Public Policy 253 - Agricultural and Resource Economics 253
Fall 2004

Poverty Assessment in Guatemala
Homework Assignment #2
Due in class on Monday, October 11

I. Background on Poverty Assessments

Poverty assessments are a key World Bank instrument to design poverty reduction strategies. In particular, these assessments review levels and changes over time and across regions in poverty and inequality indicators, and they are used to evaluate and develop strategies to reduce poverty. Information and guidelines on poverty assessment can be found on the World Bank Poverty Assessment webpage:
http://www.worldbank.org/poverty/wbactivities/pa/

The Guatemala Poverty Assessment Report is accessible through that page:
Poverty assessments: Latin America and the Caribbean
Guatemala: 2003 Poverty in Guatemala

Poverty Assessment are usually largely based on information derived from household surveys conducted as part of an LSMS (Living Standard Measurement Survey). You can find information on the available LSMS at:
http://www.worldbank.org/lsms/

The data for Guatemala, collected by the National Institute for Statistics (INE) in the first National Survey of Living Conditions (ENCOVI), can be retrieved from this site. We have extracted some of this information and posted in Stata format on the homepage for the course.

II. Critical review of the Guatemala Poverty Assessment

2.1. Literature Review
Read the Executive Summary (pp. 11-28) and Chapters 2 and 3 (pp. 35-57) of the Guatemala report. In not more than a couple of pages, indicate:
What indicators of poverty and inequality did the report use?
Summarize the main results of the poverty assessment
Summarize and critically discuss the policy recommendations made.

2.2. With a focus on the heterogeneity of poverty, indicate which aspects of poverty appear to be most in need of detailed analysis when making a poverty assessment for Guatemala.

III. Descriptive statistics

The file that you are given gives most of the variables that are used in Part I of the report. It contains observations on 7276 households, giving region of residence, demographic characteristics, education, job characteristics of the head of household, as well as some indicators on the dwelling. For each household, you also have the consumption per capita and the income per capita in quetzals (Q). The poverty line is 4318.6 Q per capita and the extreme poverty line is 1911.7 Q per capita.

Note about the sample design. Like for most household surveys, the sample was not a random sample of the population, but a stratified random sample with surveys grouped in clusters. This is an efficient way to design a survey that ensures sufficient representation of small segments of the population. The "cost" of this method is that each observation carries a "weight" which in some way tells the number of units it represents in the whole population. In principle all the statistics that you calculate with such a data should be done taking into account this weighting scheme. Stata has a special series of command just for that. Those are svy--- (svymean svytest, svytab, …). For those of you that are already familiar with

Stata, and wants to do the analysis with those weights, you could do it. The household sampling scheme is characterized by:

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svyset strata  region;
svyset psu  upm;
svyset pweight  factor3;
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For the other students, I suggest that we pretend that we have a random sample and forget about the sampling scheme. The results will be quite different from what you will read in the Poverty Assessment. Just see this assignment as a first step for you to learn Stata and how to do a poverty analysis.

Note about computing poverty rate at the individual level: The data that you have are at the household level. Here are some hints on how to compute poverty (or other characteristics) at the individual level.

For each household, you have for example the number of children 0 to 6 years old (n0_6). To compute the total number of poor children, you would need to get the sum of all these children in poverty. Let's say you have a variable p0 equal to 1 if the household is poor. Then children in poverty in each household are n0_6*p0, and you can compute the sum over your sample of this number. To compute the poverty rate of children, you need to give a weight to the household that is proportional to its number of children. And similarly for other groups, such as female, male, old people, for which there are several in each household.

3.1. Correlates of poverty

Following the World Bank's guideline (see Lok-Dessalien in Reader), provide a description of the poor (in contrast to the non-poor) answering the following questions: Who are the poor (e.g., gender, ethnicity, age group, education, family size, etc.)? Where do they live (e.g., rural/urban, region)? What do they do (e.g., employment, access to land)? What are the main characteristics of their poverty (e.g., dwellings, access to public goods, etc.)? You can do a table with the average such characteristics for the poor and for the non-poor, and analyze the differences in means or percentages between poor and non-poor for each characteristic. Make sure to make a test of the significance of these differences (t-test for difference in means, chi2 for difference in percentages).

3.2. Poverty profile:

Draw the poverty profile and calculate the P0, P1, and P2 indicators for the sample population.

3.3. Population subgroups

Calculate P0 for the following dichotomies of the sample population into subgroups that appear critical in analyzing poverty.

Rural vs. urban

Indigenous vs. non-indigenous

Female-headed vs. male-headed household

More educated (more than primary school) vs. less educated (primary school or less)

Access to land: < 3.5 ha vs. > 3.5 ha

Other contrast that you may deem important based on your reading of the Poverty Assessment (if needed).

Discuss what this is telling you about poverty in Guatemala.

3.4. Poverty profiles for population sub-groups

Draw the poverty profiles for one of the population dