
		Rate (HHs)		3.4	21.7	28.3	65.5	76.0	83.0	9.3	23.5
		Rate (people)		7.3	29.4	37.0	74.5	84.5	88.6	14.0	31.6

Source and definitions: See Table 1 and text.

Figure 2 (Nueva Segovia, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line		11.50	10.38	16.30	20.04	24.49	39.76
		Rate (HHs)	186	26.8	19.6	41.1	52.4	60.6	86.1
		Rate (people)		30.6	22.6	47.8	60.3	67.1	89.6
Rural	2005	Line		10.95	9.88	15.52	19.07	23.31	37.84
		Rate (HHs)	182	59.5	48.5	81.8	85.8	92.6	96.9
		Rate (people)		67.1	57.1	87.2	90.2	95.9	98.7
All	2005	Line		11.18	10.09	15.84	19.47	23.80	38.63
		Rate (HHs)	368	44.1	34.9	62.7	70.1	77.6	91.8
		Rate (people)		52.0	42.8	70.9	77.8	84.0	95.0
Urban	2009	Line		21.16	20.61	30.33	35.76	42.83	65.17
		Rate (HHs)	37	13.9	10.3	22.8	29.6	43.1	67.6
		Rate (people)		18.9	13.3	27.7	34.8	48.4	74.5
Rural	2009	Line		20.46	19.93	29.33	34.58	41.41	63.01
		Rate (HHs)	47	29.4	29.4	66.8	81.5	89.4	100.0
		Rate (people)		37.0	37.0	75.7	88.6	94.8	100.0
All	2009	Line		20.75	20.22	29.75	35.07	42.01	63.92
		Rate (HHs)	84	21.7	20.0	45.1	55.9	66.6	84.0
		Rate (people)		29.4	27.1	55.5	65.9	75.2	89.3

Source and definitions: See Table 1 and text.

Figure 2 (Jinotega, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.22	18.62	27.94	37.25
		Rate (HHs)	100	9.6	35.9	51.8	73.3
		Rate (people)		13.4	44.8	61.6	79.3
Rural	2005	Line		9.77	17.79	26.69	35.58
		Rate (HHs)	291	26.5	69.2	84.9	92.0
		Rate (people)		35.7	76.3	90.7	94.9
All	2005	Line		9.87	17.98	26.96	35.95
		Rate (HHs)	391	22.2	60.8	76.6	87.3
		Rate (people)		30.8	69.3	84.2	91.4
Urban	2009	Line		18.99	32.26	48.39	64.52
		Rate (HHs)	17	4.2	50.5	70.4	77.8
		Rate (people)		4.9	60.1	82.6	87.8
Rural	2009	Line		17.89	30.39	45.59	60.79
		Rate (HHs)	86	33.7	68.4	90.3	94.3
		Rate (people)		36.4	74.9	94.2	96.5
All	2009	Line		18.01	30.59	45.89	61.18
		Rate (HHs)	103	29.6	66.0	87.6	92.0
		Rate (people)		33.1	73.3	93.0	95.5

Source and definitions: See Table 1 and text.

Figure 2 (Jinotega, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	100	8.84	14.14	17.68	28.29	35.36	37.71	9.85	16.08
		Rate (HHs)		5.0	22.1	33.8	53.2	61.9	73.3	7.6	29.4
		Rate (people)		8.1	30.0	42.9	62.7	73.9	79.3	11.5	37.4
Rural	2005	Line	291	8.44	13.51	16.89	27.02	33.78	36.02	9.41	15.36
		Rate (HHs)		19.6	48.9	64.0	85.9	90.7	92.0	24.9	59.2
		Rate (people)		26.8	58.9	71.3	91.4	94.4	94.9	33.4	66.9
All	2005	Line	391	8.53	13.65	17.07	27.30	34.13	36.39	9.51	15.52
		Rate (HHs)		15.9	42.2	56.4	77.7	83.5	87.3	20.5	51.7
		Rate (people)		22.6	52.5	65.0	85.0	89.8	91.4	28.6	60.3
Urban	2009	Line	17	13.82	22.12	27.64	44.23	55.29	58.96	15.41	25.14
		Rate (HHs)		4.2	19.9	31.5	63.0	70.4	77.8	4.2	31.5
		Rate (people)		4.9	25.7	40.3	73.9	82.6	87.8	4.9	40.3
Rural	2009	Line	86	13.02	20.84	26.04	41.67	52.09	55.54	14.52	23.68
		Rate (HHs)		9.0	47.3	61.7	85.8	91.4	93.1	11.4	56.2
		Rate (people)		11.8	51.5	67.8	90.1	94.8	96.1	14.0	62.9
All	2009	Line	103	13.11	20.97	26.21	41.94	52.43	55.91	14.61	23.84
		Rate (HHs)		8.3	43.6	57.5	82.7	88.5	91.0	10.4	52.8
		Rate (people)		11.1	48.8	64.8	88.4	93.5	95.2	13.0	60.5

Source and definitions: See Table 1 and text.

Figure 2 (Jinotega, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	100	11.31	10.21	16.03	19.71	24.08	39.09
		Rate (HHs)		14.5	12.3	34.9	39.0	48.8	83.4
		Rate (people)		21.2	18.5	43.8	47.5	57.0	89.2
Rural	2005	Line	291	10.80	9.75	15.31	18.82	23.00	37.34
		Rate (HHs)		48.9	42.9	73.4	82.8	87.4	96.2
		Rate (people)		58.9	54.0	80.3	89.0	92.2	97.8
All	2005	Line	391	10.92	9.85	15.47	19.02	23.24	37.73
		Rate (HHs)		40.2	35.2	63.7	71.8	77.7	92.9
		Rate (people)		50.5	46.1	72.2	79.8	84.4	95.9
Urban	2009	Line	17	21.56	21.00	30.91	36.44	43.65	66.41
		Rate (HHs)		19.9	12.5	50.5	58.8	63.0	77.8
		Rate (people)		25.7	11.8	60.1	69.0	73.9	87.8
Rural	2009	Line	86	20.31	19.79	29.12	34.33	41.12	62.56
		Rate (HHs)		55.1	53.8	76.2	81.2	90.3	95.4
		Rate (people)		61.9	60.6	80.8	86.1	94.2	97.3
All	2009	Line	103	20.45	19.92	29.31	34.56	41.39	62.97
		Rate (HHs)		50.3	48.2	72.7	78.2	86.6	93.0
		Rate (people)		58.1	55.4	78.6	84.2	92.0	96.3

Source and definitions: See Table 1 and text.

Figure 2 (Madríz, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.69	19.47	29.20	38.93
		Rate (HHs)	138	15.3	40.2	61.4	70.7
		Rate (people)		21.9	48.0	68.6	79.4
Rural	2005	Line		9.89	18.02	27.04	36.05
		Rate (HHs)	226	39.9	74.5	88.6	97.3
		Rate (people)		47.8	82.0	92.4	98.6
All	2005	Line		10.14	18.48	27.71	36.95
		Rate (HHs)	364	32.4	64.1	80.3	89.2
		Rate (people)		39.7	71.4	85.0	92.6
Urban	2009	Line		18.99	32.26	48.39	64.52
		Rate (HHs)	15	9.8	22.9	45.8	45.8
		Rate (people)		12.3	29.0	56.0	56.0
Rural	2009	Line		18.22	30.94	46.41	61.88
		Rate (HHs)	35	17.0	56.7	83.0	100.0
		Rate (people)		26.3	67.7	86.3	100.0
All	2009	Line		18.40	31.25	46.88	62.51
		Rate (HHs)	50	15.2	48.4	73.8	86.6
		Rate (people)		22.9	58.6	79.1	89.6

Source and definitions: See Table 1 and text.

Figure 2 (Madríz, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line		9.24	14.78	18.48	29.57	36.96	39.41	10.30	16.81
		Rate (HHs)	138	8.5	27.8	36.4	61.4	69.4	70.7	15.3	35.3
		Rate (people)		14.5	36.1	43.2	68.6	76.9	79.4	21.9	42.2
Rural	2005	Line		8.56	13.69	17.11	27.38	34.22	36.49	9.54	15.56
		Rate (HHs)	226	31.1	60.3	72.6	88.8	96.4	97.3	37.6	66.8
		Rate (people)		39.7	69.5	80.8	92.5	98.2	98.6	45.5	75.2
All	2005	Line		8.77	14.03	17.54	28.06	35.08	37.41	9.78	15.95
		Rate (HHs)	364	24.2	50.3	61.5	80.4	88.2	89.2	30.8	57.2
		Rate (people)		31.8	59.0	69.1	85.1	91.5	92.6	38.2	64.9
Urban	2009	Line		13.82	22.12	27.64	44.23	55.29	58.96	15.41	25.14
		Rate (HHs)	15	0.0	9.8	18.0	45.8	45.8	45.8	4.9	18.0
		Rate (people)		0.0	12.3	20.9	56.0	56.0	56.0	6.1	20.9
Rural	2009	Line		13.26	21.21	26.51	42.42	53.02	56.54	14.78	24.11
		Rate (HHs)	35	8.3	28.4	48.2	80.0	94.2	97.1	11.3	45.3
		Rate (people)		13.1	38.7	60.5	83.9	93.6	95.3	18.5	57.0
All	2009	Line		13.39	21.42	26.78	42.85	53.56	57.12	14.93	24.35
		Rate (HHs)	50	6.3	23.8	40.8	71.6	82.3	84.4	9.7	38.5
		Rate (people)		10.0	32.4	51.1	77.3	84.7	86.0	15.6	48.4

Source and definitions: See Table 1 and text.

Figure 2 (Madríz, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line		11.82	10.67	16.76	20.60	25.17	40.86
		Rate (HHs)	138	22.8	19.4	35.6	44.3	54.1	74.8
		Rate (people)		29.4	26.6	42.5	51.3	61.4	83.2
Rural	2005	Line		10.94	9.88	15.51	19.07	23.31	37.83
		Rate (HHs)	226	58.1	51.0	78.0	85.4	89.8	98.6
		Rate (people)		67.3	60.7	85.0	90.2	93.4	99.2
All	2005	Line		11.22	10.12	15.90	19.55	23.89	38.78
		Rate (HHs)	364	47.3	41.4	65.0	72.9	78.9	91.3
		Rate (people)		55.4	50.0	71.7	78.1	83.4	94.2
Urban	2009	Line		21.56	21.00	30.91	36.44	43.65	66.41
		Rate (HHs)	15	9.8	9.8	22.9	32.7	45.8	53.2
		Rate (people)		12.3	12.3	29.0	40.3	56.0	62.3
Rural	2009	Line		20.68	20.14	29.64	34.95	41.86	63.69
		Rate (HHs)	35	36.4	35.9	57.3	68.2	83.0	100.0
		Rate (people)		48.7	48.0	68.1	74.6	86.3	100.0
All	2009	Line		20.89	20.35	29.94	35.30	42.28	64.33
		Rate (HHs)	50	29.8	29.4	48.8	59.4	73.8	88.4
		Rate (people)		40.1	39.5	58.8	66.4	79.1	91.0

Source and definitions: See Table 1 and text.

Figure 2 (Estelí, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.73	19.55	29.32	39.10
		Rate (HHs)	246	6.3	27.6	48.8	62.8
		Rate (people)		8.1	35.4	58.6	71.2
Rural	2005	Line		10.04	18.30	27.45	36.60
		Rate (HHs)	149	27.3	66.8	83.2	91.6
		Rate (people)		35.1	73.9	87.6	94.3
All	2005	Line		10.45	19.04	28.55	38.07
		Rate (HHs)	395	14.3	42.6	62.0	73.8
		Rate (people)		19.2	51.2	70.5	80.7
Urban	2009	Line		19.46	33.05	49.57	66.10
		Rate (HHs)	51	0.0	8.7	29.6	49.8
		Rate (people)		0.0	13.0	41.7	62.8
Rural	2009	Line		18.13	30.80	46.20	61.60
		Rate (HHs)	48	17.9	58.0	85.4	97.7
		Rate (people)		22.0	69.8	90.5	99.5
All	2009	Line		18.72	31.80	47.70	63.59
		Rate (HHs)	99	9.3	34.2	58.4	74.6
		Rate (people)		12.3	44.6	68.8	83.3

Source and definitions: See Table 1 and text.

Figure 2 (Estelí, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	246	9.28	14.85	18.56	29.69	37.12	39.58	10.34	16.88
		Rate (HHs)		3.9	13.5	25.6	49.5	60.8	62.8	6.1	18.1
		Rate (people)		5.8	17.8	33.5	59.3	69.7	71.2	8.0	23.0
Rural	2005	Line	149	8.69	13.90	17.37	27.79	34.74	37.05	9.68	15.80
		Rate (HHs)		13.9	49.2	62.6	83.2	91.4	92.6	24.7	56.5
		Rate (people)		17.7	57.6	68.9	87.6	93.9	95.3	32.8	64.5
All	2005	Line	395	9.04	14.46	18.07	28.91	36.14	38.54	10.07	16.43
		Rate (HHs)		7.7	27.2	39.8	62.4	72.5	74.2	13.3	32.8
		Rate (people)		10.7	34.2	48.1	70.9	79.6	81.1	18.2	40.0
Urban	2009	Line	51	14.16	22.66	28.32	45.31	56.64	60.40	15.78	25.75
		Rate (HHs)		0.0	1.1	2.2	19.1	39.2	42.1	0.0	1.1
		Rate (people)		0.0	1.3	2.6	30.0	52.2	54.6	0.0	1.3
Rural	2009	Line	48	13.20	21.11	26.39	42.23	52.79	56.29	14.71	24.00
		Rate (HHs)		6.1	25.7	41.0	83.1	93.5	93.5	6.1	37.1
		Rate (people)		8.1	34.1	53.9	89.5	96.2	96.2	8.1	49.4
All	2009	Line	99	13.62	21.80	27.25	43.59	54.49	58.11	15.19	24.78
		Rate (HHs)		3.1	13.8	22.2	52.2	67.2	68.6	3.1	19.7
		Rate (people)		4.5	19.5	31.1	63.2	76.7	77.7	4.5	28.1

Source and definitions: See Table 1 and text.

Figure 2 (Estelí, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	246	11.87	10.71	16.83	20.68	25.28	41.03
		Rate (HHs)		7.5	6.3	20.3	31.8	41.6	64.4
		Rate (people)		9.6	8.1	27.0	40.6	50.1	72.4
Rural	2005	Line	149	11.11	10.03	15.75	19.36	23.66	38.41
		Rate (HHs)		43.7	37.9	66.8	75.6	83.2	96.0
		Rate (people)		51.9	47.4	73.9	81.6	87.6	98.1
All	2005	Line	395	11.56	10.43	16.38	20.14	24.61	39.96
		Rate (HHs)		21.4	18.4	38.1	48.6	57.5	76.5
		Rate (people)		26.9	24.2	46.2	57.4	65.5	82.9
Urban	2009	Line	51	22.09	21.52	31.66	37.33	44.71	68.03
		Rate (HHs)		0.0	0.0	4.8	10.1	16.4	46.4
		Rate (people)		0.0	0.0	5.7	15.3	23.8	59.6
Rural	2009	Line	48	20.58	20.05	29.51	34.79	41.67	63.40
		Rate (HHs)		30.0	25.7	61.6	79.1	83.1	97.7
		Rate (people)		39.2	34.1	72.7	87.2	89.5	99.5
All	2009	Line	99	21.25	20.70	30.46	35.92	43.02	65.45
		Rate (HHs)		15.5	13.3	34.2	45.8	50.9	72.9
		Rate (people)		21.8	19.0	42.9	55.3	60.4	81.8

Source and definitions: See Table 1 and text.

Figure 2 (Chinandega, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.14	20.30	30.45	40.60
		Rate (HHs)	189	2.4	29.7	51.7	68.9
		Rate (people)		4.4	41.4	62.8	77.9
Rural	2005	Line		10.75	19.58	29.37	39.15
		Rate (HHs)	145	19.2	67.0	83.7	89.7
		Rate (people)		27.4	79.4	93.1	96.3
All	2005	Line		10.98	20.01	30.01	40.02
		Rate (HHs)	334	8.8	43.9	63.9	76.8
		Rate (people)		13.7	56.7	75.0	85.3
Urban	2009	Line		19.32	32.82	49.23	65.65
		Rate (HHs)	128	4.9	25.6	55.8	71.1
		Rate (people)		7.9	33.6	65.0	78.0
Rural	2009	Line		18.75	31.85	47.77	63.70
		Rate (HHs)	101	23.1	45.5	65.7	81.9
		Rate (people)		28.8	58.0	77.1	88.9
All	2009	Line		19.13	32.49	48.74	64.98
		Rate (HHs)	229	10.7	31.9	58.9	74.6
		Rate (people)		15.0	42.0	69.1	81.7

Source and definitions: See Table 1 and text.

Figure 2 (Chinandega, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	189	9.64	15.42	19.27	30.83	38.54	41.10	10.74	17.52
		Rate (HHs)		1.3	13.3	27.0	53.3	64.6	68.9	1.9	20.1
		Rate (people)		1.9	21.0	38.3	64.3	75.0	77.9	2.7	30.0
Rural	2005	Line	145	9.29	14.87	18.58	29.74	37.17	39.64	10.36	16.90
		Rate (HHs)		12.9	45.5	62.9	83.7	88.4	89.7	16.4	53.2
		Rate (people)		18.8	57.6	75.7	93.1	95.9	96.3	24.5	66.5
All	2005	Line	334	9.50	15.20	18.99	30.39	37.99	40.51	10.59	17.27
		Rate (HHs)		5.7	25.5	40.7	64.9	73.6	76.8	7.4	32.7
		Rate (people)		8.7	35.8	53.4	75.9	83.4	85.3	11.5	44.7
Urban	2009	Line	128	14.06	22.50	28.13	45.00	56.25	59.98	15.68	25.58
		Rate (HHs)		2.3	9.7	20.1	52.1	64.9	65.6	3.6	12.9
		Rate (people)		4.4	14.9	27.0	61.2	73.6	74.1	6.0	19.6
Rural	2009	Line	101	13.65	21.83	27.29	43.67	54.58	58.21	15.21	24.82
		Rate (HHs)		7.0	27.9	41.2	64.9	75.7	79.1	10.5	37.0
		Rate (people)		11.8	33.8	52.9	75.6	83.7	86.7	15.1	45.0
All	2009	Line	229	13.92	22.27	27.84	44.55	55.68	59.38	15.52	25.32
		Rate (HHs)		3.8	15.5	26.8	56.2	68.4	69.9	5.8	20.6
		Rate (people)		7.0	21.4	35.9	66.1	77.1	78.4	9.1	28.3

Source and definitions: See Table 1 and text.

Figure 2 (Chinandega, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	189	12.33	11.12	17.47	21.48	26.25	42.61
		Rate (HHs)		4.1	1.9	15.4	30.2	40.7	68.9
		Rate (people)		6.2	2.7	24.5	41.7	52.1	77.9
Rural	2005	Line	145	11.89	10.73	16.85	20.71	25.31	41.09
		Rate (HHs)		31.8	21.3	54.6	68.4	78.6	91.1
		Rate (people)		42.0	30.6	67.8	80.8	88.6	97.2
All	2005	Line	334	12.15	10.96	17.22	21.17	25.87	42.00
		Rate (HHs)		14.6	9.3	30.3	44.7	55.1	77.3
		Rate (people)		20.7	13.9	42.0	57.4	66.8	85.7
Urban	2009	Line	128	21.94	21.37	31.45	37.08	44.41	67.57
		Rate (HHs)		8.4	7.6	23.5	32.1	45.1	71.1
		Rate (people)		11.9	11.0	30.1	40.8	54.6	78.0
Rural	2009	Line	101	21.29	20.74	30.51	35.98	43.09	65.56
		Rate (HHs)		28.7	27.9	45.5	54.8	64.9	85.1
		Rate (people)		34.4	33.8	58.0	67.0	75.6	90.9
All	2009	Line	229	21.71	21.15	31.13	36.70	43.96	66.88
		Rate (HHs)		14.8	14.1	30.5	39.3	51.4	75.6
		Rate (people)		19.6	18.8	39.6	49.7	61.7	82.4

Source and definitions: See Table 1 and text.

Figure 2 (León, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.43	20.82	31.24	41.65
		Rate (HHs)	175	3.9	32.6	58.7	72.8
		Rate (people)		7.4	43.6	68.0	81.5
Rural	2005	Line		10.54	19.20	28.80	38.40
		Rate (HHs)	130	21.6	52.5	77.9	85.4
		Rate (people)		29.4	65.7	87.4	93.6
All	2005	Line		11.06	20.14	30.22	40.29
		Rate (HHs)	305	11.4	41.0	66.8	78.1
		Rate (people)		16.6	52.8	76.2	86.5
Urban	2009	Line		19.94	33.86	50.79	67.72
		Rate (HHs)	86	5.6	17.7	49.4	67.6
		Rate (people)		9.3	22.2	55.7	71.4
Rural	2009	Line		19.06	32.38	48.57	64.75
		Rate (HHs)	130	24.1	45.6	72.0	91.3
		Rate (people)		34.1	59.2	81.4	94.4
All	2009	Line		19.42	32.99	49.49	65.98
		Rate (HHs)	216	15.8	33.1	61.9	80.7
		Rate (people)		23.8	43.9	70.8	84.9

Source and definitions: See Table 1 and text.

Figure 2 (León, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	175	9.88	15.81	19.77	31.63	39.54	42.16	11.02	17.98
		Rate (HHs)		2.1	15.5	29.8	59.8	71.2	73.8	3.3	22.8
		Rate (people)		3.1	21.3	40.3	68.9	80.1	82.0	5.4	32.2
Rural	2005	Line	130	9.11	14.58	18.23	29.16	36.46	38.87	10.16	16.58
		Rate (HHs)		13.3	35.3	49.3	77.9	84.7	85.4	19.1	42.3
		Rate (people)		16.5	47.4	61.8	87.4	93.4	93.6	27.2	54.6
All	2005	Line	305	9.56	15.30	19.12	30.60	38.25	40.78	10.66	17.39
		Rate (HHs)		6.8	23.8	38.0	67.4	76.9	78.7	10.0	31.0
		Rate (people)		8.7	32.3	49.3	76.6	85.7	86.8	14.5	41.6
Urban	2009	Line	86	14.51	23.21	29.02	46.43	58.03	61.88	16.17	26.39
		Rate (HHs)		2.1	6.7	13.4	42.7	56.0	65.4	2.1	10.2
		Rate (people)		3.1	10.6	17.5	48.4	61.6	69.7	3.1	14.1
Rural	2009	Line	130	13.87	22.20	27.74	44.39	55.49	59.17	15.46	25.23
		Rate (HHs)		7.9	26.9	39.6	67.1	83.4	89.4	12.2	31.1
		Rate (people)		12.5	36.9	52.6	76.9	90.6	93.4	18.7	42.1
All	2009	Line	216	14.14	22.62	28.27	45.23	56.54	60.29	15.76	25.71
		Rate (HHs)		5.3	17.9	27.8	56.2	71.2	78.6	7.6	21.8
		Rate (people)		8.6	26.0	38.1	65.1	78.6	83.6	12.2	30.5

Source and definitions: See Table 1 and text.

Figure 2 (León, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	175	12.64	11.41	17.92	22.03	26.92	43.71
		Rate (HHs)		3.9	2.7	15.5	29.8	43.5	71.2
		Rate (people)		7.4	4.6	21.3	40.3	53.3	80.1
Rural	2005	Line	130	11.66	10.52	16.53	20.32	24.83	40.30
		Rate (HHs)		28.5	24.6	46.3	65.6	73.2	86.2
		Rate (people)		40.4	33.4	58.8	77.7	83.4	93.7
All	2005	Line	305	12.23	11.04	17.34	21.31	26.05	42.28
		Rate (HHs)		14.3	11.9	28.4	44.9	56.0	77.5
		Rate (people)		21.2	16.7	37.0	56.0	65.9	85.8
Urban	2009	Line	86	22.63	22.04	32.44	38.25	45.81	69.70
		Rate (HHs)		6.7	5.6	14.5	18.8	33.6	65.4
		Rate (people)		10.6	9.3	18.6	23.5	39.5	69.7
Rural	2009	Line	130	21.64	21.08	31.02	36.57	43.80	66.65
		Rate (HHs)		26.9	26.9	44.5	55.3	65.4	92.3
		Rate (people)		36.9	36.9	58.3	68.0	75.9	95.5
All	2009	Line	216	22.05	21.48	31.61	37.27	44.64	67.91
		Rate (HHs)		17.9	17.3	31.1	38.9	51.2	80.2
		Rate (people)		26.0	25.5	41.8	49.6	60.8	84.8

Source and definitions: See Table 1 and text.

Figure 2 (Matagalpa, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.82	19.72	29.57	39.43
		Rate (HHs)	149	9.5	31.8	55.6	65.4
		Rate (people)		15.4	42.3	64.8	74.5
Rural	2005	Line		9.97	18.17	27.25	36.33
		Rate (HHs)	218	36.1	71.1	80.8	93.5
		Rate (people)		45.9	80.2	89.0	96.8
All	2005	Line		10.29	18.74	28.12	37.49
		Rate (HHs)	367	25.9	56.1	71.1	82.7
		Rate (people)		34.5	66.0	80.0	88.5
Urban	2009	Line		19.15	32.53	48.79	65.06
		Rate (HHs)	60	7.0	27.8	49.0	62.0
		Rate (people)		9.4	31.7	54.3	66.5
Rural	2009	Line		17.89	30.38	45.57	60.76
		Rate (HHs)	98	27.9	66.4	90.9	93.7
		Rate (people)		34.8	72.3	94.6	97.2
All	2009	Line		18.32	31.11	46.67	62.23
		Rate (HHs)	158	20.3	52.2	75.5	82.1
		Rate (people)		26.1	58.4	80.8	86.7

Source and definitions: See Table 1 and text.

Figure 2 (Matagalpa, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line		9.36	14.97	18.72	29.95	37.43	39.92	10.43	17.02
		Rate (HHs)	149	5.3	20.9	29.6	56.2	62.8	66.3	7.9	25.8
		Rate (people)		8.4	29.7	40.7	65.6	72.1	75.4	12.2	36.3
Rural	2005	Line		8.62	13.80	17.25	27.59	34.49	36.78	9.61	15.68
		Rate (HHs)	218	27.9	57.4	68.2	80.9	91.0	93.5	33.8	65.7
		Rate (people)		36.5	68.2	78.1	89.1	94.5	96.8	43.4	75.3
All	2005	Line		8.90	14.24	17.79	28.47	35.59	37.95	9.92	16.18
		Rate (HHs)	367	19.2	43.4	53.4	71.4	80.2	83.1	23.9	50.4
		Rate (people)		26.0	53.9	64.2	80.4	86.1	88.8	31.8	60.7
Urban	2009	Line		13.94	22.30	27.87	44.60	55.75	59.44	15.54	25.35
		Rate (HHs)	60	0.0	15.3	19.2	42.0	55.3	58.0	0.0	16.3
		Rate (people)		0.0	20.9	23.7	46.5	59.8	61.1	0.0	21.6
Rural	2009	Line		13.02	20.83	26.03	41.65	52.06	55.52	14.51	23.67
		Rate (HHs)	98	8.9	33.6	57.4	87.8	91.9	93.7	14.2	48.0
		Rate (people)		12.0	40.5	64.3	91.9	96.1	97.2	16.9	54.2
All	2009	Line		13.33	21.33	26.66	42.66	53.32	56.86	14.86	24.25
		Rate (HHs)	158	5.6	26.9	43.4	71.0	78.5	80.6	9.0	36.4
		Rate (people)		7.9	33.8	50.5	76.4	83.7	84.8	11.1	43.1

Source and definitions: See Table 1 and text.

Figure 2 (Matagalpa, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	149	11.97	10.80	16.97	20.86	25.49	41.38
		Rate (HHs)		12.2	9.5	25.8	37.7	49.2	67.2
		Rate (people)		18.9	15.4	36.3	48.4	59.3	76.6
Rural	2005	Line	218	11.03	9.96	15.64	19.22	23.49	38.13
		Rate (HHs)		54.7	48.6	72.8	76.8	80.9	95.2
		Rate (people)		65.2	59.0	81.9	85.6	89.1	97.9
All	2005	Line	367	11.38	10.27	16.13	19.83	24.24	39.34
		Rate (HHs)		38.4	33.6	54.8	61.8	68.7	84.5
		Rate (people)		47.9	42.8	64.9	71.7	78.0	89.9
Urban	2009	Line	60	21.74	21.18	31.16	36.74	44.01	66.96
		Rate (HHs)		12.7	9.4	25.9	30.1	39.9	62.0
		Rate (people)		17.4	12.6	29.7	34.3	45.2	66.5
Rural	2009	Line	98	20.30	19.78	29.11	34.32	41.10	62.54
		Rate (HHs)		42.9	41.9	72.9	86.2	91.9	93.7
		Rate (people)		49.6	48.5	78.6	90.3	96.1	97.2
All	2009	Line	158	20.79	20.26	29.81	35.15	42.10	64.05
		Rate (HHs)		31.9	30.0	55.7	65.6	72.9	82.1
		Rate (people)		38.6	36.3	61.9	71.2	78.7	86.7

Source and definitions: See Table 1 and text.

Figure 2 (Boaco, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.03	20.09	30.14	40.19
		Rate (HHs)	157	3.3	10.7	33.1	52.1
		Rate (people)		4.9	15.7	41.5	62.2
Rural	2005	Line		9.99	18.20	27.29	36.39
		Rate (HHs)	226	17.3	64.2	87.8	94.6
		Rate (people)		18.6	68.6	91.4	96.0
All	2005	Line		10.31	18.79	28.18	37.57
		Rate (HHs)	383	11.9	43.7	66.8	78.3
		Rate (people)		14.3	52.1	75.8	85.4
Urban	2009	Line		18.87	32.04	48.06	64.09
		Rate (HHs)	31	0.0	11.8	47.3	73.2
		Rate (people)		0.0	14.4	54.7	78.9
Rural	2009	Line		17.98	30.54	45.81	61.08
		Rate (HHs)	58	17.3	53.6	76.8	92.6
		Rate (people)		22.4	67.4	84.1	96.8
All	2009	Line		18.31	31.10	46.65	62.20
		Rate (HHs)	89	10.4	37.0	65.1	84.9
		Rate (people)		14.1	47.6	73.1	90.1

Source and definitions: See Table 1 and text.

Figure 2 (Boaco, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	157	9.54	15.26	19.08	30.52	38.15	40.68	10.63	17.35
		Rate (HHs)		1.2	7.8	10.2	33.1	47.3	53.9	1.9	9.9
		Rate (people)		2.2	12.2	14.6	41.5	56.6	63.6	3.4	14.3
Rural	2005	Line	226	8.64	13.82	17.27	27.64	34.55	36.84	9.63	15.71
		Rate (HHs)		11.5	43.5	60.7	88.6	93.1	94.6	15.7	54.8
		Rate (people)		12.9	45.8	65.5	92.4	95.3	96.0	17.0	59.5
All	2005	Line	383	8.92	14.27	17.83	28.54	35.67	38.04	9.94	16.22
		Rate (HHs)		7.6	29.8	41.3	67.3	75.5	79.0	10.4	37.6
		Rate (people)		9.6	35.3	49.6	76.5	83.3	85.9	12.8	45.4
Urban	2009	Line	31	13.73	21.97	27.46	43.93	54.92	58.56	15.30	24.97
		Rate (HHs)		0.0	6.0	8.7	35.7	61.4	67.4	0.0	6.0
		Rate (people)		0.0	6.3	8.6	43.1	65.8	72.7	0.0	6.3
Rural	2009	Line	58	13.08	20.94	26.17	41.87	52.34	55.81	14.59	23.80
		Rate (HHs)		7.9	31.0	35.5	75.2	84.2	89.2	10.0	33.8
		Rate (people)		10.5	41.0	45.4	82.2	91.3	93.9	13.0	43.4
All	2009	Line	89	13.32	21.32	26.65	42.64	53.30	56.83	14.85	24.23
		Rate (HHs)		4.8	21.1	24.9	59.6	75.2	80.5	6.1	22.8
		Rate (people)		6.6	28.0	31.7	67.6	81.8	86.0	8.2	29.6

Source and definitions: See Table 1 and text.

Figure 2 (Boaco, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	157	12.20	11.01	17.30	21.26	25.98	42.18
		Rate (HHs)		4.2	1.9	8.6	11.2	21.9	53.9
		Rate (people)		5.6	3.4	12.9	16.2	27.8	63.6
Rural	2005	Line	226	11.05	9.97	15.66	19.25	23.53	38.19
		Rate (HHs)		39.9	29.7	64.9	77.1	88.6	97.6
		Rate (people)		42.5	30.3	69.3	81.6	92.4	98.4
All	2005	Line	383	11.41	10.30	16.17	19.88	24.29	39.43
		Rate (HHs)		26.2	19.0	43.3	51.8	63.0	80.8
		Rate (people)		31.0	21.9	51.7	61.2	72.3	87.5
Urban	2009	Line	31	21.42	20.86	30.70	36.19	43.35	65.96
		Rate (HHs)		6.0	6.0	11.8	20.5	38.4	77.3
		Rate (people)		6.3	6.3	14.4	24.2	47.2	81.5
Rural	2009	Line	58	20.41	19.88	29.26	34.50	41.32	62.87
		Rate (HHs)		31.0	31.0	59.4	68.6	76.8	96.4
		Rate (people)		41.0	41.0	72.2	79.5	84.1	98.5
All	2009	Line	89	20.78	20.25	29.80	35.13	42.08	64.02
		Rate (HHs)		21.1	21.1	40.5	49.6	61.6	88.8
		Rate (people)		28.0	28.0	50.6	58.9	70.3	92.2

Source and definitions: See Table 1 and text.

Figure 2 (Managua, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		12.01	21.88	32.82	43.76
		Rate (HHs)	494	1.5	13.9	34.7	54.8
		Rate (people)		2.9	19.7	44.0	63.3
Rural	2005	Line		11.21	20.41	30.62	40.83
		Rate (HHs)	60	6.9	29.3	58.3	74.9
		Rate (people)		10.8	35.4	67.8	81.0
All	2005	Line		11.94	21.74	32.61	43.48
		Rate (HHs)	554	2.0	15.4	37.1	56.8
		Rate (people)		3.6	21.2	46.3	65.0
Urban	2009	Line		20.18	34.28	51.42	68.55
		Rate (HHs)	3,752	2.0	15.1	37.9	56.7
		Rate (people)		3.3	21.4	47.2	66.0
Rural	2009	Line		19.33	32.84	49.25	65.67
		Rate (HHs)	416	5.5	26.4	50.5	68.1
		Rate (people)		8.1	33.5	57.8	73.9
All	2009	Line		20.11	34.15	51.23	68.31
		Rate (HHs)	4,168	2.3	16.1	39.0	57.7
		Rate (people)		3.7	22.5	48.1	66.7

Source and definitions: See Table 1 and text.

Figure 2 (Managua, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	494	10.39	16.62	20.77	33.24	41.54	44.30	11.58	18.89
		Rate (HHs)		0.8	5.7	11.5	35.5	50.3	55.6	1.3	8.1
		Rate (people)		1.9	8.9	16.6	44.7	59.9	64.1	2.6	12.1
Rural	2005	Line	60	9.69	15.50	19.38	31.01	38.76	41.33	10.80	17.62
		Rate (HHs)		3.6	16.4	29.3	58.3	73.2	76.5	6.9	22.8
		Rate (people)		5.1	21.4	35.4	67.8	80.3	82.4	10.8	30.1
All	2005	Line	554	10.32	16.51	20.64	33.02	41.28	44.02	11.50	18.77
		Rate (HHs)		1.1	6.8	13.3	37.8	52.6	57.7	1.8	9.6
		Rate (people)		2.2	10.0	18.4	46.9	61.8	65.8	3.4	13.8
Urban	2009	Line	3,752	14.69	23.50	29.37	47.00	58.74	62.64	16.37	26.71
		Rate (HHs)		0.4	4.0	9.3	32.4	46.6	51.0	0.7	6.7
		Rate (people)		0.9	6.5	13.9	41.3	56.0	60.6	1.3	10.4
Rural	2009	Line	416	14.07	22.51	28.14	45.02	56.27	60.01	15.68	25.59
		Rate (HHs)		1.6	9.7	18.8	46.8	61.8	64.0	2.6	15.1
		Rate (people)		2.8	13.7	25.1	54.2	68.0	70.1	4.2	20.5
All	2009	Line	4,168	14.63	23.41	29.27	46.83	58.53	62.42	16.31	26.61
		Rate (HHs)		0.5	4.5	10.1	33.6	47.9	52.1	0.8	7.4
		Rate (people)		1.0	7.1	14.8	42.4	57.0	61.4	1.5	11.3

Source and definitions: See Table 1 and text.

Figure 2 (Managua, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	494	13.29	11.99	18.83	23.15	28.29	45.93
		Rate (HHs)		0.9	0.6	4.0	8.4	17.2	42.4
		Rate (people)		1.9	1.2	6.6	12.3	24.1	52.6
Rural	2005	Line	60	12.39	11.19	17.57	21.60	26.39	42.85
		Rate (HHs)		8.5	6.9	19.5	29.3	49.0	74.9
		Rate (people)		11.5	10.8	26.2	35.4	56.9	81.0
All	2005	Line	554	13.20	11.92	18.71	23.00	28.11	45.64
		Rate (HHs)		1.6	1.2	5.5	10.5	20.4	45.7
		Rate (people)		2.8	2.2	8.4	14.5	27.2	55.3
Urban	2009	Line	3,752	22.91	22.32	32.84	38.72	46.38	70.56
		Rate (HHs)		2.2	1.7	9.1	15.4	24.2	51.2
		Rate (people)		3.7	2.9	13.6	21.7	32.3	60.7
Rural	2009	Line	416	21.94	21.38	31.46	37.09	44.42	67.59
		Rate (HHs)		7.4	6.5	23.0	33.6	44.5	68.0
		Rate (people)		11.0	9.8	29.5	41.3	52.1	73.8
All	2009	Line	4,168	22.83	22.24	32.72	38.58	46.21	70.31
		Rate (HHs)		2.6	2.1	10.3	17.0	26.0	52.7
		Rate (people)		4.3	3.5	14.9	23.4	34.0	61.9

Source and definitions: See Table 1 and text.

Figure 2 (Masaya, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.29	20.57	30.85	41.14
		Rate (HHs)	171	4.5	25.2	54.2	70.1
		Rate (people)		5.6	29.9	61.8	76.1
Rural	2005	Line		11.31	20.60	30.90	41.20
		Rate (HHs)	113	5.9	34.8	68.1	87.7
		Rate (people)		9.0	44.2	75.9	91.3
All	2005	Line		11.30	20.58	30.87	41.16
		Rate (HHs)	284	5.1	29.3	60.2	77.6
		Rate (people)		7.1	36.3	68.1	82.9
Urban	2009	Line		19.81	33.66	50.48	67.31
		Rate (HHs)	162	4.5	21.9	43.1	60.0
		Rate (people)		6.2	28.7	53.0	68.9
Rural	2009	Line		19.02	32.31	48.46	64.61
		Rate (HHs)	88	5.0	37.6	73.1	87.6
		Rate (people)		4.3	40.0	78.4	92.0
All	2009	Line		19.56	33.23	49.85	66.46
		Rate (HHs)	250	4.6	26.2	51.4	67.7
		Rate (people)		5.6	32.3	61.0	76.2

Source and definitions: See Table 1 and text.

Figure 2 (Masaya, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	171	9.76	15.62	19.53	31.24	39.05	41.64	10.88	17.76
		Rate (HHs)		1.1	10.8	21.7	54.7	67.1	70.6	3.9	16.9
		Rate (people)		1.7	14.0	26.7	62.5	73.7	76.8	5.0	21.3
Rural	2005	Line	113	9.78	15.64	19.55	31.29	39.11	41.70	10.90	17.78
		Rate (HHs)		2.4	18.7	29.5	68.1	81.6	87.7	5.0	23.3
		Rate (people)		3.1	26.1	37.6	75.9	86.8	91.3	7.8	31.4
All	2005	Line	284	9.77	15.63	19.54	31.26	39.08	41.67	10.89	17.77
		Rate (HHs)		1.7	14.2	25.1	60.4	73.3	77.9	4.4	19.6
		Rate (people)		2.3	19.4	31.6	68.5	79.6	83.3	6.2	25.8
Urban	2009	Line	162	14.42	23.07	28.84	46.14	57.68	61.51	16.07	26.23
		Rate (HHs)		1.6	8.2	13.8	39.4	49.9	56.9	2.6	10.7
		Rate (people)		2.1	10.3	17.2	49.4	60.5	66.4	4.0	13.5
Rural	2009	Line	88	13.84	22.15	27.68	44.29	55.37	59.04	15.43	25.17
		Rate (HHs)		1.2	11.0	26.8	66.5	82.7	86.3	1.2	20.8
		Rate (people)		1.0	10.5	29.7	73.4	88.3	91.4	1.0	24.6
All	2009	Line	250	14.24	22.78	28.48	45.56	56.95	60.73	15.87	25.89
		Rate (HHs)		1.5	8.9	17.4	46.9	59.0	65.0	2.2	13.5
		Rate (people)		1.7	10.4	21.2	57.0	69.3	74.3	3.0	17.0

Source and definitions: See Table 1 and text.

Figure 2 (Masaya, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	171	12.49	11.27	17.70	21.76	26.60	43.18
		Rate (HHs)		5.1	1.1	13.3	24.0	36.1	67.7
		Rate (people)		6.6	1.7	17.1	28.9	40.5	74.1
Rural	2005	Line	113	12.51	11.29	17.73	21.79	26.63	43.23
		Rate (HHs)		5.9	4.1	19.6	33.0	49.7	85.0
		Rate (people)		9.0	4.9	26.7	42.0	59.7	89.3
All	2005	Line	284	12.50	11.28	17.72	21.78	26.61	43.20
		Rate (HHs)		5.5	2.4	16.0	27.8	41.9	75.1
		Rate (people)		7.7	3.1	21.4	34.8	49.1	80.9
Urban	2009	Line	162	22.49	21.91	32.24	38.02	45.54	69.28
		Rate (HHs)		5.2	5.2	13.8	24.1	30.7	58.1
		Rate (people)		6.8	6.8	17.2	30.9	38.2	67.5
Rural	2009	Line	88	21.59	21.03	30.95	36.49	43.71	66.50
		Rate (HHs)		9.9	7.9	36.0	48.7	66.5	87.6
		Rate (people)		9.0	6.6	38.0	52.6	73.4	92.0
All	2009	Line	250	22.21	21.63	31.84	37.54	44.96	68.40
		Rate (HHs)		6.5	5.9	19.9	30.9	40.6	66.2
		Rate (people)		7.5	6.8	23.8	37.7	49.3	75.3

Source and definitions: See Table 1 and text.

Figure 2 (Chontales, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		10.98	20.00	30.00	40.00
		Rate (HHs)	231	4.2	26.6	50.4	62.7
		Rate (people)		6.1	33.3	57.7	69.7
Rural	2005	Line		10.08	18.37	27.56	36.74
		Rate (HHs)	135	9.5	48.7	75.7	84.4
		Rate (people)		14.1	59.5	87.3	94.0
All	2005	Line		10.61	19.32	28.98	38.65
		Rate (HHs)	366	6.3	35.2	60.3	71.2
		Rate (people)		9.5	44.2	70.0	79.8
Urban	2009	Line		18.94	32.17	48.25	64.33
		Rate (HHs)	94	3.6	24.4	48.4	70.8
		Rate (people)		10.7	38.5	61.9	81.3
Rural	2009	Line		18.01	30.59	45.89	61.18
		Rate (HHs)	29	7.4	29.8	62.0	88.5
		Rate (people)		13.6	37.4	71.4	88.0
All	2009	Line		18.76	31.86	47.79	63.71
		Rate (HHs)	123	4.4	25.5	51.1	74.4
		Rate (people)		11.2	38.3	63.8	82.6

Source and definitions: See Table 1 and text.

Figure 2 (Chontales, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	231	9.49	15.19	18.99	30.38	37.98	40.50	10.58	17.27
		Rate (HHs)		2.1	12.6	23.6	51.2	60.0	62.7	3.7	16.5
		Rate (people)		3.5	18.2	30.0	58.6	67.8	69.7	5.6	22.4
Rural	2005	Line	135	8.72	13.95	17.44	27.90	34.88	37.19	9.72	15.86
		Rate (HHs)		4.9	26.6	45.1	77.8	83.3	84.4	9.2	38.4
		Rate (people)		7.1	34.8	53.9	89.1	93.5	94.0	13.7	48.4
All	2005	Line	366	9.17	14.68	18.34	29.35	36.69	39.12	10.22	16.68
		Rate (HHs)		3.2	18.1	32.0	61.6	69.1	71.2	5.9	25.1
		Rate (people)		5.0	25.1	39.9	71.3	78.5	79.8	9.0	33.2
Urban	2009	Line	94	13.78	22.05	27.56	44.10	55.13	58.79	15.36	25.07
		Rate (HHs)		0.8	7.9	16.1	44.0	58.5	64.6	2.8	13.2
		Rate (people)		2.0	17.3	27.9	59.2	71.8	75.9	9.5	24.0
Rural	2009	Line	29	13.11	20.97	26.21	41.94	52.43	55.91	14.61	23.84
		Rate (HHs)		0.0	10.4	20.9	54.7	82.6	85.5	4.3	16.6
		Rate (people)		0.0	18.3	30.2	61.0	85.4	86.0	9.5	26.4
All	2009	Line	123	13.65	21.84	27.30	43.68	54.60	58.22	15.22	24.82
		Rate (HHs)		0.6	8.4	17.0	46.1	63.3	68.8	3.1	13.8
		Rate (people)		1.6	17.5	28.4	59.5	74.4	77.9	9.5	24.5

Source and definitions: See Table 1 and text.

Figure 2 (Chontales, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	231	12.15	10.96	17.22	21.16	25.86	41.98
		Rate (HHs)		5.2	3.7	16.1	29.8	42.3	63.4
		Rate (people)		7.2	5.6	21.9	36.1	50.3	70.3
Rural	2005	Line	135	11.16	10.07	15.81	19.44	23.75	38.56
		Rate (HHs)		23.6	15.0	48.7	55.9	76.6	87.7
		Rate (people)		31.5	21.9	59.5	66.9	87.8	96.5
All	2005	Line	366	11.73	10.59	16.63	20.44	24.98	40.56
		Rate (HHs)		12.4	8.1	28.9	40.0	55.7	72.9
		Rate (people)		17.3	12.4	37.6	49.0	65.9	81.2
Urban	2009	Line	94	21.50	20.94	30.82	36.34	43.52	66.22
		Rate (HHs)		5.5	5.5	19.9	36.4	44.0	71.8
		Rate (people)		14.4	14.4	32.8	51.3	59.2	82.4
Rural	2009	Line	29	20.45	19.92	29.31	34.56	41.39	62.97
		Rate (HHs)		10.4	10.4	37.1	43.1	62.0	92.8
		Rate (people)		18.3	18.3	45.6	50.9	71.4	93.7
All	2009	Line	123	21.29	20.74	30.52	35.99	43.10	65.58
		Rate (HHs)		6.5	6.5	23.3	37.7	47.6	76.0
		Rate (people)		15.2	15.2	35.3	51.2	61.6	84.6

Source and definitions: See Table 1 and text.

Figure 2 (Granada, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.17	20.36	30.53	40.71
		Rate (HHs)	150	4.2	27.9	52.4	70.7
		Rate (people)		6.3	37.2	62.3	79.4
Rural	2005	Line		10.62	19.35	29.02	38.70
		Rate (HHs)	79	2.7	38.3	70.1	90.8
		Rate (people)		2.1	43.2	80.5	95.7
All	2005	Line		10.97	19.98	29.97	39.96
		Rate (HHs)	229	3.6	31.9	59.1	78.4
		Rate (people)		4.7	39.4	69.1	85.5
Urban	2009	Line		19.37	32.91	49.36	65.81
		Rate (HHs)	90	4.5	22.3	51.3	70.0
		Rate (people)		6.6	29.3	60.2	78.3
Rural	2009	Line		18.45	31.34	47.01	62.68
		Rate (HHs)	83	14.5	51.7	88.4	97.7
		Rate (people)		26.8	65.7	92.9	98.8
All	2009	Line		19.03	32.32	48.47	64.63
		Rate (HHs)	173	8.1	32.7	64.4	79.8
		Rate (people)		14.2	43.0	72.5	86.1

Source and definitions: See Table 1 and text.

Figure 2 (Granada, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	150	9.66	15.46	19.32	30.92	38.65	41.21	10.77	17.57
		Rate (HHs)		2.9	19.9	25.7	53.0	68.7	71.4	4.2	22.3
		Rate (people)		4.6	28.1	35.0	62.7	77.8	79.9	6.3	32.1
Rural	2005	Line	79	9.18	14.69	18.37	29.39	36.73	39.17	10.24	16.70
		Rate (HHs)		2.7	15.8	33.6	70.1	87.2	90.8	2.7	24.4
		Rate (people)		2.1	17.3	39.2	80.5	92.1	95.7	2.1	28.4
All	2005	Line	229	9.48	15.17	18.97	30.35	37.93	40.45	10.57	17.25
		Rate (HHs)		2.8	18.3	28.7	59.6	75.8	78.8	3.6	23.1
		Rate (people)		3.7	24.1	36.5	69.4	83.2	85.8	4.7	30.7
Urban	2009	Line	90	14.10	22.56	28.20	45.12	56.40	60.14	15.72	25.64
		Rate (HHs)		0.0	7.0	14.0	44.6	66.0	68.7	1.6	10.6
		Rate (people)		0.0	11.0	18.1	53.4	75.3	77.5	2.0	15.5
Rural	2009	Line	83	13.43	21.49	26.86	42.97	53.71	57.28	14.97	24.42
		Rate (HHs)		6.5	21.9	39.4	83.6	93.6	94.8	9.7	31.6
		Rate (people)		15.5	36.4	53.6	90.7	95.6	96.6	20.8	46.2
All	2009	Line	173	13.85	22.15	27.69	44.31	55.38	59.06	15.43	25.18
		Rate (HHs)		2.3	12.2	23.0	58.4	75.8	78.0	4.4	18.0
		Rate (people)		5.8	20.6	31.5	67.5	83.0	84.7	9.1	27.1

Source and definitions: See Table 1 and text.

Figure 2 (Granada, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	150	12.36	11.16	17.52	21.54	26.32	42.73
		Rate (HHs)		5.0	4.2	22.3	27.9	39.6	70.7
		Rate (people)		7.3	6.3	32.1	37.2	50.1	79.4
Rural	2005	Line	79	11.75	10.60	16.65	20.47	25.02	40.61
		Rate (HHs)		9.3	5.3	29.6	50.2	63.7	91.9
		Rate (people)		11.3	5.3	34.4	58.3	73.4	96.4
All	2005	Line	229	12.13	10.95	17.20	21.14	25.83	41.94
		Rate (HHs)		6.6	4.6	25.1	36.4	48.8	78.8
		Rate (people)		8.8	5.9	33.0	45.0	58.8	85.8
Urban	2009	Line	90	21.99	21.42	31.53	37.17	44.52	67.74
		Rate (HHs)		4.5	4.5	16.4	25.5	43.4	70.0
		Rate (people)		6.6	6.6	22.1	33.6	52.1	78.3
Rural	2009	Line	83	20.95	20.40	30.03	35.40	42.40	64.52
		Rate (HHs)		23.0	21.9	55.3	71.7	86.2	97.7
		Rate (people)		37.6	36.4	70.2	83.8	91.3	98.8
All	2009	Line	173	21.60	21.04	30.96	36.50	43.72	66.52
		Rate (HHs)		11.1	10.7	30.2	41.9	58.5	79.8
		Rate (people)		18.3	17.8	40.2	52.6	66.9	86.1

Source and definitions: See Table 1 and text.

Figure 2 (Carazo, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.53	21.00	31.50	42.00
		Rate (HHs)	113	6.1	25.0	51.6	69.0
		Rate (people)		8.3	29.5	59.4	75.6
Rural	2005	Line		10.87	19.81	29.71	39.62
		Rate (HHs)	105	18.2	56.4	82.8	90.7
		Rate (people)		24.4	61.3	88.8	93.6
All	2005	Line		11.28	20.55	30.82	41.10
		Rate (HHs)	218	10.7	37.0	63.6	77.3
		Rate (people)		14.5	41.6	70.6	82.4
Urban	2009	Line		19.56	33.23	49.85	66.46
		Rate (HHs)	55	4.8	13.4	37.5	53.6
		Rate (people)		6.9	22.8	47.0	64.2
Rural	2009	Line		18.54	31.50	47.25	62.99
		Rate (HHs)	45	8.5	51.6	76.4	83.8
		Rate (people)		13.2	60.7	84.2	90.2
All	2009	Line		19.20	32.61	48.92	65.23
		Rate (HHs)	100	6.1	26.2	50.6	63.7
		Rate (people)		9.2	36.3	60.2	73.5

Source and definitions: See Table 1 and text.

Figure 2 (Carazo, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	113	9.97	15.95	19.94	31.90	39.87	42.52	11.11	18.13
		Rate (HHs)		5.1	12.9	21.6	51.6	67.2	69.8	5.1	16.3
		Rate (people)		7.1	15.5	25.7	59.4	73.5	76.4	7.1	19.2
Rural	2005	Line	105	9.40	15.04	18.81	30.09	37.61	40.11	10.48	17.10
		Rate (HHs)		9.8	36.9	53.4	82.8	90.7	90.7	16.3	47.5
		Rate (people)		13.9	44.9	58.5	88.8	93.6	93.6	22.5	54.8
All	2005	Line	218	9.75	15.61	19.51	31.21	39.01	41.60	10.87	17.74
		Rate (HHs)		6.9	22.1	33.8	63.6	76.2	77.8	9.4	28.2
		Rate (people)		9.7	26.7	38.2	70.6	81.1	83.0	13.0	32.7
Urban	2009	Line	55	14.24	22.78	28.48	45.56	56.95	60.73	15.87	25.89
		Rate (HHs)		1.5	7.3	13.4	34.6	44.9	51.8	1.5	8.8
		Rate (people)		2.2	12.2	22.8	44.6	55.2	63.0	2.2	15.1
Rural	2009	Line	45	13.50	21.59	26.99	43.18	53.98	57.56	15.04	24.54
		Rate (HHs)		2.0	14.8	34.2	72.1	81.5	83.8	4.2	21.4
		Rate (people)		2.1	19.9	42.8	80.5	88.7	90.2	6.6	29.9
All	2009	Line	100	13.97	22.36	27.95	44.71	55.89	59.60	15.58	25.41
		Rate (HHs)		1.7	9.8	20.4	47.2	57.2	62.6	2.4	13.0
		Rate (people)		2.2	14.9	29.9	57.4	67.1	72.7	3.8	20.4

Source and definitions: See Table 1 and text.

Figure 2 (Carazo, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	113	12.75	11.51	18.08	22.22	27.15	44.08
		Rate (HHs)		6.1	5.1	12.9	19.6	33.3	65.7
		Rate (people)		8.3	7.1	15.5	22.5	39.3	72.7
Rural	2005	Line	105	12.03	10.86	17.05	20.96	25.61	41.58
		Rate (HHs)		23.1	17.2	46.5	57.3	74.5	92.6
		Rate (people)		30.2	23.6	54.6	62.3	82.3	94.4
All	2005	Line	218	12.48	11.26	17.69	21.74	26.57	43.13
		Rate (HHs)		12.6	9.7	25.8	34.1	49.1	76.0
		Rate (people)		16.7	13.4	30.4	37.6	55.7	80.9
Urban	2009	Line	55	22.21	21.63	31.84	37.54	44.96	68.41
		Rate (HHs)		7.3	4.8	13.4	14.9	26.3	53.6
		Rate (people)		12.2	6.9	22.8	25.3	36.3	64.2
Rural	2009	Line	45	21.05	20.51	30.18	35.58	42.61	64.84
		Rate (HHs)		16.7	14.8	51.6	62.7	74.0	86.1
		Rate (people)		23.2	19.9	60.7	70.9	82.6	90.7
All	2009	Line	100	21.80	21.23	31.25	36.84	44.12	67.14
		Rate (HHs)		10.4	8.2	26.2	31.0	42.3	64.5
		Rate (people)		16.1	11.5	36.3	41.6	52.8	73.7

Source and definitions: See Table 1 and text.

Figure 2 (Rivas, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.34	20.66	30.99	41.32
		Rate (HHs)	107	5.5	31.4	55.3	75.5
		Rate (people)		9.7	40.2	62.3	82.6
Rural	2005	Line		10.76	19.60	29.40	39.19
		Rate (HHs)	131	18.6	54.3	76.9	85.4
		Rate (people)		23.3	63.2	84.5	90.5
All	2005	Line		11.03	20.09	30.14	40.19
		Rate (HHs)	238	12.5	43.7	66.9	80.9
		Rate (people)		16.9	52.5	74.1	86.9
Urban	2009	Line		19.26	32.71	49.07	65.42
		Rate (HHs)	36	0.0	21.4	49.9	58.7
		Rate (people)		0.0	29.9	57.6	69.1
Rural	2009	Line		18.67	31.70	47.56	63.41
		Rate (HHs)	52	3.7	29.4	48.6	78.9
		Rate (people)		3.6	40.2	61.2	83.8
All	2009	Line		18.96	32.21	48.31	64.42
		Rate (HHs)	88	1.9	25.4	49.3	68.9
		Rate (people)		1.8	35.1	59.4	76.4

Source and definitions: See Table 1 and text.

Figure 2 (Rivas, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	107	9.81	15.69	19.61	31.38	39.23	41.83	10.93	17.84
		Rate (HHs)		4.6	14.6	30.5	56.9	70.4	76.6	5.5	23.0
		Rate (people)		7.7	20.8	39.1	63.6	77.9	83.1	9.7	32.0
Rural	2005	Line	131	9.30	14.88	18.60	29.77	37.21	39.68	10.37	16.92
		Rate (HHs)		10.8	38.0	48.0	76.9	83.8	86.8	16.7	45.7
		Rate (people)		14.1	46.0	56.1	84.5	89.2	91.2	20.5	53.7
All	2005	Line	238	9.54	15.26	19.08	30.52	38.15	40.68	10.63	17.35
		Rate (HHs)		7.9	27.2	39.9	67.7	77.6	82.1	11.6	35.2
		Rate (people)		11.1	34.2	48.1	74.7	83.9	87.4	15.4	43.5
Urban	2009	Line	36	14.02	22.42	28.03	44.85	56.06	59.78	15.62	25.49
		Rate (HHs)		0.0	6.5	14.1	35.5	58.7	58.7	0.0	10.3
		Rate (people)		0.0	10.7	20.2	43.6	69.1	69.1	0.0	14.2
Rural	2009	Line	52	13.58	21.73	27.17	43.47	54.33	57.94	15.14	24.71
		Rate (HHs)		0.0	4.9	21.3	42.7	69.5	69.5	3.7	17.0
		Rate (people)		0.0	4.9	27.2	54.4	79.2	79.2	3.6	22.9
All	2009	Line	88	13.80	22.08	27.60	44.16	55.20	58.86	15.38	25.10
		Rate (HHs)		0.0	5.7	17.8	39.1	64.1	64.1	1.9	13.7
		Rate (people)		0.0	7.8	23.7	49.0	74.2	74.2	1.8	18.5

Source and definitions: See Table 1 and text.

Figure 2 (Rivas, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	107	12.55	11.32	17.78	21.86	26.71	43.37
		Rate (HHs)		6.4	5.5	15.7	31.4	39.2	73.5
		Rate (people)		10.5	9.7	21.2	40.2	47.0	80.5
Rural	2005	Line	131	11.90	10.74	16.87	20.73	25.34	41.13
		Rate (HHs)		22.8	19.4	46.3	58.6	70.2	90.1
		Rate (people)		28.5	24.0	54.6	68.4	77.0	93.5
All	2005	Line	238	12.20	11.01	17.30	21.26	25.98	42.18
		Rate (HHs)		15.2	13.0	32.2	46.1	55.9	82.4
		Rate (people)		20.1	17.3	39.0	55.2	63.0	87.4
Urban	2009	Line	36	21.86	21.30	31.34	36.95	44.26	67.34
		Rate (HHs)		0.0	0.0	19.2	26.1	35.5	58.7
		Rate (people)		0.0	0.0	26.5	35.0	43.6	69.1
Rural	2009	Line	52	21.19	20.64	30.37	35.81	42.89	65.26
		Rate (HHs)		4.9	4.9	27.7	33.5	45.0	80.5
		Rate (people)		4.9	4.9	38.0	44.5	57.7	84.5
All	2009	Line	88	21.53	20.97	30.86	36.38	43.58	66.30
		Rate (HHs)		2.4	2.4	23.5	29.8	40.3	69.7
		Rate (people)		2.4	2.4	32.2	39.7	50.6	76.8

Source and definitions: See Table 1 and text.

Figure 2 (Río San Juan, national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.08	20.19	30.28	40.38
		Rate (HHs)	231	7.1	32.6	57.5	73.9
		Rate (people)		11.4	44.5	67.4	81.1
Rural	2005	Line		10.19	18.57	27.86	37.14
		Rate (HHs)	430	16.0	57.7	78.7	88.5
		Rate (people)		20.5	67.1	87.7	95.0
All	2005	Line		10.41	18.96	28.45	37.93
		Rate (HHs)	661	13.6	50.9	73.0	84.6
		Rate (people)		18.3	61.7	82.8	91.6
Urban	2009	Line		19.05	32.36	48.54	64.72
		Rate (HHs)	28	0.0	40.3	68.8	72.5
		Rate (people)		0.0	47.1	74.7	80.1
Rural	2009	Line		18.61	31.60	47.40	63.21
		Rate (HHs)	65	36.6	73.5	91.6	97.7
		Rate (people)		54.3	85.2	95.9	98.7
All	2009	Line		18.74	31.82	47.73	63.65
		Rate (HHs)	93	25.1	63.2	84.5	89.8
		Rate (people)		38.5	74.1	89.7	93.3

Source and definitions: See Table 1 and text.

Figure 2 (Río San Juan, international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	231	9.58	15.33	19.17	30.66	38.33	40.87	10.68	17.43
		Rate (HHs)		5.8	18.2	31.4	57.9	73.1	73.9	7.1	26.5
		Rate (people)		9.3	29.4	43.0	67.7	80.5	81.1	11.4	38.5
Rural	2005	Line	430	8.81	14.10	17.63	28.21	35.26	37.60	9.83	16.03
		Rate (HHs)		9.2	40.1	55.4	78.8	87.7	88.5	14.5	49.1
		Rate (people)		12.6	48.9	65.0	87.7	94.1	95.0	19.0	59.1
All	2005	Line	661	9.00	14.40	18.00	28.80	36.00	38.39	10.03	16.37
		Rate (HHs)		8.2	34.2	49.0	73.2	83.8	84.6	12.5	43.0
		Rate (people)		11.8	44.2	59.7	82.9	90.8	91.6	17.1	54.1
Urban	2009	Line	28	13.86	22.18	27.73	44.36	55.46	59.13	15.45	25.21
		Rate (HHs)		0.0	7.0	22.1	57.9	72.5	72.5	0.0	18.4
		Rate (people)		0.0	8.9	24.0	65.6	80.1	80.1	0.0	22.5
Rural	2009	Line	65	13.54	21.66	27.08	43.33	54.16	57.76	15.09	24.63
		Rate (HHs)		25.8	47.3	65.9	89.3	96.1	97.7	28.4	58.8
		Rate (people)		38.7	63.3	79.4	94.6	98.4	98.7	41.5	74.9
All	2009	Line	93	13.63	21.82	27.27	43.63	54.54	58.16	15.20	24.80
		Rate (HHs)		17.8	34.8	52.2	79.5	88.7	89.8	19.5	46.2
		Rate (people)		27.5	47.5	63.3	86.1	93.1	93.3	29.4	59.7

Source and definitions: See Table 1 and text.

Figure 2 (Río San Juan, relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	231	12.26	11.06	17.38	21.36	26.10	42.38
		Rate (HHs)		7.3	7.1	23.6	33.2	45.2	73.9
		Rate (people)		11.6	11.4	34.9	45.0	56.2	81.1
Rural	2005	Line	430	11.28	10.18	15.98	19.65	24.01	38.98
		Rate (HHs)		33.1	24.6	56.6	69.8	77.8	91.5
		Rate (people)		40.8	30.7	66.3	79.3	87.2	96.0
All	2005	Line	661	11.51	10.39	16.32	20.06	24.52	39.80
		Rate (HHs)		26.1	19.9	47.7	60.0	69.0	86.7
		Rate (people)		33.7	26.0	58.7	71.0	79.7	92.4
Urban	2009	Line	28	21.63	21.07	31.00	36.55	43.78	66.61
		Rate (HHs)		3.8	3.8	33.5	43.5	54.1	72.5
		Rate (people)		4.9	4.9	39.2	51.1	62.4	80.1
Rural	2009	Line	65	21.12	20.57	30.28	35.70	42.76	65.06
		Rate (HHs)		51.3	47.3	73.5	85.1	89.3	97.7
		Rate (people)		67.2	63.3	85.2	91.7	94.6	98.7
All	2009	Line	93	21.27	20.72	30.49	35.95	43.05	65.51
		Rate (HHs)		36.5	33.8	61.0	72.1	78.3	89.8
		Rate (people)		49.1	46.3	71.8	79.9	85.2	93.3

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Norte (RAAN), national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.79	21.47	32.21	42.94
		Rate (HHs)	272	9.6	32.9	57.6	70.6
		Rate (people)		12.0	40.8	68.1	79.7
Rural	2005	Line		10.48	19.10	28.65	38.20
		Rate (HHs)	430	35.9	76.4	89.0	95.1
		Rate (people)		43.6	82.7	93.4	97.2
All	2005	Line		10.85	19.77	29.66	39.54
		Rate (HHs)	702	27.8	62.9	79.2	87.5
		Rate (people)		34.6	70.8	86.2	92.2
Urban	2009	Line		20.21	34.32	51.48	68.64
		Rate (HHs)	44	2.5	7.4	31.1	40.8
		Rate (people)		2.4	9.8	40.8	49.5
Rural	2009	Line		19.31	32.80	49.21	65.61
		Rate (HHs)	195	16.8	55.4	82.7	94.5
		Rate (people)		24.0	64.6	89.0	97.1
All	2009	Line		19.48	33.09	49.64	66.19
		Rate (HHs)	239	13.6	44.9	71.5	82.8
		Rate (people)		19.9	54.2	79.8	88.0

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Norte (RAAN), international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	272	10.19	16.31	20.38	32.61	40.76	43.47	11.36	18.53
		Rate (HHs)		5.2	19.3	29.3	58.1	67.3	70.6	7.9	25.5
		Rate (people)		6.2	25.2	37.0	68.5	77.0	79.7	10.0	32.5
Rural	2005	Line	430	9.07	14.51	18.13	29.01	36.26	38.67	10.11	16.49
		Rate (HHs)		27.8	58.2	73.4	89.6	93.6	95.1	33.1	67.5
		Rate (people)		34.3	65.7	80.2	93.6	96.3	97.2	40.2	75.2
All	2005	Line	702	9.38	15.02	18.77	30.03	37.54	40.03	10.46	17.07
		Rate (HHs)		20.8	46.1	59.7	79.8	85.5	87.5	25.3	54.5
		Rate (people)		26.4	54.3	68.0	86.5	90.8	92.2	31.7	63.1
Urban	2009	Line	44	14.71	23.53	29.41	47.06	58.82	62.72	16.39	26.75
		Rate (HHs)		0.0	7.4	7.4	19.0	36.8	36.8	0.0	7.4
		Rate (people)		0.0	9.8	9.8	28.0	46.1	46.1	0.0	9.8
Rural	2009	Line	195	14.06	22.49	28.11	44.98	56.22	59.95	15.67	25.56
		Rate (HHs)		5.4	27.7	44.3	79.4	90.2	91.0	8.9	36.6
		Rate (people)		8.1	37.7	54.4	85.4	94.3	94.9	12.8	47.6
All	2009	Line	239	14.18	22.69	28.36	45.37	56.72	60.48	15.81	25.79
		Rate (HHs)		4.2	23.2	36.2	66.2	78.6	79.2	6.9	30.2
		Rate (people)		6.6	32.4	45.9	74.5	85.1	85.6	10.4	40.4

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Norte (RAAN), relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	272	13.04	11.77	18.48	22.72	27.76	45.07
		Rate (HHs)		6.1	5.0	17.3	27.3	35.7	66.2
		Rate (people)		7.3	6.1	23.0	34.7	43.9	76.1
Rural	2005	Line	430	11.60	10.47	16.44	20.21	24.70	40.09
		Rate (HHs)		46.7	39.1	72.0	82.3	87.1	97.0
		Rate (people)		54.9	46.7	79.1	87.5	91.6	98.6
All	2005	Line	702	12.00	10.83	17.02	20.92	25.56	41.50
		Rate (HHs)		34.1	28.5	55.1	65.2	71.2	87.5
		Rate (people)		41.4	35.2	63.2	72.6	78.1	92.2
Urban	2009	Line	44	22.94	22.34	32.88	38.77	46.44	70.65
		Rate (HHs)		2.5	2.5	7.4	7.4	13.4	36.8
		Rate (people)		2.4	2.4	9.8	9.8	17.6	46.1
Rural	2009	Line	195	21.92	21.36	31.43	37.06	44.38	67.53
		Rate (HHs)		25.5	23.6	49.5	63.9	75.4	94.5
		Rate (people)		34.8	33.1	58.7	72.1	81.7	97.1
All	2009	Line	239	22.12	21.54	31.71	37.38	44.77	68.12
		Rate (HHs)		20.5	19.0	40.3	51.6	61.8	81.9
		Rate (people)		28.7	27.3	49.4	60.3	69.5	87.4

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Sur (RAAS), national lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)			
				National lines			
				Food	100%	150%	200%
Urban	2005	Line		11.59	21.11	31.67	42.23
		Rate (HHs)	346	5.5	26.6	51.6	67.9
		Rate (people)		7.7	34.2	60.9	76.7
Rural	2005	Line		10.23	18.63	27.95	37.27
		Rate (HHs)	347	24.2	66.9	88.2	93.5
		Rate (people)		28.8	73.3	92.4	97.3
All	2005	Line		10.72	19.54	29.31	39.07
		Rate (HHs)	693	16.4	50.2	73.1	82.9
		Rate (people)		21.1	59.1	80.9	89.8
Urban	2009	Line		19.00	32.26	48.40	64.53
		Rate (HHs)	108	6.6	34.5	62.7	70.5
		Rate (people)		13.2	43.1	72.5	79.3
Rural	2009	Line		18.40	31.25	46.88	62.50
		Rate (HHs)	145	18.5	54.1	81.5	94.8
		Rate (people)		25.9	65.0	87.8	96.3
All	2009	Line		18.69	31.74	47.61	63.48
		Rate (HHs)	253	12.1	43.6	71.4	81.7
		Rate (people)		19.8	54.5	80.4	88.1

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Sur (RAAS), international 2005 and 2011 PPP lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)							
				Intl. 2005 PPP lines						Intl. 2011 PPP lines	
				$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Urban	2005	Line	346	10.02	16.03	20.04	32.07	40.09	42.74	11.17	18.23
		Rate (HHs)		2.4	13.8	23.5	52.3	64.1	68.9	4.9	20.0
		Rate (people)		3.6	19.0	29.7	61.6	74.0	77.8	7.1	26.1
Rural	2005	Line	347	8.84	14.15	17.69	28.30	35.38	37.72	9.86	16.09
		Rate (HHs)		18.7	46.1	63.0	88.9	92.8	93.7	23.9	56.0
		Rate (people)		21.9	54.1	70.0	93.0	96.6	97.4	28.3	63.8
All	2005	Line	693	9.27	14.84	18.55	29.67	37.09	39.55	10.34	16.87
		Rate (HHs)		12.0	32.7	46.6	73.7	80.9	83.4	16.0	41.1
		Rate (people)		15.2	41.3	55.3	81.6	88.3	90.3	20.6	50.0
Urban	2009	Line	108	13.82	22.12	27.65	44.24	55.29	58.96	15.41	25.14
		Rate (HHs)		2.1	12.3	23.8	57.0	67.6	69.1	2.1	20.9
		Rate (people)		4.5	19.8	32.5	66.8	76.3	77.7	4.5	30.1
Rural	2009	Line	145	13.39	21.42	26.78	42.85	53.56	57.11	14.93	24.35
		Rate (HHs)		8.8	25.9	45.6	77.9	88.3	90.9	10.9	35.0
		Rate (people)		13.6	35.6	56.8	85.0	91.9	93.8	17.1	45.3
All	2009	Line	253	13.60	21.76	27.20	43.52	54.40	58.00	15.16	24.73
		Rate (HHs)		5.2	18.6	33.9	66.7	77.2	79.1	6.2	27.4
		Rate (people)		9.2	28.0	45.1	76.2	84.3	86.1	11.0	38.0

Source and definitions: See Table 1 and text.

Figure 2 (Región Autónoma del Atlántico Sur (RAAS), relative- and percentile-based lines): Poverty lines/rates by year, region, level, and poverty line

Region	Year	Line/rate	n	Poverty lines and poverty rates (%)					
				Poorest half of people below 100% Natl. line	Percentile-based lines				
					20th	40th	50th	60th	80th
Urban	2005	Line	346	12.82	11.57	18.17	22.34	27.30	44.32
		Rate (HHs)		4.9	3.4	13.8	22.6	35.2	61.9
		Rate (people)		7.1	4.8	19.0	29.1	43.7	71.6
Rural	2005	Line	347	11.31	10.21	16.04	19.71	24.09	39.11
		Rate (HHs)		37.4	30.8	65.8	80.3	87.7	96.3
		Rate (people)		42.6	35.9	72.7	85.1	92.2	98.9
All	2005	Line	693	11.86	10.71	16.82	20.67	25.26	41.01
		Rate (HHs)		23.9	19.4	44.3	56.4	65.9	82.0
		Rate (people)		29.6	24.6	53.1	64.7	74.5	88.9
Urban	2009	Line	108	21.56	21.00	30.91	36.44	43.65	66.42
		Rate (HHs)		9.5	9.5	33.9	46.9	56.2	72.6
		Rate (people)		16.3	16.3	42.5	56.3	65.7	81.8
Rural	2009	Line	145	20.89	20.35	29.94	35.30	42.28	64.33
		Rate (HHs)		28.2	26.8	56.2	74.2	80.5	98.4
		Rate (people)		37.1	36.1	66.5	81.7	87.2	99.3
All	2009	Line	253	21.21	20.66	30.41	35.85	42.94	65.34
		Rate (HHs)		18.1	17.5	44.2	59.5	67.5	84.5
		Rate (people)		27.1	26.6	54.9	69.5	76.8	90.9

Source and definitions: See Table 1 and text.

Figure 3: Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
2,191	What fuel does the household usually use for cooking? (Non-purchased firewood; Purchased firewood, charcoal, or does not cook; Butane or propane gas, kerosene, electricity, or other)
1,705	Does the household have a land-line telephone or cellular telephones? (None; Only one cellular telephone, without a land-line telephone; Two or more cellular telephones, without a land-line telephone; Land-line telephone, regardless of any cellular telephones)
1,624	What is the main material of the floor of the residence? (Dirt, or other; Wood planks, mud bricks, or tiles and concrete; Cement bricks or tile (mosaic, ceramic, or glazed))
1,624	Does the household have a stove? (No; Yes)
1,604	What telephone service does the household have? (None; Only cellular; Land-line, regardless of any cellular telephones)
1,596	What is the highest educational level and the highest grade or year that the female head/spouse passed? (None, special education, pre-school, or adult education; First to third grade; Fourth grade; Fifth grade; Sixth grade; No female head/spouse; Seventh grade or eighth grade; Ninth grade or tenth grade; Eleventh grade or higher)
1,355	How many household members work in a business where the main type of economic activity is in agriculture, animal husbandry, hunting, fishing, and forestry, or mining? (Three or more; Two; One; None)
1,312	What type of toilet arrangement does the household have? (None, or flush toilet that drains to a river or stream; Outhouse or latrine without treatment for waste; Outhouse or latrine with treatment for waste; Flush toilet connected to cesspool or septic tank; Flush toilet connected to sewer)
1,308	How many household members work as unskilled laborers or as farmers or skilled workers in agriculture or fishing? (Three or more; Two; One; None)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
1,301	How many household members are there? (Eight or more; Seven; Six; Five; Four; Three; One or two)
1,267	How many household members are 18 years-old or younger? (Five or more; Four; Three; Two; One; None)
1,244	Are all household members ages 7 to 16 enrolled this school year in the formal educational system? (No one 7 to 16; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,236	Are all household members ages 7 to 17 enrolled this school year in the formal educational system? (No one 7 to 17; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,228	Does the household have a blender, toaster, or rice cooker? (No; Yes)
1,225	Are all household members ages 7 to 18 enrolled this school year in the formal educational system? (No one 7 to 18; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,190	How many household members are 17 years-old or younger? (Four or more; Three; Two; One; None)
1,180	Does the household have a color television with cable, video games, VCR, CD player, DVD player, or home theatre? (Does not have a color TV, regardless of anything else; Has a color TV, but nothing else; Has a color TV and at least one other thing on the list)
1,163	How many household members are 16 years-old or younger? (Four or more; Three; Two; One; None)
1,136	What is the principle means of access to the community/neighborhood where your residence is located? (Footpath, river, sea, lake, or lagoon, or other; Dirt road; Paved or cobblestone street or road)
1,126	What is the source of water for the household? (Public standpipe; River, stream, or brook, spring or artesian well, or lake or pond; Public or private well, or water truck; Piped into the yard of the residence, but not into the residence itself; Another household/neighbor/business; Piped into the residence)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
1,123	Does the household have a fan? (No; Yes)
1,120	Does the household have a refrigerator? (No; Yes)
1,115	How many household members are 13 years-old or younger? (Four or more; Three; Two; One; None)
1,113	Are all household members ages 7 to 15 enrolled this school year in the formal educational system? (No one 7 to 15; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,100	Does the household have an iron? (No; Yes)
1,095	Does the household have a blender? (No; Yes)
1,094	How many cellular telephones does the household have? (None; One; Two or more)
1,089	Are all household members ages 7 to 14 enrolled this school year in the formal educational system? (No one 7 to 14; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,080	In their main line of work, how many household members are casual/day labourers, unpaid workers, or unpaid family workers? (Two or more; One; None)
1,079	How many household members are 14 years-old or younger? (Four or more; Three; Two; One; None)
1,078	How many household members are 15 years-old or younger? (Four or more; Three; Two; One; None)
1,070	Are all household members ages 7 to 13 enrolled this school year in the formal educational system? (No one 7 to 13; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
1,059	What is the main method that the household uses to dispose of garbage? (Throwing in a field, vacant lot, water course, street, or ravine; Burying; Burning, throwing in a river, lake, lagoon, etc., using to make compost, or other; Garbage truck; Take it to an authorized dumpster; Paying someone else to haul away)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
1,030	What is the main material of the external walls of the residence? (Wood; Tin sheets, bamboo, *barul*, cane or palm leaves, scrap materials, or other; Adobe or mixed timber/bamboo/mud; Mud blocks or bricks; Wood with a concrete base, concrete and some other material, concrete slabs, fiberglass cement or asbestos, COVINTEC prefabricated panels, or drywall; Quarried stone; Cement or concrete blocks, or reinforced concrete)
1,029	What is the highest educational level and the highest grade or year that the male head/spouse passed? (None, special education, pre-school, or adult education; First to third grade; Fourth or fifth grade; Sixth grade; No male head/spouse; Seventh grade or higher)
1,007	Does the household have any color or black-and-white televisions? (None; Only black and white; One or more color TVs, regardless of the ownership of black-and-white TVs)
1,002	Does the household have a color television? (No; Yes)
985	What is the main source of lighting for the household? (None, kerosene lamp or lantern, candle, torch, or other; Electrical grid, electrical generator, solar panel, or car battery)
975	Are all household members ages 7 to 12 enrolled this school year in the formal educational system? (No one 7 to 12; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
925	Do the male and female head/spouse know how to read and write? (No; Yes)
893	How many household members are 12 years-old or younger? (Three or more; Two; One; None)
891	Are all household members ages 7 to 11 enrolled this school year in the formal educational system? (No one 7 to 11; No; Yes, but none attend a private school (with or without subsidies); Yes, and at least one attends a private school (with or without subsidies))
877	How many household members are 11 years-old or younger? (Three or more; Two; One; None)
875	How many household members work as unskilled laborers? (Two or more; One; None)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
872	In the past 12 months, has any household member worked (or is working) land of any size, as a farmer, or do any household members have land for agricultural or animal husbandry use, for commercial ends or for subsistence, be it owned, rented, borrowed, sharecropped, or squatted? If yes, has the household also raised in the past 12 months any cows, bulls, calves, steers, or heifers? (Someone works as a farmer or in animal husbandry, but no one has any cows, bulls, calves, steers, or heifers; Someone works as a farmer or in animal husbandry, and they have some cows, bulls, calves, calves, steers, or heifers; No one works as a farmer or in animal husbandry)
839	Does the household have cable television? (No; Yes)
837	Does the household have a land-line telephone? (No; Yes)
833	In the past 12 months, has any household member worked (or is working) land of any size, as a farmer, or do any household members have land for agricultural or animal husbandry use, for commercial ends or for subsistence, be it owned, rented, borrowed, sharecropped, or squatted? If yes, has the household also raised in the past 12 months any cows, bulls, calves, steers, or heifers, pigs, or horses, donkeys, or mules? (Someone works as a farmer or in animal husbandry, but no one has any cows, bulls, calves, steers, or heifers, pigs, or horses, donkeys, or mules; Someone works as a farmer or in animal husbandry, and they have some cows, bulls, calves, steers, or heifers, pigs, or horses, donkeys, or mules; No one works as a farmer or in animal husbandry)
820	Are all household members ages 7 to 16 enrolled this school year in the formal educational system? (No one 7 to 16; No; Yes)
817	In the past 12 months, has any household member worked (or is working) land of any size, as a farmer, or do any household members have land for agricultural or animal husbandry use, for commercial ends or for subsistence, be it owned, rented, borrowed, sharecropped, or squatted? If yes, has the household also raised in the past 12 months any horses, donkeys, or mules? (Someone works as a farmer or in animal husbandry, but no one has any horses, donkeys, or mules; Someone works as a farmer or in animal husbandry, and they have some horses, donkeys, or mules; No one works as a farmer or in animal husbandry)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
816	Are all household members ages 7 to 17 enrolled this school year in the formal educational system? (No one 7 to 17; No; Yes)
816	In the past 12 months, has any household member worked (or is working) land of any size, as a farmer, or do any household members have land for agricultural or animal husbandry use, for commercial ends or for subsistence, be it owned, rented, borrowed, sharecropped, or squatted? If yes, has the household also raised in the past 12 months any pigs? (Someone works as a farmer or in animal husbandry, but no one has any pigs; Someone works as a farmer or in animal husbandry, and they have some pigs; No one works as a farmer or in animal husbandry)
815	In the past 12 months, has any household member worked (or is working) land of any size, as a farmer, or do any household members have land for agricultural or animal husbandry use, for commercial ends or for subsistence, be it owned, rented, borrowed, sharecropped, or squatted? (Yes; No)
797	Are all household members ages 7 to 18 enrolled this school year in the formal educational system? (No one 7 to 18; No; Yes)
768	In the last seven days, what was the main occupation of the male head/spouse? (Farmer and skilled worker in agriculture and fishing; Unskilled laborer; Does not work; There is no male head/spouse; Service worker and salesman in stores and markets, or manager, operator, and craftsman in manufacturing; Lawmaker, policymaker, and executive in public and private administration, professional, scientist, and intellectual, technician and para-professional, clerk and other office worker, armed forces, or factory worker)
746	Does the household have a mill? (No; Yes)
735	Does the household have a radio, radio/tape player, or stereo system? (None; Radio/tape player without stereo system, regardless of ownership of radio(s); Only radio(s); Stereo system, regardless of ownership of radio(s) or radio/tape players))

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
720	What is the main type of economic activity where where the male head/spouse worked in the past seven days? (Agriculture, animal husbandry, hunting, fishing, and forestry, mining; Does not work, domestic service, or other activities not otherwise specified; There is no male head/spouse; Manufacturing, electricity, gas, water, and construction, retail and wholesale trade, repair of automobiles and motorcycles, personal effects, and household appliances, food service and lodging, logistics, storage, and communcations, finance, real estate and rental, public administration, defense, and Social Security, education, health care, social work, and other community service and personal service, and international organizations)
714	What is the main type of economic activity where where the female head/spouse worked in the past seven days? (Does not work,or other activities not otherwise specified; Manufacturing, food service and lodging, health care, social work, and other community service and personal service; There is no female head/spouse; Eelectricity, gas, water, and construction, retail and wholesale trade, agriculture, animal husbandry, hunting, fishing, and forestry, mining repair of automobiles and motorcycles, personal effects, and household appliances, logistics, storage, and communcations, finance, real estate and rental, public administration, defense, and Social Security, education, international organizations, and domestic service)
698	Does the female head/spouse know how to read and write? (No; There is no female head/spouse; Yes)
691	Are all household members ages 7 to 15 enrolled this school year in the formal educational system? (No one 7 to 15; No; Yes)
628	Do any household members go to a private school (subsidized or non-subsidized)? (No; Yes)
621	Are all household members ages 7 to 14 enrolled this school year in the formal educational system? (No one 7 to 14; No; Yes)
619	How many household members are managers, operators, or craftspeople in manufacturing, or factory workers? (Two or more; One; None)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
617	Are all household members ages 7 to 13 enrolled this school year in the formal educational system? (No one 7 to 13; No; Yes)
594	How many household members are farmers or skilled workers in agriculture or fishing? (One or more; None)
589	How many household members are 6 years-old or younger? (Two or more; One; None)
561	In the last seven days, what was the main occupation of the female head/spouse? (Does not work; Farmer and skilled worker in agriculture and fishing; Unskilled laborer; Service worker and saleswoman in stores and markets, or manager, operator, and craftswomen in manufacturing; There is no female head/spouse; Armed forces, lawmaker, policymaker, and executive in public and private administration, professional, scientist, and intellectual, technician and para-professional, clerk and other office worker, or factory worker)
557	Does the household have a stereo system? (No; Yes)
543	Are all household members ages 7 to 12 enrolled this school year in the formal educational system? (No one 7 to 12; No; Yes)
542	How many household members are employed as professionals, scientists, and intellectuals, technicians and para-professionals, clerks and other office workers, or lawmakers, and policymakers, and executives in public and private administration? (None; One or more)
534	Does the household have a microwave oven? (No; Sí)
507	In the past seven days, what was the female head/spouse in her main line of work? (Does not work, casual laborer, member of a cooperative, unpaid worker or unpaid family worker, or other; Self-employed, or business owner with employees; There is no female head/spouse; Wage or salary worker)
489	Are all household members ages 7 to 11 enrolled this school year in the formal educational system? (No one 7 to 11; No; Yes)
448	Does the household have a vehicle? (No; Sí)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
437	In their main line of work, how many household members are wage or salary workers or as business owners with employees? (None; One; Two or more)
434	Does the household have a CD player, DVD player, or home theatre? (No; Yes)
434	In the past seven days, what was the male head/spouse in his main line of work? (Casual laborer, member of a cooperative, unpaid worker or unpaid family worker, or other; Self-employed; Does not work; There is no male head/spouse; Wage or salary worker, or business owner with employees)
422	How many rooms does the household have for its use (excluding kitchen, bathrooms, hallways, and garages)? (One; Two; Three or more)
418	Does the household have a personal computer? (No; Yes)
398	In their main line of work in the past seven days, how many household members were wage or salary workers? (None; One; Two or more)
389	How many rooms does the household use only for sleeping? (None; One; Two or more)
386	Does the male head/spouse know how to read and write? (No; Yes; There is no male head/spouse)
362	Does the household have a rice cooker? (No; Sí)
325	What is the tenancy status of the household in the residence? (Owned free-and-clear without title, or other; Given as a gift or lent, or given as payment for services; Owned free-and-clear with title; Squatted; Rented, or owned with mortgage outstanding)
267	Did the female head/spouse work in the past week as an employee or in her own family business? (No; Yes; There is no female head/spouse)
257	Has the household been a beneficiary of the government school-backpack program (uniforms, shoes, school supplies, learning materials)? (Yes; No)
254	Does the household have a radio? (Yes; No)
244	Does the household have a motorcycle? (No; Yes)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
242	How many household members worked in the past week as employees or in their own family business? (Four or more; Three; Two; One; None)
214	How many household members work in a business where the main type of economic activity is in retail and wholesale trade, repair of automobiles and motorcycles, personal effects, and household appliances? (None; One or more)
200	Does the household have a toaster? (No; Yes)
180	Has the household been a beneficiary of the government-run public-health campaigns (vaccination, removal of stagnant pools, fumigation, etc.)? (No; Yes)
165	In their main line of work, how many household members are self-employed? (Two or more; One; None)
163	Has the household been a beneficiary of the government-run school snack program? (Yes; No)
147	What is the main material of the roof of the residence? (Straw, palm leaves, and the like, scrap materials, cement or mud shingles, or other; Metal sheets, fiberglass cement or asbestos, or reinforced concrete slab)
142	How many household members work in a business where the main type of economic activity is in finance, real estate and rentals, public administration, defense, and Social Security, education, health care, social work, and other community service and personal service? (None; One or more)
134	What is the marital status of the female head/spouse? (Cohabiting; Married; Widowed; Separated; There is no female head/spouse; Divorced, or single, never married)
105	How many household members are service workers or salespeople in stores and markets? (None; One or more)
105	Does the household have a sewing machine? (No; Yes)
101	What is the structure of household headship? (Both male and female heads/spouses; Female head/spouse only; Male head/spouse only)

Figure 3 (cont.): Poverty indicators by uncertainty coefficient

Uncertainty coefficient	Indicator (Answers ordered starting with those most strongly linked with higher poverty likelihoods)
99	What is the marital status of the male head/spouse? (Cohabiting; Married; There is no male head/spouse; Widowed, or single, never married; Separated, or divorced)
98	Does the household have a video-game machine? (No; Yes)
83	What type of residence does the household live in? (observe) (Villa, apartment or flat, room in a roominghouse, hut or shack, improvised shelter, or business locale used as a residence (office, store, etc.); Detached house)
83	Does the household have a bicycle, boat, horse, donkey, mule, motorcycle, or automobile? (No; Yes)
74	Does the household have a radio/tape player? (No; Sí)
68	Does the household have a VCR? (No; Yes)
50	Does the household have a black and white television? (Yes; No)
34	Did the male head/spouse work in the past week as an employee or in his own family business? (No; Yes; There is no male head/spouse)
29	Does the household have a boat? (Yes; No)
23	Does the household have a bicycle? (No; Yes)
17	Does the household have a bicycle or boat? (No; Yes)
15	How many household members work in a business where the main type of economic activity is in construction, manufacturing, or electricity, gas, and water? (None; One or more)
0.2	Has the household been a beneficiary of the government program (ENABAS) that sells staple grains from neighborhood posts? (No; Yes)
0.0	How many household members know how to read and write? (None; One or more)

Source: 2009 EMNV and 100% of the national poverty line

Tables for
100% of the National Poverty Line

(and Tables Pertaining to All Poverty Lines)

Figure 4 (100% 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	97.6
10–14	93.7
15–19	87.6
20–24	71.6
25–29	67.7
30–34	59.3
35–39	40.4
40–44	21.3
45–49	14.6
50–54	6.7
55–59	3.1
60–64	1.3
65–69	0.2
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 5 (100% of the national line): Derivation of estimated poverty likelihoods associated with scores

Score	Households in range and < poverty line		All households in range		Poverty likelihood (%)
0–4	646	÷	646	=	100.0
5–9	1,853	÷	1,898	=	97.6
10–14	2,696	÷	2,878	=	93.7
15–19	5,354	÷	6,111	=	87.6
20–24	4,687	÷	6,546	=	71.6
25–29	4,814	÷	7,108	=	67.7
30–34	4,507	÷	7,607	=	59.3
35–39	3,394	÷	8,407	=	40.4
40–44	1,980	÷	9,278	=	21.3
45–49	1,233	÷	8,454	=	14.6
50–54	570	÷	8,526	=	6.7
55–59	233	÷	7,507	=	3.1
60–64	112	÷	8,507	=	1.3
65–69	9	÷	5,755	=	0.2
70–74	0	÷	4,528	=	0.0
75–79	0	÷	3,562	=	0.0
80–84	0	÷	1,495	=	0.0
85–89	0	÷	907	=	0.0
90–94	0	÷	237	=	0.0
95–100	0	÷	43	=	0.0

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

Figure 7 (100% of the national line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	–2.4	1.2	1.2	1.2
10–14	–1.8	1.5	1.6	2.1
15–19	+4.5	2.1	2.5	3.4
20–24	–6.9	4.6	4.7	5.2
25–29	–6.9	4.6	4.8	5.3
30–34	+6.4	2.6	3.0	4.0
35–39	+1.7	2.5	3.0	3.9
40–44	–17.0	9.8	10.0	10.4
45–49	+5.0	1.4	1.7	2.1
50–54	+0.4	1.1	1.3	1.8
55–59	–1.7	1.5	1.6	1.9
60–64	–3.5	2.4	2.6	2.9
65–69	–0.7	0.6	0.7	0.9
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 8 (100% of the national line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.1	61.6	75.1	92.3
4	–1.0	33.3	42.1	55.8
8	–1.8	23.6	28.3	39.6
16	–1.4	17.3	19.8	28.8
32	–1.7	12.3	14.6	18.8
64	–1.8	8.9	10.4	13.7
128	–1.9	6.4	7.5	10.1
256	–1.7	4.4	5.2	6.7
512	–1.7	3.0	3.6	4.7
1,024	–1.7	2.1	2.5	3.1
2,048	–1.7	1.5	1.7	2.5
4,096	–1.7	1.1	1.2	1.7
8,192	–1.7	0.8	0.9	1.2
16,384	–1.7	0.5	0.6	0.8

Figure 9 (National lines): Average differences between estimates of poverty rates for a group of households at a point in time, precision, and the α factor, scorecard applied to the 2009 validation sample

	Poverty lines			
		National		
	Food	**100%**	**150%**	**200%**
Error (estimate minus observed value)	–0.6	–1.7	–4.0	–3.2
Precision of difference	0.4	0.5	0.5	0.5
Alpha factor for precision	1.01	0.88	0.80	0.86

Results pertain to the 2009 scorecard applied to the 2009 validation sample.

Differences between estimates and observed values are displayed in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Differences and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Figure 9 (International 2005 and 2011 PPP lines): Average differences between estimates of poverty rates for a group of households at a point in time, precision, and the α factor, scorecard applied to the 2009 validation sample

	Poverty lines							
	Intl. 2005 PPP						Intl. 2011 PPP	
	$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Error (estimate minus observed value)	+0.5	–1.4	–1.4	–3.5	–3.7	–3.0	+1.1	–2.4
Precision of difference	0.2	0.5	0.5	0.6	0.5	0.5	0.3	0.5
Alpha factor for precision	1.10	0.98	0.90	0.86	0.79	0.78	1.05	0.89

Results pertain to the 2009 scorecard applied to the 2009 validation sample.

Differences between estimates and observed values are displayed in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Differences and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Figure 9 (Relative- and percentile-based lines): Average differences between estimates of poverty rates for a group of households at a point in time, precision, and the α factor, scorecard applied to the 2009 validation sample

	Poverty lines					
	Poorest half of people below 100% Natl. line	Percentile-based lines				
		20th	40th	50th	60th	80th
Error (estimate minus observed value)	–3.7	–2.7	–2.2	–4.1	–5.4	–4.1
Precision of difference	0.4	0.4	0.5	0.5	0.6	0.5
Alpha factor for precision	0.94	0.94	0.85	0.87	0.87	0.86

Results pertain to the 2009 scorecard applied to the 2009 validation sample.

Differences between estimates and observed values are displayed in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Differences and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha 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 lines): Average differences between estimates of changes of poverty rates between independent, representative samples from a population at two points in time and the true change, precision, and the α factor, scorecard applied to the 2009 validation sample and to 2005

	Poverty lines			
		National		
	Food	**100%**	**150%**	**200%**
Error (estimate minus observed value)	+1.1	+3.1	+12.3	+12.5
Precision of difference	0.5	0.7	0.8	0.9
Alpha factor for precision	0.89	0.82	0.88	1.06

New 2009 scorecard applied to the 2009 validation sample (baseline) and 2005 validation sample (follow-up).
Differences between estimates and observed values are displayed in units of percentage points.
Precision is measured as 90-percent confidence intervals in units of ± percentage points.
Differences and precision estimated from 1,000 bootstraps with n = 16,384.
Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Figure 10 (International 2005 and 2011 PPP lines): Average differences between estimates of changes of poverty rates between independent, representative samples from a population at two points in time and the true change, precision, and the α factor, scorecard applied to the 2009 validation sample and to 2005

	Poverty lines							
	Intl. 2005 PPP						Intl. 2011 PPP	
	$1.25	**$2.00**	**$2.50**	**$4.00**	**$5.00**	**$8.44**	**$1.90**	**$3.10**
Error (estimate minus observed value)	–2.8	–3.3	–2.6	+5.4	+8.6	+7.8	–3.9	–1.9
Precision of difference	0.4	0.6	0.7	0.8	0.8	0.8	0.4	0.6
Alpha factor for precision	1.14	0.91	0.89	0.88	0.94	0.98	1.10	0.85

New 2009 scorecard applied to the 2009 validation sample (baseline) and 2005 validation sample (follow-up).

Differences between estimates and observed values are displayed in units of percentage points.

Precision is measured as 90-percent confidence intervals in units of ± percentage points.

Differences and precision estimated from 1,000 bootstraps with n = 16,384.

Alpha is estimated from 1,000 bootstrap samples of n = 256, 512, 1,024, 2,048, 4,096, 8,192, and 16,384.

Figure 11 (All poverty lines): Possible targeting outcomes

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 12 (100% of the national line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	32.4	0.0	67.0	67.6	–96.1
<=9	2.5	30.5	0.0	67.0	69.5	–84.6
<=14	5.2	27.8	0.2	66.7	71.9	–67.9
<=19	10.2	22.8	1.3	65.6	75.9	–34.2
<=24	15.3	17.7	2.8	64.2	79.5	+1.0
<=29	20.3	12.7	4.9	62.1	82.4	+37.7
<=34	24.2	8.8	8.6	58.4	82.6	+72.5
<=39	27.7	5.4	13.5	53.4	81.1	+59.1
<=44	30.7	2.4	19.8	47.1	77.8	+40.0
<=49	31.7	1.4	27.3	39.7	71.4	+17.5
<=54	32.4	0.6	35.0	31.9	64.3	–6.1
<=59	32.8	0.3	42.2	24.7	57.5	–27.7
<=64	33.0	0.1	50.5	16.5	49.5	–52.8
<=69	33.0	0.0	56.2	10.8	43.8	–70.0
<=74	33.0	0.0	60.7	6.2	39.3	–83.7
<=79	33.0	0.0	64.3	2.7	35.7	–94.5
<=84	33.0	0.0	65.8	1.2	34.2	–99.0
<=89	33.0	0.0	66.7	0.3	33.3	–101.8
<=94	33.0	0.0	66.9	0.0	33.1	–102.5
<=100	33.0	0.0	67.0	0.0	33.0	–102.6

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

Figure 13 (100% of the national line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	2.0	Only poor targeted
<=9	2.5	100.0	7.7	Only poor targeted
<=14	5.4	95.9	15.7	23.3:1
<=19	11.5	88.6	30.9	7.8:1
<=24	18.1	84.7	46.3	5.5:1
<=29	25.2	80.7	61.5	4.2:1
<=34	32.8	73.8	73.2	2.8:1
<=39	41.2	67.2	83.8	2.0:1
<=44	50.5	60.7	92.8	1.5:1
<=49	58.9	53.8	95.9	1.2:1
<=54	67.5	48.0	98.1	0.9:1
<=59	75.0	43.7	99.1	0.8:1
<=64	83.5	39.5	99.8	0.7:1
<=69	89.2	37.0	100.0	0.6:1
<=74	93.8	35.2	100.0	0.5:1
<=79	97.3	34.0	100.0	0.5:1
<=84	98.8	33.4	100.0	0.5:1
<=89	99.7	33.1	100.0	0.5:1
<=94	100.0	33.1	100.0	0.5:1
<=100	100.0	33.0	100.0	0.5:1

Tables for the

Food Poverty Line

Figure 4 (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	80.5
5–9	61.8
10–14	52.1
15–19	43.4
20–24	21.4
25–29	14.2
30–34	11.1
35–39	4.1
40–44	2.9
45–49	0.4
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 7 (Food line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–13.1	8.1	8.3	8.7
5–9	–14.9	9.4	9.7	10.4
10–14	–7.2	5.7	6.0	6.4
15–19	+2.2	2.7	3.3	4.6
20–24	–1.7	2.4	2.9	3.7
25–29	–2.6	2.4	2.7	3.3
30–34	+3.3	1.5	1.7	2.3
35–39	+0.3	1.0	1.2	1.4
40–44	+0.6	0.6	0.7	0.9
45–49	+0.4	0.0	0.0	0.0
50–54	–0.1	0.1	0.1	0.1
55–59	–1.5	1.1	1.2	1.4
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 8 (Food line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.7	50.0	61.0	78.8
4	–0.4	24.7	29.6	40.6
8	–0.5	17.3	21.8	28.6
16	–0.4	12.3	14.5	20.3
32	–0.4	8.5	9.8	12.4
64	–0.4	5.8	7.0	8.9
128	–0.5	4.3	5.1	7.0
256	–0.5	3.0	3.6	4.9
512	–0.5	2.1	2.5	3.2
1,024	–0.5	1.5	1.8	2.4
2,048	–0.6	1.0	1.3	1.6
4,096	–0.6	0.8	0.9	1.1
8,192	–0.6	0.5	0.6	0.8
16,384	–0.6	0.4	0.5	0.6

Figure 12 (Food line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	9.3	0.1	90.0	90.6	–87.7
<=9	1.9	8.0	0.7	89.4	91.3	–55.4
<=14	3.6	6.3	1.8	88.3	91.9	–8.9
<=19	6.1	3.8	5.4	84.7	90.8	+45.2
<=24	7.6	2.3	10.5	79.6	87.3	–5.6
<=29	8.7	1.2	16.5	73.6	82.2	–66.9
<=34	9.2	0.7	23.6	66.5	75.7	–138.1
<=39	9.5	0.4	31.7	58.4	67.9	–220.0
<=44	9.8	0.1	40.7	49.4	59.2	–310.8
<=49	9.8	0.1	49.1	41.0	50.8	–396.2
<=54	9.8	0.1	57.6	32.5	42.3	–482.1
<=59	9.9	0.0	65.1	25.0	34.9	–557.2
<=64	9.9	0.0	73.6	16.5	26.4	–643.1
<=69	9.9	0.0	79.3	10.8	20.7	–701.2
<=74	9.9	0.0	83.9	6.2	16.1	–746.9
<=79	9.9	0.0	87.4	2.7	12.6	–782.9
<=84	9.9	0.0	88.9	1.2	11.1	–798.0
<=89	9.9	0.0	89.8	0.3	10.2	–807.2
<=94	9.9	0.0	90.1	0.0	9.9	–809.6
<=100	9.9	0.0	90.1	0.0	9.9	–810.0

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

Figure 13 (Food line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	88.4	5.8	7.6:1
<=9	2.5	73.5	18.9	2.8:1
<=14	5.4	66.4	36.3	2.0:1
<=19	11.5	53.0	61.7	1.1:1
<=24	18.1	42.2	77.0	0.7:1
<=29	25.2	34.4	87.5	0.5:1
<=34	32.8	28.1	93.1	0.4:1
<=39	41.2	23.1	96.2	0.3:1
<=44	50.5	19.4	99.1	0.2:1
<=49	58.9	16.6	99.1	0.2:1
<=54	67.5	14.6	99.2	0.2:1
<=59	75.0	13.2	100.0	0.2:1
<=64	83.5	11.9	100.0	0.1:1
<=69	89.2	11.1	100.0	0.1:1
<=74	93.8	10.6	100.0	0.1:1
<=79	97.3	10.2	100.0	0.1:1
<=84	98.8	10.0	100.0	0.1:1
<=89	99.7	9.9	100.0	0.1:1
<=94	100.0	9.9	100.0	0.1:1
<=100	100.0	9.9	100.0	0.1:1

Tables for

150% of the National Poverty Line

Figure 4 (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	100.0
15–19	98.7
20–24	98.3
25–29	94.4
30–34	90.6
35–39	81.5
40–44	62.6
45–49	54.3
50–54	43.4
55–59	27.8
60–64	16.1
65–69	7.6
70–74	6.3
75–79	0.2
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 (150% of the national line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	0.0	0.0	0.0	0.0
15–19	0.0	0.5	0.6	0.8
20–24	+2.8	1.1	1.3	1.8
25–29	+2.9	1.5	1.7	2.3
30–34	–4.3	2.7	2.8	2.9
35–39	–4.5	3.0	3.2	3.6
40–44	–14.9	8.4	8.6	9.0
45–49	–11.6	7.1	7.4	7.9
50–54	–15.5	9.1	9.4	9.9
55–59	+4.8	2.4	3.0	4.2
60–64	+1.6	1.9	2.3	3.0
65–69	–11.8	7.3	7.5	8.0
70–74	+0.4	1.7	2.1	2.7
75–79	+0.1	0.1	0.1	0.2
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 8 (150% of the national line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.7	59.6	82.7	95.3
4	–3.3	34.1	41.8	55.3
8	–3.6	22.1	25.9	35.3
16	–3.8	15.0	18.5	26.6
32	–4.0	11.0	13.5	18.9
64	–4.1	7.9	9.5	12.1
128	–4.0	5.8	6.9	8.7
256	–4.0	4.0	4.8	6.2
512	–4.0	2.9	3.4	4.5
1,024	–4.0	2.0	2.3	3.1
2,048	–4.0	1.4	1.7	2.2
4,096	–4.0	1.0	1.2	1.5
8,192	–4.0	0.7	0.9	1.2
16,384	–4.0	0.5	0.6	0.8

Figure 12 (150% of the national line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	57.9	0.0	41.4	42.1	–97.8
<=9	2.5	56.0	0.0	41.4	44.0	–91.3
<=14	5.4	53.1	0.0	41.4	46.9	–81.5
<=19	11.4	47.1	0.1	41.3	52.8	–60.8
<=24	17.7	40.9	0.4	41.0	58.7	–39.0
<=29	24.1	34.4	1.1	40.4	64.5	–15.8
<=34	31.2	27.3	1.6	39.9	71.1	+9.4
<=39	38.2	20.3	3.0	38.5	76.7	+35.6
<=44	45.0	13.6	5.5	35.9	80.9	+63.0
<=49	49.9	8.7	9.1	32.4	82.3	+84.5
<=54	54.3	4.3	13.2	28.3	82.5	+77.5
<=59	56.2	2.3	18.7	22.7	78.9	+68.0
<=64	57.5	1.1	26.0	15.4	72.9	+55.6
<=69	58.3	0.3	30.9	10.5	68.8	+47.2
<=74	58.5	0.0	35.2	6.2	64.8	+39.8
<=79	58.6	0.0	38.8	2.7	61.2	+33.8
<=84	58.6	0.0	40.3	1.2	59.7	+31.2
<=89	58.6	0.0	41.2	0.3	58.8	+29.7
<=94	58.6	0.0	41.4	0.0	58.6	+29.3
<=100	58.6	0.0	41.4	0.0	58.6	+29.2

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

Figure 13 (150% of the national line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	1.1	Only poor targeted
<=9	2.5	100.0	4.3	Only poor targeted
<=14	5.4	100.0	9.3	Only poor targeted
<=19	11.5	99.1	19.5	112.9:1
<=24	18.1	97.7	30.2	42.4:1
<=29	25.2	95.8	41.2	22.9:1
<=34	32.8	95.3	53.4	20.1:1
<=39	41.2	92.8	65.3	12.8:1
<=44	50.5	89.1	76.8	8.1:1
<=49	58.9	84.6	85.2	5.5:1
<=54	67.5	80.4	92.7	4.1:1
<=59	75.0	75.0	96.0	3.0:1
<=64	83.5	68.8	98.1	2.2:1
<=69	89.2	65.3	99.5	1.9:1
<=74	93.8	62.4	100.0	1.7:1
<=79	97.3	60.2	100.0	1.5:1
<=84	98.8	59.3	100.0	1.5:1
<=89	99.7	58.7	100.0	1.4:1
<=94	100.0	58.6	100.0	1.4:1
<=100	100.0	58.6	100.0	1.4:1

Tables for

200% of the National Poverty Line

Figure 4 (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	100.0
15–19	100.0
20–24	99.9
25–29	99.4
30–34	98.4
35–39	96.9
40–44	89.0
45–49	80.3
50–54	70.2
55–59	55.7
60–64	41.7
65–69	28.1
70–74	12.0
75–79	5.8
80–84	4.6
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 (200% of the national line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0
20–24	+0.6	0.4	0.4	0.6
25–29	–0.6	0.3	0.3	0.3
30–34	+0.4	0.8	1.0	1.3
35–39	–0.2	0.8	0.9	1.2
40–44	–4.2	2.7	2.8	3.0
45–49	–5.8	3.7	3.9	4.2
50–54	–12.8	7.3	7.5	7.9
55–59	–1.7	3.0	3.6	4.8
60–64	–0.3	2.6	3.2	4.0
65–69	–6.0	4.5	4.8	5.5
70–74	–15.9	9.9	10.2	10.9
75–79	–6.9	4.7	4.9	5.5
80–84	+4.3	0.3	0.3	0.4
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 8 (200% of the national line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.6	64.2	76.1	95.6
4	–3.2	30.2	37.3	54.0
8	–3.3	21.0	25.3	35.0
16	–3.0	15.0	18.1	24.0
32	–3.3	10.4	12.1	15.7
64	–3.3	7.8	9.3	12.4
128	–3.3	5.5	6.4	8.6
256	–3.3	4.0	4.8	5.8
512	–3.2	2.6	3.2	3.9
1,024	–3.3	1.9	2.3	2.9
2,048	–3.2	1.3	1.5	2.1
4,096	–3.2	0.9	1.0	1.4
8,192	–3.2	0.7	0.8	1.1
16,384	–3.2	0.5	0.6	0.7

Figure 12 (200% of the national line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	72.9	0.0	26.5	27.1	–98.2
<=9	2.5	71.0	0.0	26.5	29.0	–93.1
<=14	5.4	68.1	0.0	26.5	31.9	–85.3
<=19	11.5	62.0	0.0	26.5	38.0	–68.6
<=24	18.0	55.5	0.1	26.4	44.5	–50.9
<=29	25.1	48.4	0.1	26.4	51.5	–31.6
<=34	32.6	40.9	0.2	26.3	58.9	–11.0
<=39	40.7	32.8	0.5	26.0	66.7	+11.4
<=44	49.2	24.3	1.3	25.2	74.4	+35.6
<=49	56.2	17.4	2.8	23.7	79.9	+56.6
<=54	62.6	10.9	4.8	21.6	84.3	+76.9
<=59	66.9	6.6	8.1	18.4	85.3	+89.0
<=64	70.5	3.0	13.0	13.5	84.0	+82.3
<=69	72.2	1.3	17.0	9.5	81.7	+76.9
<=74	73.1	0.4	20.7	5.8	78.9	+71.9
<=79	73.5	0.0	23.8	2.7	76.1	+67.6
<=84	73.5	0.0	25.3	1.2	74.7	+65.6
<=89	73.5	0.0	26.2	0.3	73.8	+64.4
<=94	73.5	0.0	26.4	0.0	73.6	+64.0
<=100	73.5	0.0	26.5	0.0	73.5	+64.0

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

Figure 13 (200% of the national line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	0.9	Only poor targeted
<=9	2.5	100.0	3.5	Only poor targeted
<=14	5.4	100.0	7.4	Only poor targeted
<=19	11.5	100.0	15.7	Only poor targeted
<=24	18.1	99.7	24.5	328.5:1
<=29	25.2	99.7	34.2	382.1:1
<=34	32.8	99.5	44.4	185.0:1
<=39	41.2	98.8	55.4	83.3:1
<=44	50.5	97.5	67.0	39.1:1
<=49	58.9	95.3	76.4	20.2:1
<=54	67.5	92.8	85.2	12.9:1
<=59	75.0	89.2	91.0	8.3:1
<=64	83.5	84.4	95.9	5.4:1
<=69	89.2	81.0	98.3	4.3:1
<=74	93.8	77.9	99.4	3.5:1
<=79	97.3	75.5	100.0	3.1:1
<=84	98.8	74.4	100.0	2.9:1
<=89	99.7	73.7	100.0	2.8:1
<=94	100.0	73.5	100.0	2.8:1
<=100	100.0	73.5	100.0	2.8:1

Tables for

the $1.25/day 2005 PPP Poverty Line

Figure 4 ($1.25/day 2005 PPP): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	66.8
5–9	37.7
10–14	28.4
15–19	13.7
20–24	5.7
25–29	2.7
30–34	1.1
35–39	0.8
40–44	0.4
45–49	0.0
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 7 ($1.25/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+20.3	9.0	10.4	13.9
5–9	–2.4	5.1	6.1	7.8
10–14	+4.7	3.3	4.0	5.3
15–19	–0.8	2.1	2.4	3.3
20–24	+2.5	0.9	1.0	1.3
25–29	0.0	0.8	1.0	1.3
30–34	0.0	0.5	0.6	0.7
35–39	+0.8	0.0	0.0	0.0
40–44	+0.4	0.0	0.0	0.0
45–49	0.0	0.0	0.0	0.0
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 8 ($1.25/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.2	6.8	14.2	62.0
4	+0.5	17.2	23.1	33.6
8	+0.7	11.5	14.4	20.0
16	+0.4	8.0	9.5	13.7
32	+0.5	5.6	6.9	9.2
64	+0.5	3.9	4.7	6.3
128	+0.5	2.8	3.3	4.1
256	+0.5	2.1	2.4	3.4
512	+0.5	1.4	1.6	2.1
1,024	+0.5	1.0	1.1	1.5
2,048	+0.5	0.7	0.8	1.0
4,096	+0.5	0.5	0.6	0.7
8,192	+0.5	0.3	0.4	0.6
16,384	+0.5	0.2	0.3	0.4

Figure 12 ($1.25/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.3	2.9	0.4	96.5	96.7	–71.0
<=9	1.0	2.2	1.6	95.2	96.2	+10.4
<=14	1.7	1.4	3.7	93.2	94.9	–15.8
<=19	2.6	0.6	8.9	87.9	90.5	–181.2
<=24	2.9	0.3	15.2	81.6	84.5	–379.4
<=29	3.1	0.1	22.1	74.7	77.8	–596.5
<=34	3.2	0.0	29.6	67.2	70.4	–833.1
<=39	3.2	0.0	38.0	58.8	62.0	–1,097.9
<=44	3.2	0.0	47.3	49.5	52.7	–1,390.2
<=49	3.2	0.0	55.8	41.1	44.2	–1,656.6
<=54	3.2	0.0	64.3	32.5	35.7	–1,925.1
<=59	3.2	0.0	71.8	25.0	28.2	–2,161.6
<=64	3.2	0.0	80.3	16.5	19.7	–2,429.6
<=69	3.2	0.0	86.1	10.8	13.9	–2,610.9
<=74	3.2	0.0	90.6	6.2	9.4	–2,753.6
<=79	3.2	0.0	94.1	2.7	5.9	–2,865.8
<=84	3.2	0.0	95.6	1.2	4.4	–2,912.9
<=89	3.2	0.0	96.5	0.3	3.5	–2,941.5
<=94	3.2	0.0	96.8	0.0	3.2	–2,948.9
<=100	3.2	0.0	96.8	0.0	3.2	–2,950.3

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

Figure 13 ($1.25/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	42.7	8.7	0.7:1
<=9	2.5	37.8	30.3	0.6:1
<=14	5.4	32.2	55.0	0.5:1
<=19	11.5	22.6	82.1	0.3:1
<=24	18.1	15.8	90.2	0.2:1
<=29	25.2	12.2	97.0	0.1:1
<=34	32.8	9.7	100.0	0.1:1
<=39	41.2	7.7	100.0	0.1:1
<=44	50.5	6.3	100.0	0.1:1
<=49	58.9	5.4	100.0	0.1:1
<=54	67.5	4.7	100.0	0.0:1
<=59	75.0	4.2	100.0	0.0:1
<=64	83.5	3.8	100.0	0.0:1
<=69	89.2	3.6	100.0	0.0:1
<=74	93.8	3.4	100.0	0.0:1
<=79	97.3	3.3	100.0	0.0:1
<=84	98.8	3.2	100.0	0.0:1
<=89	99.7	3.2	100.0	0.0:1
<=94	100.0	3.2	100.0	0.0:1
<=100	100.0	3.2	100.0	0.0:1

Tables for

the $2.00/day 2005 PPP Poverty Line

Figure 4 ($2.00/day 2005 PPP): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	80.5
5–9	75.2
10–14	65.7
15–19	58.6
20–24	38.3
25–29	27.2
30–34	21.3
35–39	8.1
40–44	3.5
45–49	0.6
50–54	0.1
55–59	0.1
60–64	0.1
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 7 ($2.00/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–14.4	8.6	8.8	9.1
5–9	–18.2	10.1	10.2	10.5
10–14	–0.8	4.0	4.5	5.9
15–19	+1.7	2.9	3.4	4.6
20–24	+4.6	2.6	3.1	3.9
25–29	–8.9	5.8	6.1	6.4
30–34	+3.3	2.1	2.5	3.4
35–39	–1.6	1.5	1.7	2.2
40–44	–6.3	3.9	4.1	4.4
45–49	+0.5	0.0	0.1	0.1
50–54	–1.6	1.1	1.1	1.3
55–59	–2.4	1.6	1.7	1.9
60–64	+0.1	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 8 ($2.00/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.3	55.5	68.7	81.1
4	–1.3	27.9	34.7	49.7
8	–1.6	21.4	25.1	31.1
16	–1.2	14.8	17.8	22.9
32	–1.2	10.0	12.0	16.5
64	–1.3	7.2	8.5	11.3
128	–1.4	5.2	6.1	8.0
256	–1.3	3.6	4.4	5.7
512	–1.4	2.5	3.0	3.9
1,024	–1.4	1.7	2.1	2.7
2,048	–1.4	1.2	1.5	2.0
4,096	–1.4	0.9	1.0	1.4
8,192	–1.4	0.6	0.7	0.9
16,384	–1.4	0.5	0.5	0.7

Figure 12 ($2.00/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	14.8	0.0	84.5	85.1	–92.0
<=9	2.3	13.1	0.2	84.3	86.6	–68.6
<=14	4.3	11.2	1.2	83.4	87.7	–37.3
<=19	7.6	7.8	3.9	80.7	88.3	+24.2
<=24	10.0	5.5	8.1	76.5	86.4	+47.5
<=29	12.2	3.3	13.0	71.6	83.7	+15.8
<=34	13.5	1.9	19.3	65.3	78.8	–24.8
<=39	14.4	1.1	26.8	57.7	72.1	–73.8
<=44	15.1	0.3	35.4	49.2	64.3	–129.0
<=49	15.1	0.3	43.8	40.8	55.9	–183.6
<=54	15.3	0.1	52.2	32.4	47.7	–237.7
<=59	15.4	0.0	59.5	25.0	40.5	–285.4
<=64	15.4	0.0	68.0	16.5	32.0	–340.5
<=69	15.4	0.0	73.8	10.8	26.2	–377.8
<=74	15.4	0.0	78.3	6.2	21.7	–407.1
<=79	15.4	0.0	81.9	2.7	18.1	–430.2
<=84	15.4	0.0	83.4	1.2	16.6	–439.9
<=89	15.4	0.0	84.3	0.3	15.7	–445.7
<=94	15.4	0.0	84.5	0.0	15.5	–447.3
<=100	15.4	0.0	84.6	0.0	15.4	–447.6

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

Figure 13 ($2.00/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	92.4	3.9	12.2:1
<=9	2.5	90.3	14.9	9.3:1
<=14	5.4	78.6	27.6	3.7:1
<=19	11.5	66.3	49.5	2.0:1
<=24	18.1	55.2	64.6	1.2:1
<=29	25.2	48.4	78.9	0.9:1
<=34	32.8	41.2	87.6	0.7:1
<=39	41.2	34.8	93.0	0.5:1
<=44	50.5	29.9	97.9	0.4:1
<=49	58.9	25.7	98.0	0.3:1
<=54	67.5	22.7	99.1	0.3:1
<=59	75.0	20.6	100.0	0.3:1
<=64	83.5	18.5	100.0	0.2:1
<=69	89.2	17.3	100.0	0.2:1
<=74	93.8	16.5	100.0	0.2:1
<=79	97.3	15.9	100.0	0.2:1
<=84	98.8	15.6	100.0	0.2:1
<=89	99.7	15.5	100.0	0.2:1
<=94	100.0	15.4	100.0	0.2:1
<=100	100.0	15.4	100.0	0.2:1

Tables for

the $2.50/day 2005 PPP Poverty Line

Figure 4 ($2.50/day 2005 PPP): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	89.3
5–9	89.3
10–14	84.3
15–19	78.6
20–24	62.5
25–29	48.5
30–34	44.5
35–39	21.9
40–44	12.1
45–49	7.9
50–54	2.9
55–59	0.8
60–64	0.3
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 7 ($2.50/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–10.7	5.3	5.3	5.3
5–9	–7.2	4.3	4.4	4.7
10–14	–11.0	6.1	6.2	6.5
15–19	+5.3	2.5	3.0	4.2
20–24	–0.7	2.8	3.3	4.1
25–29	–5.4	4.0	4.2	4.6
30–34	+3.7	2.5	3.0	4.2
35–39	–2.3	2.2	2.4	3.3
40–44	–12.4	7.4	7.7	8.0
45–49	+5.3	0.7	0.8	1.1
50–54	0.0	0.7	0.9	1.2
55–59	–1.9	1.4	1.5	1.7
60–64	+0.2	0.0	0.1	0.1
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 8 ($2.50/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+0.7	70.3	78.3	87.9
4	0.0	32.0	39.6	52.4
8	–1.2	23.1	27.2	36.9
16	–1.0	17.0	20.9	25.3
32	–1.2	11.8	14.0	18.9
64	–1.4	8.3	9.8	12.3
128	–1.6	5.6	6.9	9.3
256	–1.5	3.9	4.6	6.3
512	–1.5	2.7	3.4	4.6
1,024	–1.4	1.9	2.3	3.2
2,048	–1.4	1.4	1.6	2.1
4,096	–1.4	1.0	1.2	1.6
8,192	–1.4	0.7	0.8	1.1
16,384	–1.4	0.5	0.6	0.8

Figure 12 ($2.50/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	24.4	0.0	74.9	75.6	–94.8
<=9	2.4	22.6	0.1	74.8	77.3	–80.1
<=14	5.1	20.0	0.3	74.6	79.7	–58.1
<=19	9.6	15.5	2.0	73.0	82.5	–15.9
<=24	13.7	11.3	4.3	70.6	84.3	+26.9
<=29	17.3	7.8	7.9	67.0	84.3	+68.4
<=34	20.2	4.9	12.6	62.3	82.5	+49.7
<=39	22.4	2.7	18.8	56.1	78.5	+24.9
<=44	24.2	0.9	26.3	48.6	72.8	–5.0
<=49	24.6	0.5	34.4	40.5	65.1	–37.1
<=54	24.9	0.2	42.6	32.3	57.2	–69.9
<=59	25.1	0.0	49.9	25.0	50.1	–99.1
<=64	25.1	0.0	58.4	16.5	41.6	–133.0
<=69	25.1	0.0	64.2	10.8	35.8	–155.9
<=74	25.1	0.0	68.7	6.2	31.3	–174.0
<=79	25.1	0.0	72.2	2.7	27.8	–188.2
<=84	25.1	0.0	73.7	1.2	26.3	–194.1
<=89	25.1	0.0	74.6	0.3	25.4	–197.8
<=94	25.1	0.0	74.9	0.0	25.1	–198.7
<=100	25.1	0.0	74.9	0.0	25.1	–198.9

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

Figure 13 ($2.50/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	2.6	Only poor targeted
<=9	2.5	96.3	9.8	25.8:1
<=14	5.4	93.8	20.3	15.1:1
<=19	11.5	82.9	38.1	4.8:1
<=24	18.1	75.9	54.8	3.2:1
<=29	25.2	68.6	68.9	2.2:1
<=34	32.8	61.5	80.5	1.6:1
<=39	41.2	54.3	89.3	1.2:1
<=44	50.5	47.9	96.4	0.9:1
<=49	58.9	41.7	97.9	0.7:1
<=54	67.5	36.9	99.2	0.6:1
<=59	75.0	33.4	99.9	0.5:1
<=64	83.5	30.0	100.0	0.4:1
<=69	89.2	28.1	100.0	0.4:1
<=74	93.8	26.7	100.0	0.4:1
<=79	97.3	25.8	100.0	0.3:1
<=84	98.8	25.4	100.0	0.3:1
<=89	99.7	25.1	100.0	0.3:1
<=94	100.0	25.1	100.0	0.3:1
<=100	100.0	25.1	100.0	0.3:1

Tables for

the $4.00/day 2005 PPP Poverty Line

Figure 4 ($4.00/day 2005 PPP): 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	99.7
10–14	99.4
15–19	97.8
20–24	97.1
25–29	91.6
30–34	84.9
35–39	76.4
40–44	55.4
45–49	43.2
50–54	32.3
55–59	20.6
60–64	12.7
65–69	5.3
70–74	4.4
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 ($4.00/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	–0.3	0.2	0.2	0.2
10–14	–0.6	0.3	0.3	0.3
15–19	+0.4	0.7	0.9	1.1
20–24	+2.2	1.1	1.4	1.8
25–29	+3.8	1.7	2.1	2.7
30–34	–8.3	4.8	4.9	5.1
35–39	+4.2	2.6	3.1	3.9
40–44	–18.9	10.4	10.7	11.0
45–49	–9.1	5.9	6.2	6.8
50–54	–14.5	8.7	8.9	9.2
55–59	+3.7	2.0	2.4	3.3
60–64	–1.0	1.9	2.3	3.0
65–69	–2.9	2.5	2.7	3.0
70–74	–1.4	1.8	2.1	2.7
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 8 ($4.00/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.2	61.5	80.0	95.9
4	–3.5	33.8	41.7	61.3
8	–3.4	23.2	28.6	37.8
16	–3.4	17.2	20.4	27.6
32	–3.8	11.9	14.6	19.7
64	–3.7	8.4	10.6	13.6
128	–3.5	6.2	7.5	10.2
256	–3.5	4.2	5.0	7.3
512	–3.5	3.1	3.8	5.1
1,024	–3.5	2.2	2.6	3.3
2,048	–3.5	1.6	1.9	2.5
4,096	–3.5	1.1	1.3	1.6
8,192	–3.5	0.8	0.9	1.2
16,384	–3.5	0.6	0.7	0.8

Figure 12 ($4.00/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	52.9	0.0	46.5	47.1	–97.6
<=9	2.5	51.0	0.0	46.5	49.0	–90.5
<=14	5.4	48.1	0.0	46.5	51.9	–79.7
<=19	11.3	42.2	0.2	46.3	57.6	–57.3
<=24	17.5	36.0	0.6	45.9	63.4	–33.5
<=29	23.7	29.8	1.5	45.0	68.7	–8.6
<=34	30.6	22.9	2.2	44.3	74.9	+18.4
<=39	36.8	16.7	4.4	42.1	78.9	+45.8
<=44	43.1	10.4	7.4	39.1	82.2	+74.9
<=49	47.1	6.4	11.8	34.7	81.8	+77.9
<=54	50.5	3.0	17.0	29.5	80.0	+68.3
<=59	52.0	1.5	23.0	23.5	75.5	+57.0
<=64	52.9	0.6	30.5	16.0	68.9	+43.0
<=69	53.3	0.2	35.9	10.5	63.8	+32.8
<=74	53.5	0.0	40.2	6.2	59.8	+24.8
<=79	53.5	0.0	43.8	2.7	56.2	+18.1
<=84	53.5	0.0	45.3	1.2	54.7	+15.3
<=89	53.5	0.0	46.2	0.3	53.8	+13.6
<=94	53.5	0.0	46.4	0.0	53.6	+13.2
<=100	53.5	0.0	46.5	0.0	53.5	+13.1

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

Figure 13 ($4.00/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	1.2	Only poor targeted
<=9	2.5	100.0	4.8	Only poor targeted
<=14	5.4	100.0	10.1	Only poor targeted
<=19	11.5	98.2	21.2	54.0:1
<=24	18.1	96.7	32.7	29.1:1
<=29	25.2	94.1	44.3	16.1:1
<=34	32.8	93.3	57.2	13.8:1
<=39	41.2	89.3	68.8	8.4:1
<=44	50.5	85.4	80.6	5.8:1
<=49	58.9	79.9	88.0	4.0:1
<=54	67.5	74.8	94.4	3.0:1
<=59	75.0	69.3	97.1	2.3:1
<=64	83.5	63.4	99.0	1.7:1
<=69	89.2	59.7	99.6	1.5:1
<=74	93.8	57.1	100.0	1.3:1
<=79	97.3	55.0	100.0	1.2:1
<=84	98.8	54.2	100.0	1.2:1
<=89	99.7	53.7	100.0	1.2:1
<=94	100.0	53.5	100.0	1.2:1
<=100	100.0	53.5	100.0	1.2:1

Tables for

the $5.00/day 2005 PPP Poverty Line

Figure 4 ($5.00/day 2005 PPP): 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	100.0
15–19	99.2
20–24	98.9
25–29	97.8
30–34	96.2
35–39	92.0
40–44	75.9
45–49	68.4
50–54	57.5
55–59	41.0
60–64	29.6
65–69	16.2
70–74	8.7
75–79	1.9
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 ($5.00/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	0.0	0.0	0.0	0.0
15–19	–0.5	0.3	0.4	0.4
20–24	–0.4	0.4	0.4	0.6
25–29	+0.7	0.9	1.1	1.4
30–34	–1.1	1.0	1.1	1.4
35–39	–3.2	2.0	2.1	2.3
40–44	–9.1	5.4	5.5	5.7
45–49	–6.5	4.3	4.6	4.9
50–54	–18.6	10.4	10.6	10.9
55–59	–2.5	3.0	3.6	4.6
60–64	–0.3	2.4	2.9	3.8
65–69	–3.9	3.3	3.5	4.2
70–74	–2.8	2.7	2.9	3.8
75–79	+0.4	0.8	1.0	1.3
80–84	–0.1	0.1	0.1	0.2
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 8 ($5.00/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.9	63.7	73.2	91.9
4	–2.9	30.4	39.3	50.6
8	–3.5	20.1	24.1	38.9
16	–3.5	14.8	17.4	22.6
32	–3.7	9.9	12.4	17.0
64	–3.7	7.6	9.1	12.4
128	–3.6	5.4	6.4	7.9
256	–3.7	3.8	4.5	5.8
512	–3.7	2.7	3.1	4.0
1,024	–3.7	1.9	2.2	3.0
2,048	–3.7	1.3	1.6	2.1
4,096	–3.7	0.9	1.0	1.5
8,192	–3.7	0.7	0.8	1.2
16,384	–3.7	0.5	0.6	0.7

Figure 12 ($5.00/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	65.8	0.0	33.6	34.2	–98.1
<=9	2.5	63.9	0.0	33.6	36.1	–92.3
<=14	5.4	61.0	0.0	33.6	39.0	–83.7
<=19	11.5	55.0	0.0	33.5	45.0	–65.3
<=24	18.0	48.5	0.1	33.5	51.4	–45.7
<=29	24.9	41.6	0.3	33.2	58.1	–24.6
<=34	32.3	34.2	0.5	33.0	65.3	–2.1
<=39	40.1	26.4	1.1	32.4	72.5	+22.3
<=44	47.8	18.7	2.7	30.9	78.6	+47.9
<=49	53.7	12.8	5.3	28.3	82.0	+69.5
<=54	59.3	7.2	8.2	25.4	84.6	+87.7
<=59	62.5	4.0	12.5	21.1	83.5	+81.2
<=64	65.0	1.5	18.5	15.0	80.0	+72.1
<=69	65.9	0.6	23.3	10.2	76.1	+64.9
<=74	66.4	0.1	27.4	6.2	72.5	+58.8
<=79	66.4	0.0	30.9	2.7	69.1	+53.5
<=84	66.4	0.0	32.4	1.2	67.6	+51.3
<=89	66.4	0.0	33.3	0.3	66.7	+49.9
<=94	66.4	0.0	33.5	0.0	66.5	+49.6
<=100	66.4	0.0	33.6	0.0	66.4	+49.5

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

Figure 13 ($5.00/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	1.0	Only poor targeted
<=9	2.5	100.0	3.8	Only poor targeted
<=14	5.4	100.0	8.2	Only poor targeted
<=19	11.5	99.6	17.3	283.2:1
<=24	18.1	99.5	27.1	188.4:1
<=29	25.2	98.8	37.4	82.0:1
<=34	32.8	98.4	48.6	61.9:1
<=39	41.2	97.3	60.3	36.1:1
<=44	50.5	94.7	71.9	17.8:1
<=49	58.9	91.1	80.8	10.2:1
<=54	67.5	87.8	89.2	7.2:1
<=59	75.0	83.3	94.0	5.0:1
<=64	83.5	77.8	97.8	3.5:1
<=69	89.2	73.8	99.2	2.8:1
<=74	93.8	70.8	99.9	2.4:1
<=79	97.3	68.3	100.0	2.2:1
<=84	98.8	67.2	100.0	2.1:1
<=89	99.7	66.6	100.0	2.0:1
<=94	100.0	66.5	100.0	2.0:1
<=100	100.0	66.4	100.0	2.0:1

Tables for

the $8.44/day 2005 PPP Poverty Line

Figure 4 ($8.44/day 2005 PPP): 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	100.0
15–19	99.3
20–24	99.1
25–29	99.0
30–34	97.0
35–39	94.5
40–44	84.0
45–49	75.1
50–54	65.6
55–59	47.7
60–64	36.3
65–69	20.6
70–74	9.7
75–79	3.2
80–84	2.7
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 ($8.44/day 2005 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	0.0	0.0	0.0	0.0
15–19	–0.3	0.3	0.3	0.4
20–24	–0.3	0.4	0.4	0.6
25–29	–0.5	0.4	0.4	0.5
30–34	–0.8	0.8	1.0	1.3
35–39	–2.1	1.4	1.5	1.6
40–44	–6.8	4.1	4.2	4.5
45–49	–7.2	4.5	4.7	5.2
50–54	–12.4	7.2	7.4	7.8
55–59	–1.5	3.0	3.7	4.9
60–64	–1.0	2.5	3.1	3.8
65–69	–4.9	3.9	4.2	4.7
70–74	–3.0	2.7	3.0	3.8
75–79	+1.6	0.8	1.0	1.3
80–84	+2.6	0.1	0.1	0.2
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 8 ($8.44/day 2005 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–0.2	59.0	69.4	89.7
4	–2.7	29.4	36.9	50.6
8	–2.9	19.7	24.3	35.9
16	–2.8	14.1	16.7	22.1
32	–3.0	9.5	11.4	14.3
64	–3.0	7.1	8.9	12.2
128	–3.0	5.1	6.0	7.9
256	–3.0	3.7	4.4	5.9
512	–3.0	2.5	2.9	3.9
1,024	–3.0	1.7	2.1	2.8
2,048	–3.0	1.3	1.5	2.0
4,096	–3.0	0.9	1.0	1.4
8,192	–3.0	0.7	0.8	1.1
16,384	–3.0	0.5	0.6	0.7

Figure 12 ($8.44/day 2005 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	69.2	0.0	30.2	30.8	–98.2
<=9	2.5	67.3	0.0	30.2	32.7	–92.7
<=14	5.4	64.4	0.0	30.2	35.6	–84.5
<=19	11.5	58.3	0.0	30.1	41.6	–67.0
<=24	18.0	51.8	0.1	30.1	48.1	–48.3
<=29	25.0	44.8	0.2	30.0	55.1	–28.1
<=34	32.5	37.3	0.3	29.9	62.4	–6.5
<=39	40.5	29.3	0.7	29.5	70.0	+17.0
<=44	48.7	21.1	1.7	28.4	77.2	+42.1
<=49	55.2	14.6	3.7	26.5	81.7	+63.5
<=54	61.2	8.7	6.3	23.9	85.0	+84.2
<=59	64.9	4.9	10.1	20.1	85.0	+85.6
<=64	68.0	1.8	15.5	14.7	82.7	+77.8
<=69	69.2	0.6	20.0	10.2	79.4	+71.3
<=74	69.7	0.1	24.0	6.2	75.9	+65.6
<=79	69.8	0.0	27.5	2.7	72.5	+60.6
<=84	69.8	0.0	29.0	1.2	71.0	+58.5
<=89	69.8	0.0	29.9	0.3	70.1	+57.2
<=94	69.8	0.0	30.1	0.0	69.9	+56.8
<=100	69.8	0.0	30.2	0.0	69.8	+56.8

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

Figure 13 ($8.44/day 2005 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	0.9	Only poor targeted
<=9	2.5	100.0	3.6	Only poor targeted
<=14	5.4	100.0	7.8	Only poor targeted
<=19	11.5	99.6	16.5	283.2:1
<=24	18.1	99.5	25.8	188.4:1
<=29	25.2	99.4	35.9	163.8:1
<=34	32.8	99.1	46.5	110.5:1
<=39	41.2	98.3	58.0	57.3:1
<=44	50.5	96.5	69.8	27.9:1
<=49	58.9	93.7	79.1	14.9:1
<=54	67.5	90.7	87.6	9.7:1
<=59	75.0	86.5	92.9	6.4:1
<=64	83.5	81.4	97.4	4.4:1
<=69	89.2	77.6	99.1	3.5:1
<=74	93.8	74.4	99.9	2.9:1
<=79	97.3	71.7	100.0	2.5:1
<=84	98.8	70.7	100.0	2.4:1
<=89	99.7	70.0	100.0	2.3:1
<=94	100.0	69.8	100.0	2.3:1
<=100	100.0	69.8	100.0	2.3:1

Tables for

the $1.90/day 2011 PPP Poverty Line

Figure 4 ($1.90/day 2011 PPP): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	76.6
5–9	42.7
10–14	32.7
15–19	22.3
20–24	12.0
25–29	7.4
30–34	4.8
35–39	1.1
40–44	0.5
45–49	0.0
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 7 ($1.90/day 2011 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	+30.0	9.0	10.4	13.9
5–9	–5.5	5.5	6.0	8.4
10–14	+7.3	3.5	4.0	5.3
15–19	–2.0	2.4	2.8	4.1
20–24	+4.1	1.4	1.7	2.1
25–29	+4.6	0.8	1.0	1.3
30–34	+2.9	0.7	0.8	1.0
35–39	+0.7	0.3	0.3	0.4
40–44	+0.1	0.2	0.3	0.4
45–49	0.0	0.0	0.0	0.0
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 8 ($1.90/day 2011 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.2	11.2	50.0	65.4
4	+0.9	20.6	26.6	38.4
8	+1.2	13.5	16.8	24.2
16	+1.0	9.0	11.3	16.1
32	+1.1	6.2	7.7	12.7
64	+1.1	4.4	5.2	7.4
128	+1.1	3.0	3.7	5.2
256	+1.2	2.2	2.7	3.7
512	+1.2	1.5	1.9	2.4
1,024	+1.2	1.1	1.3	1.7
2,048	+1.1	0.8	0.9	1.1
4,096	+1.1	0.5	0.7	0.8
8,192	+1.1	0.4	0.5	0.6
16,384	+1.1	0.3	0.3	0.5

Figure 12 ($1.90/day 2011 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.3	4.2	0.4	95.1	95.4	–79.6
<=9	1.1	3.4	1.4	94.1	95.2	–18.7
<=14	2.0	2.5	3.4	92.1	94.1	+24.2
<=19	3.4	1.1	8.1	87.4	90.8	–80.2
<=24	4.0	0.5	14.1	81.4	85.4	–211.9
<=29	4.3	0.3	20.9	74.6	78.8	–364.2
<=34	4.4	0.1	28.4	67.1	71.5	–529.5
<=39	4.5	0.0	36.7	58.8	63.2	–714.8
<=44	4.5	0.0	46.0	49.5	54.0	–919.6
<=49	4.5	0.0	54.4	41.1	45.6	–1,107.0
<=54	4.5	0.0	62.9	32.5	37.1	–1,296.1
<=59	4.5	0.0	70.5	25.0	29.5	–1,462.6
<=64	4.5	0.0	79.0	16.5	21.0	–1,651.3
<=69	4.5	0.0	84.7	10.8	15.3	–1,778.9
<=74	4.5	0.0	89.2	6.2	10.8	–1,879.4
<=79	4.5	0.0	92.8	2.7	7.2	–1,958.4
<=84	4.5	0.0	94.3	1.2	5.7	–1,991.5
<=89	4.5	0.0	95.2	0.3	4.8	–2,011.7
<=94	4.5	0.0	95.4	0.0	4.6	–2,016.9
<=100	4.5	0.0	95.5	0.0	4.5	–2,017.9

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

Figure 13 ($1.90/day 2011 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	42.7	6.1	0.7:1
<=9	2.5	44.0	24.8	0.8:1
<=14	5.4	36.9	44.4	0.6:1
<=19	11.5	29.6	75.6	0.4:1
<=24	18.1	22.2	89.0	0.3:1
<=29	25.2	16.9	94.3	0.2:1
<=34	32.8	13.5	97.8	0.2:1
<=39	41.2	10.8	98.9	0.1:1
<=44	50.5	8.9	100.0	0.1:1
<=49	58.9	7.7	100.0	0.1:1
<=54	67.5	6.7	100.0	0.1:1
<=59	75.0	6.0	100.0	0.1:1
<=64	83.5	5.4	100.0	0.1:1
<=69	89.2	5.1	100.0	0.1:1
<=74	93.8	4.8	100.0	0.1:1
<=79	97.3	4.6	100.0	0.0:1
<=84	98.8	4.6	100.0	0.0:1
<=89	99.7	4.5	100.0	0.0:1
<=94	100.0	4.5	100.0	0.0:1
<=100	100.0	4.5	100.0	0.0:1

Tables for

the $3.10/day 2011 PPP Poverty Line

Figure 4 ($3.10/day 2011 PPP): Estimated poverty likelihoods associated with scores

If a household's score is . . .	. . . then the likelihood (%) of being below the poverty line is:
0–4	87.8
5–9	87.8
10–14	78.7
15–19	67.7
20–24	50.7
25–29	39.5
30–34	32.8
35–39	14.0
40–44	7.1
45–49	4.4
50–54	1.2
55–59	0.3
60–64	0.2
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 7 ($3.10/day 2011 PPP): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–12.2	6.1	6.1	6.1
5–9	–8.7	5.0	5.1	5.4
10–14	–2.4	3.3	4.0	5.1
15–19	–3.2	2.9	3.1	4.1
20–24	–5.6	4.1	4.4	5.0
25–29	–7.6	5.1	5.4	5.9
30–34	+0.8	2.5	3.0	4.0
35–39	–3.9	2.9	3.1	3.4
40–44	–7.7	4.8	4.9	5.2
45–49	+3.3	0.4	0.5	0.6
50–54	–0.5	0.6	0.7	0.9
55–59	–2.3	1.6	1.7	1.9
60–64	+0.2	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 8 ($3.10/day 2011 PPP): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.0	58.9	76.8	80.3
4	–1.6	29.9	36.6	49.9
8	–2.3	22.1	26.3	36.5
16	–2.0	15.6	19.1	25.2
32	–2.3	11.4	13.3	17.1
64	–2.5	7.5	9.0	12.2
128	–2.6	5.3	6.2	8.3
256	–2.4	3.6	4.4	5.9
512	–2.5	2.6	3.2	4.2
1,024	–2.5	1.9	2.2	2.9
2,048	–2.5	1.3	1.5	2.0
4,096	–2.5	0.9	1.1	1.4
8,192	–2.4	0.7	0.8	1.1
16,384	–2.4	0.5	0.6	0.8

Figure 12 ($3.10/day 2011 PPP): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	20.5	0.0	78.8	79.5	–93.9
<=9	2.4	18.7	0.1	78.7	81.2	–76.4
<=14	4.8	16.4	0.6	78.2	83.0	–51.8
<=19	9.1	12.1	2.5	76.4	85.4	–2.7
<=24	12.7	8.5	5.4	73.4	86.1	+45.2
<=29	15.6	5.6	9.6	69.2	84.8	+54.7
<=34	17.8	3.3	14.9	63.9	81.7	+29.5
<=39	19.5	1.7	21.7	57.1	76.6	–2.6
<=44	20.7	0.5	29.8	49.0	69.7	–40.7
<=49	20.8	0.3	38.1	40.7	61.6	–79.8
<=54	21.0	0.2	46.4	32.4	53.4	–119.2
<=59	21.2	0.0	53.8	25.0	46.2	–153.8
<=64	21.2	0.0	62.3	16.5	37.7	–194.0
<=69	21.2	0.0	68.0	10.8	32.0	–221.2
<=74	21.2	0.0	72.6	6.2	27.4	–242.5
<=79	21.2	0.0	76.1	2.7	23.9	–259.3
<=84	21.2	0.0	77.6	1.2	22.4	–266.4
<=89	21.2	0.0	78.5	0.3	21.5	–270.7
<=94	21.2	0.0	78.8	0.0	21.2	–271.8
<=100	21.2	0.0	78.8	0.0	21.2	–272.0

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

Figure 13 ($3.10/day 2011 PPP): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	3.0	Only poor targeted
<=9	2.5	96.3	11.6	25.8:1
<=14	5.4	88.5	22.7	7.7:1
<=19	11.5	78.7	42.8	3.7:1
<=24	18.1	70.1	59.8	2.3:1
<=29	25.2	61.9	73.6	1.6:1
<=34	32.8	54.4	84.2	1.2:1
<=39	41.2	47.3	91.9	0.9:1
<=44	50.5	41.0	97.6	0.7:1
<=49	58.9	35.4	98.4	0.5:1
<=54	67.5	31.2	99.2	0.5:1
<=59	75.0	28.3	100.0	0.4:1
<=64	83.5	25.4	100.0	0.3:1
<=69	89.2	23.7	100.0	0.3:1
<=74	93.8	22.6	100.0	0.3:1
<=79	97.3	21.8	100.0	0.3:1
<=84	98.8	21.4	100.0	0.3:1
<=89	99.7	21.2	100.0	0.3:1
<=94	100.0	21.2	100.0	0.3:1
<=100	100.0	21.2	100.0	0.3:1

Tables for

the USAID "Extreme" Poverty Line

Figure 4 (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	82.2
5–9	82.2
10–14	69.1
15–19	58.8
20–24	34.5
25–29	23.7
30–34	18.5
35–39	5.8
40–44	2.9
45–49	0.4
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 7 (USAID "extreme" line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–12.7	7.8	8.0	8.3
5–9	–9.9	6.0	6.2	6.6
10–14	–8.6	6.0	6.3	6.8
15–19	–3.7	3.2	3.4	4.6
20–24	–8.4	5.6	5.9	6.4
25–29	–15.0	8.9	9.1	9.6
30–34	–0.5	2.2	2.6	3.2
35–39	–5.1	3.3	3.4	3.8
40–44	–4.3	2.9	3.0	3.3
45–49	+0.4	0.0	0.0	0.0
50–54	–1.7	1.2	1.2	1.3
55–59	–2.5	1.7	1.8	2.0
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 8 (USAID "extreme" line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–2.8	55.4	70.1	83.1
4	–3.2	27.8	34.6	46.9
8	–3.6	20.2	24.6	32.0
16	–3.5	14.0	16.9	22.9
32	–3.5	10.1	12.2	15.7
64	–3.7	7.0	8.1	10.6
128	–3.9	5.0	6.1	7.5
256	–3.7	3.5	4.1	5.5
512	–3.7	2.5	3.0	3.8
1,024	–3.7	1.8	2.1	2.8
2,048	–3.7	1.3	1.5	1.9
4,096	–3.7	0.8	1.0	1.4
8,192	–3.7	0.7	0.8	1.0
16,384	–3.7	0.4	0.5	0.7

Figure 12 (USAID "extreme" line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	15.3	0.0	84.0	84.6	–92.2
<=9	2.3	13.7	0.3	83.8	86.1	–69.8
<=14	4.4	11.5	1.0	83.1	87.6	–38.0
<=19	8.0	7.9	3.5	80.6	88.6	+22.8
<=24	10.7	5.2	7.4	76.7	87.4	+53.4
<=29	12.9	3.0	12.3	71.8	84.7	+22.8
<=34	14.2	1.7	18.6	65.5	79.7	–16.8
<=39	15.0	0.9	26.2	57.9	73.0	–64.4
<=44	15.6	0.3	34.9	49.2	64.8	–119.2
<=49	15.6	0.3	43.3	40.8	56.4	–172.3
<=54	15.8	0.1	51.7	32.4	48.2	–224.9
<=59	15.9	0.0	59.1	25.0	40.9	–271.2
<=64	15.9	0.0	67.6	16.5	32.4	–324.7
<=69	15.9	0.0	73.3	10.8	26.7	–360.8
<=74	15.9	0.0	77.8	6.2	22.2	–389.3
<=79	15.9	0.0	81.4	2.7	18.6	–411.7
<=84	15.9	0.0	82.9	1.2	17.1	–421.1
<=89	15.9	0.0	83.8	0.3	16.2	–426.8
<=94	15.9	0.0	84.0	0.0	16.0	–428.3
<=100	15.9	0.0	84.1	0.0	15.9	–428.5

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

Figure 13 (USAID "extreme" line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	92.4	3.8	12.2:1
<=9	2.5	88.7	14.2	7.9:1
<=14	5.4	81.9	27.9	4.5:1
<=19	11.5	69.4	50.3	2.3:1
<=24	18.1	59.0	67.1	1.4:1
<=29	25.2	51.2	81.1	1.1:1
<=34	32.8	43.3	89.3	0.8:1
<=39	41.2	36.5	94.6	0.6:1
<=44	50.5	30.9	98.1	0.4:1
<=49	58.9	26.5	98.1	0.4:1
<=54	67.5	23.4	99.1	0.3:1
<=59	75.0	21.2	100.0	0.3:1
<=64	83.5	19.1	100.0	0.2:1
<=69	89.2	17.8	100.0	0.2:1
<=74	93.8	17.0	100.0	0.2:1
<=79	97.3	16.3	100.0	0.2:1
<=84	98.8	16.1	100.0	0.2:1
<=89	99.7	16.0	100.0	0.2:1
<=94	100.0	15.9	100.0	0.2:1
<=100	100.0	15.9	100.0	0.2:1

Tables for

the First-Quintile (20th-Percentile) Poverty Line

Figure 4 (First-quintile (20th-percentile) 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	82.2
5–9	82.2
10–14	68.5
15–19	56.3
20–24	32.2
25–29	22.7
30–34	18.0
35–39	5.1
40–44	2.9
45–49	0.4
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 7 (First-quintile (20th-percentile) line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
Score	Diff.	90-percent	95-percent	99-percent
0–4	–12.7	7.8	8.0	8.3
5–9	–8.7	5.4	5.6	6.0
10–14	–4.1	3.8	4.1	5.5
15–19	–5.9	4.3	4.5	5.3
20–24	–9.7	6.2	6.6	7.0
25–29	–10.2	6.5	6.7	7.3
30–34	+4.3	1.9	2.3	3.2
35–39	–4.1	2.7	2.8	3.2
40–44	–1.3	1.1	1.2	1.3
45–49	+0.4	0.0	0.0	0.0
50–54	–1.7	1.2	1.2	1.3
55–59	–2.5	1.7	1.8	2.0
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 8 (First-quintile (20th-percentile) line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.1	50.0	68.0	82.3
4	–2.3	26.6	33.8	46.2
8	–2.8	19.8	24.2	31.5
16	–2.4	13.7	16.1	21.8
32	–2.4	9.6	11.0	13.9
64	–2.7	6.7	7.9	10.2
128	–2.8	4.7	5.8	7.7
256	–2.7	3.4	4.1	5.0
512	–2.7	2.3	2.8	3.7
1,024	–2.7	1.7	2.0	2.7
2,048	–2.7	1.2	1.4	1.8
4,096	–2.7	0.8	1.0	1.2
8,192	–2.7	0.6	0.7	0.9
16,384	–2.7	0.4	0.5	0.7

Figure 12 (First-quintile (20th-percentile) line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	14.0	0.0	85.3	85.9	–91.5
<=9	2.2	12.4	0.3	85.1	87.3	–67.4
<=14	4.3	10.3	1.1	84.3	88.5	–33.6
<=19	7.8	6.8	3.7	81.7	89.5	+32.4
<=24	10.3	4.3	7.7	77.6	88.0	+47.0
<=29	12.2	2.4	12.9	72.4	84.7	+11.4
<=34	13.2	1.4	19.6	65.8	79.0	–34.2
<=39	13.9	0.7	27.3	58.1	72.0	–86.9
<=44	14.3	0.3	36.2	49.2	63.5	–147.6
<=49	14.3	0.3	44.6	40.8	55.1	–205.4
<=54	14.5	0.1	53.0	32.4	46.9	–262.6
<=59	14.6	0.0	60.4	25.0	39.6	–313.0
<=64	14.6	0.0	68.9	16.5	31.1	–371.3
<=69	14.6	0.0	74.6	10.8	25.4	–410.7
<=74	14.6	0.0	79.1	6.2	20.9	–441.6
<=79	14.6	0.0	82.7	2.7	17.3	–466.0
<=84	14.6	0.0	84.2	1.2	15.8	–476.3
<=89	14.6	0.0	85.1	0.3	14.9	–482.5
<=94	14.6	0.0	85.3	0.0	14.7	–484.1
<=100	14.6	0.0	85.4	0.0	14.6	–484.4

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

Figure 13 (First-quintile (20th-percentile) line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	92.4	4.1	12.2:1
<=9	2.5	87.2	15.2	6.8:1
<=14	5.4	79.0	29.3	3.8:1
<=19	11.5	67.8	53.5	2.1:1
<=24	18.1	57.2	70.7	1.3:1
<=29	25.2	48.6	83.8	0.9:1
<=34	32.8	40.2	90.2	0.7:1
<=39	41.2	33.7	95.0	0.5:1
<=44	50.5	28.3	97.9	0.4:1
<=49	58.9	24.3	97.9	0.3:1
<=54	67.5	21.5	99.0	0.3:1
<=59	75.0	19.5	100.0	0.2:1
<=64	83.5	17.5	100.0	0.2:1
<=69	89.2	16.4	100.0	0.2:1
<=74	93.8	15.6	100.0	0.2:1
<=79	97.3	15.0	100.0	0.2:1
<=84	98.8	14.8	100.0	0.2:1
<=89	99.7	14.7	100.0	0.2:1
<=94	100.0	14.6	100.0	0.2:1
<=100	100.0	14.6	100.0	0.2:1

Tables for

the Second-Quintile (40^{th}-Percentile) Poverty Line

Figure 4 (Second-quintile (40^{th}-percentile) 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	97.6
10–14	95.3
15–19	91.2
20–24	71.3
25–29	67.1
30–34	54.8
35–39	34.9
40–44	20.5
45–49	10.1
50–54	4.1
55–59	1.5
60–64	0.8
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 7 (Second-quintile (40^{th}-percentile) line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	+1.1	1.4	1.6	2.2
10–14	–0.1	1.3	1.5	2.2
15–19	+5.4	2.0	2.5	3.3
20–24	–8.4	5.2	5.4	5.9
25–29	–6.7	4.4	4.7	5.2
30–34	+4.0	2.6	3.0	3.8
35–39	–0.2	2.4	2.9	3.9
40–44	–15.8	9.2	9.4	9.8
45–49	+1.6	1.4	1.6	2.1
50–54	–0.1	0.9	1.1	1.4
55–59	–3.3	2.3	2.4	2.7
60–64	–4.0	2.7	2.8	3.2
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 8 (Second-quintile (40^{th}-percentile) line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.4	66.1	75.4	93.6
4	–0.8	33.1	41.9	56.0
8	–2.2	22.9	27.6	38.2
16	–1.8	16.0	19.4	26.0
32	–2.2	11.4	13.9	20.4
64	–2.3	8.7	10.1	13.5
128	–2.4	6.1	7.2	9.8
256	–2.2	4.2	5.1	6.8
512	–2.2	2.9	3.6	4.7
1,024	–2.2	2.1	2.5	3.2
2,048	–2.2	1.4	1.7	2.3
4,096	–2.2	1.0	1.2	1.5
8,192	–2.2	0.7	0.9	1.2
16,384	–2.2	0.5	0.6	0.8

Figure 12 (Second-quintile (40th-percentile) line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	30.3	0.0	68.9	69.6	–95.8
<=9	2.4	28.5	0.1	68.8	71.3	–83.9
<=14	5.1	25.9	0.3	68.6	73.7	–66.1
<=19	10.3	20.7	1.3	67.6	77.9	–29.6
<=24	15.3	15.6	2.7	66.2	81.5	+7.9
<=29	20.1	10.8	5.1	63.9	84.0	+46.4
<=34	23.7	7.3	9.1	59.8	83.5	+70.6
<=39	26.7	4.2	14.5	54.4	81.2	+53.3
<=44	29.3	1.6	21.1	47.8	77.1	+31.7
<=49	30.0	0.9	28.8	40.1	70.2	+7.1
<=54	30.5	0.5	36.9	32.1	62.5	–19.0
<=59	30.7	0.2	44.1	24.8	55.6	–42.4
<=64	31.0	0.0	52.4	16.5	47.5	–69.2
<=69	31.0	0.0	58.1	10.8	41.7	–87.8
<=74	31.0	0.0	62.7	6.2	37.2	–102.4
<=79	31.0	0.0	66.2	2.7	33.6	–113.9
<=84	31.0	0.0	67.7	1.2	32.2	–118.7
<=89	31.0	0.0	68.6	0.3	31.2	–121.7
<=94	31.0	0.0	68.9	0.0	31.0	–122.4
<=100	31.0	0.0	68.9	0.0	31.0	–122.6

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

Figure 13 (Second-quintile (40th-percentile) line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	2.1	Only poor targeted
<=9	2.5	96.3	7.9	25.8:1
<=14	5.4	93.8	16.4	15.1:1
<=19	11.5	89.0	33.1	8.1:1
<=24	18.1	84.9	49.6	5.6:1
<=29	25.2	79.9	65.0	4.0:1
<=34	32.8	72.3	76.5	2.6:1
<=39	41.2	64.9	86.3	1.8:1
<=44	50.5	58.1	94.7	1.4:1
<=49	58.9	51.0	97.0	1.0:1
<=54	67.5	45.2	98.4	0.8:1
<=59	75.0	41.0	99.3	0.7:1
<=64	83.5	37.1	100.0	0.6:1
<=69	89.2	34.7	100.0	0.5:1
<=74	93.8	33.0	100.0	0.5:1
<=79	97.3	31.8	100.0	0.5:1
<=84	98.8	31.3	100.0	0.5:1
<=89	99.7	31.1	100.0	0.5:1
<=94	100.0	31.0	100.0	0.4:1
<=100	100.0	31.0	100.0	0.4:1

Tables for

the Median (50th-Percentile) Poverty Line

Figure 4 (Median (50th-percentile) 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	99.1
10–14	97.7
15–19	94.9
20–24	86.8
25–29	81.8
30–34	72.2
35–39	55.4
40–44	31.2
45–49	21.3
50–54	11.5
55–59	6.1
60–64	2.6
65–69	1.4
70–74	0.7
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 (Median (50^{th}-percentile) line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	–0.9	0.4	0.4	0.4
10–14	–1.1	0.8	0.8	1.0
15–19	–1.1	1.0	1.1	1.3
20–24	–5.1	3.2	3.3	3.6
25–29	–2.4	2.2	2.4	2.9
30–34	+2.6	2.4	2.8	3.7
35–39	+2.8	2.7	3.2	4.2
40–44	–22.5	12.5	12.7	13.1
45–49	–5.8	4.2	4.5	4.8
50–54	–8.8	5.8	6.0	6.5
55–59	–3.2	2.4	2.6	3.1
60–64	–2.2	1.8	1.9	2.3
65–69	–5.5	3.8	4.0	4.3
70–74	+0.7	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 8 (Median (50th-percentile) line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	+1.2	70.5	75.4	90.3
4	–2.8	35.1	43.5	57.0
8	–4.0	23.4	27.8	38.4
16	–4.0	17.3	20.5	26.3
32	–4.4	12.2	15.2	21.0
64	–4.3	9.1	11.1	13.9
128	–4.3	6.7	8.0	9.9
256	–4.1	4.5	5.5	7.1
512	–4.1	3.3	4.0	5.3
1,024	–4.1	2.3	2.7	3.5
2,048	–4.1	1.7	2.0	2.6
4,096	–4.0	1.1	1.3	1.8
8,192	–4.1	0.8	0.9	1.2
16,384	–4.1	0.5	0.7	0.9

Figure 12 (Median (50th-percentile) line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	40.2	0.0	59.1	59.8	–96.8
<=9	2.5	38.3	0.0	59.1	61.7	–87.5
<=14	5.3	35.5	0.1	59.1	64.4	–73.7
<=19	11.1	29.8	0.5	58.7	69.7	–44.7
<=24	16.9	24.0	1.2	57.9	74.8	–14.5
<=29	22.6	18.2	2.5	56.6	79.2	+17.1
<=34	27.7	13.2	5.1	54.1	81.8	+48.1
<=39	32.3	8.5	8.9	50.3	82.6	+78.3
<=44	36.5	4.3	13.9	45.2	81.8	+65.9
<=49	38.5	2.4	20.4	38.7	77.2	+49.9
<=54	39.8	1.0	27.6	31.5	71.4	+32.4
<=59	40.4	0.4	34.5	24.6	65.0	+15.5
<=64	40.7	0.2	42.8	16.3	57.0	–4.8
<=69	40.9	0.0	48.4	10.8	51.6	–18.4
<=74	40.9	0.0	52.9	6.2	47.1	–29.5
<=79	40.9	0.0	56.5	2.7	43.5	–38.2
<=84	40.9	0.0	58.0	1.2	42.0	–41.9
<=89	40.9	0.0	58.9	0.3	41.1	–44.1
<=94	40.9	0.0	59.1	0.0	40.9	–44.7
<=100	40.9	0.0	59.1	0.0	40.9	–44.8

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

Figure 13 (Median (50th-percentile) line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	1.6	Only poor targeted
<=9	2.5	100.0	6.2	Only poor targeted
<=14	5.4	98.5	13.1	65.8:1
<=19	11.5	95.9	27.1	23.1:1
<=24	18.1	93.3	41.3	14.0:1
<=29	25.2	89.9	55.4	8.9:1
<=34	32.8	84.5	67.8	5.4:1
<=39	41.2	78.5	79.1	3.6:1
<=44	50.5	72.4	89.5	2.6:1
<=49	58.9	65.3	94.2	1.9:1
<=54	67.5	59.1	97.5	1.4:1
<=59	75.0	53.9	99.0	1.2:1
<=64	83.5	48.7	99.5	0.9:1
<=69	89.2	45.8	100.0	0.8:1
<=74	93.8	43.6	100.0	0.8:1
<=79	97.3	42.0	100.0	0.7:1
<=84	98.8	41.3	100.0	0.7:1
<=89	99.7	41.0	100.0	0.7:1
<=94	100.0	40.9	100.0	0.7:1
<=100	100.0	40.9	100.0	0.7:1

Tables for

the Third-Quintile (60th-Percentile) Poverty Line

Figure 4 (Third-quintile (60^{th}-percentile) 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	99.5
10–14	98.7
15–19	97.4
20–24	97.3
25–29	92.0
30–34	83.2
35–39	71.9
40–44	48.7
45–49	38.7
50–54	27.6
55–59	15.5
60–64	7.3
65–69	3.2
70–74	1.5
75–79	0.0
80–84	0.0
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 (Third-quintile (60^{th}-percentile) line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	–0.5	0.3	0.3	0.3
10–14	–1.3	0.7	0.7	0.7
15–19	0.0	0.8	0.9	1.1
20–24	+2.5	1.1	1.4	1.8
25–29	+2.2	1.6	1.9	2.7
30–34	–5.5	3.5	3.6	3.9
35–39	–1.3	2.5	2.9	3.8
40–44	–22.3	12.2	12.4	12.8
45–49	–11.6	7.1	7.4	8.0
50–54	–15.6	9.3	9.5	10.0
55–59	+0.9	1.9	2.4	3.2
60–64	–7.4	4.7	4.9	5.3
65–69	–3.9	3.0	3.2	3.6
70–74	–4.2	3.0	3.2	3.5
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 8 (Third-quintile (60^{th}-percentile) line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.0	72.1	77.8	97.1
4	–5.3	33.9	40.3	61.2
8	–5.6	23.6	28.6	40.4
16	–5.6	16.4	20.1	26.8
32	–5.8	11.9	14.1	19.8
64	–5.7	8.8	10.4	14.2
128	–5.5	6.5	7.9	10.3
256	–5.4	4.4	5.2	7.3
512	–5.4	3.2	3.7	5.1
1,024	–5.4	2.2	2.6	3.3
2,048	–5.4	1.6	1.9	2.4
4,096	–5.4	1.1	1.3	1.6
8,192	–5.4	0.8	0.9	1.3
16,384	–5.4	0.6	0.7	0.9

Figure 12 (Third-quintile (60th-percentile) line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	50.2	0.0	49.1	49.7	–97.5
<=9	2.5	48.3	0.0	49.1	51.6	–90.0
<=14	5.4	45.5	0.0	49.1	54.5	–78.7
<=19	11.3	39.6	0.2	48.9	60.2	–55.1
<=24	17.4	33.5	0.7	48.4	65.9	–30.2
<=29	23.7	27.2	1.5	47.6	71.4	–3.9
<=34	30.2	20.6	2.5	46.6	76.8	+23.9
<=39	36.3	14.6	4.9	44.2	80.5	+52.3
<=44	42.1	8.8	8.4	40.7	82.8	+81.9
<=49	45.7	5.2	13.2	35.9	81.6	+74.1
<=54	48.5	2.4	19.0	30.1	78.6	+62.7
<=59	49.6	1.3	25.4	23.7	73.3	+50.1
<=64	50.4	0.4	33.0	16.1	66.5	+35.1
<=69	50.7	0.2	38.5	10.6	61.3	+24.3
<=74	50.9	0.0	42.9	6.2	57.1	+15.8
<=79	50.9	0.0	46.4	2.7	53.6	+8.8
<=84	50.9	0.0	47.9	1.2	52.1	+5.8
<=89	50.9	0.0	48.8	0.3	51.2	+4.1
<=94	50.9	0.0	49.1	0.0	50.9	+3.6
<=100	50.9	0.0	49.1	0.0	50.9	+3.5

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

Figure 13 (Third-quintile (60th-percentile) line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	1.3	Only poor targeted
<=9	2.5	100.0	5.0	Only poor targeted
<=14	5.4	99.8	10.6	562.3:1
<=19	11.5	98.0	22.2	49.5:1
<=24	18.1	96.3	34.2	26.2:1
<=29	25.2	94.2	46.6	16.2:1
<=34	32.8	92.2	59.4	11.9:1
<=39	41.2	88.1	71.4	7.4:1
<=44	50.5	83.4	82.7	5.0:1
<=49	58.9	77.6	89.9	3.5:1
<=54	67.5	71.9	95.3	2.6:1
<=59	75.0	66.1	97.4	2.0:1
<=64	83.5	60.4	99.1	1.5:1
<=69	89.2	56.8	99.6	1.3:1
<=74	93.8	54.3	100.0	1.2:1
<=79	97.3	52.3	100.0	1.1:1
<=84	98.8	51.5	100.0	1.1:1
<=89	99.7	51.0	100.0	1.0:1
<=94	100.0	50.9	100.0	1.0:1
<=100	100.0	50.9	100.0	1.0:1

Tables for

the Fourth-Quintile (80th-Percentile) Poverty Line

Figure 4 (Fourth-quintile (80th-percentile) 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	100.0
15–19	100.0
20–24	99.9
25–29	99.9
30–34	99.0
35–39	96.7
40–44	88.9
45–49	79.1
50–54	68.5
55–59	52.0
60–64	38.9
65–69	24.1
70–74	11.2
75–79	7.7
80–84	3.8
85–89	0.0
90–94	0.0
95–100	0.0

Figure 7 (Fourth-quintile (80th-percentile) line): Average bootstrapped differences between estimated and true poverty likelihoods for households from 1,000 bootstraps of n = 16,384 with confidence intervals, scorecard applied to the 2009 validation sample

	Difference between estimate and observed 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	0.0	0.0	0.0	0.0
15–19	0.0	0.0	0.0	0.0
20–24	–0.1	0.0	0.0	0.0
25–29	0.0	0.0	0.0	0.1
30–34	–1.0	0.5	0.5	0.5
35–39	–0.6	0.8	0.9	1.2
40–44	–5.5	3.2	3.3	3.4
45–49	–6.2	3.9	4.0	4.4
50–54	–15.9	8.8	9.0	9.3
55–59	+0.3	3.1	3.6	4.7
60–64	–1.5	2.7	3.1	4.0
65–69	–13.0	8.1	8.4	9.0
70–74	–16.5	10.2	10.5	11.2
75–79	–4.6	3.6	3.8	4.4
80–84	+3.8	0.1	0.1	0.2
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 8 (Fourth-quintile (80th-percentile) line): Average differences between estimated poverty rates for a group at a point in time and true values, with precision, for 1,000 bootstraps of various sample sizes, scorecard applied to the 2009 validation sample

Sample Size	Difference between estimate and observed value			
		Confidence interval (±percentage points)		
n	Diff.	90-percent	95-percent	99-percent
1	–1.3	64.8	77.5	90.6
4	–3.9	28.6	35.9	52.2
8	–4.3	20.8	25.2	33.6
16	–3.9	14.9	17.7	24.2
32	–4.0	10.0	12.3	15.9
64	–4.1	7.5	9.1	12.0
128	–4.0	5.4	6.2	8.1
256	–4.0	3.9	4.7	6.0
512	–4.1	2.6	3.2	4.2
1,024	–4.1	1.9	2.2	3.0
2,048	–4.1	1.3	1.6	2.0
4,096	–4.1	0.9	1.1	1.3
8,192	–4.1	0.7	0.9	1.1
16,384	–4.1	0.5	0.6	0.7

Figure 12 (Fourth-quintile (80th-percentile) line): Households by cut-off score and targeting classification, along with "Total Accuracy" and BPAC, scorecard applied to the 2009 validation sample

Targeting cut-off	Inclusion: Poor correctly targeted	Undercoverage: Poor mistakenly not targeted	Leakage: Non-poor mistakenly targeted	Exclusion: Non-poor correctly not targeted	Hit rate Inclusion + Exclusion	BPAC See text
<=4	0.6	71.9	0.0	27.5	28.1	–98.2
<=9	2.5	70.0	0.0	27.5	30.0	–93.0
<=14	5.4	67.1	0.0	27.5	32.9	–85.1
<=19	11.5	61.0	0.0	27.5	39.0	–68.2
<=24	18.1	54.5	0.0	27.5	45.5	–50.2
<=29	25.2	47.4	0.0	27.5	52.6	–30.6
<=34	32.8	39.8	0.0	27.4	60.2	–9.6
<=39	40.9	31.7	0.3	27.1	68.0	+13.2
<=44	49.4	23.1	1.0	26.4	75.9	+37.7
<=49	56.2	16.4	2.8	24.7	80.8	+58.7
<=54	62.4	10.1	5.0	22.5	84.9	+79.1
<=59	66.3	6.2	8.6	18.8	85.2	+88.1
<=64	69.7	2.9	13.8	13.7	83.4	+81.0
<=69	71.3	1.2	17.9	9.6	80.9	+75.4
<=74	72.1	0.4	21.6	5.9	78.0	+70.2
<=79	72.5	0.0	24.8	2.7	75.2	+65.8
<=84	72.5	0.0	26.3	1.2	73.7	+63.8
<=89	72.5	0.0	27.2	0.3	72.8	+62.5
<=94	72.5	0.0	27.4	0.0	72.6	+62.2
<=100	72.5	0.0	27.5	0.0	72.5	+62.1

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

Figure 13 (Fourth-quintile (80th-percentile) line): By score cut-off, the percentage of all households who are targeted (that is, score at or below the cut-off), the percentage of targeted households who are poor (that is, have consumption below the poverty line), the percentage of poor households who are targeted, and the number of poor households who are successfully targeted (inclusion) per non-poor household mistakenly targeted (leakage), scorecard applied to the 2009 validation sample

Targeting cut-off	% all HHs who are targeted	% targeted HHs who are poor	% poor HHs who are targeted	Poor HHs targeted per non-poor HH targeted
<=4	0.6	100.0	0.9	Only poor targeted
<=9	2.5	100.0	3.5	Only poor targeted
<=14	5.4	100.0	7.5	Only poor targeted
<=19	11.5	100.0	15.9	Only poor targeted
<=24	18.1	100.0	24.9	Only poor targeted
<=29	25.2	100.0	34.7	2,313.5:1
<=34	32.8	99.9	45.2	1,253.0:1
<=39	41.2	99.2	56.4	128.7:1
<=44	50.5	97.9	68.2	47.6:1
<=49	58.9	95.3	77.4	20.2:1
<=54	67.5	92.6	86.1	12.5:1
<=59	75.0	88.5	91.5	7.7:1
<=64	83.5	83.5	96.1	5.1:1
<=69	89.2	80.0	98.4	4.0:1
<=74	93.8	77.0	99.5	3.3:1
<=79	97.3	74.5	100.0	2.9:1
<=84	98.8	73.4	100.0	2.8:1
<=89	99.7	72.7	100.0	2.7:1
<=94	100.0	72.6	100.0	2.6:1
<=100	100.0	72.5	100.0	2.6:1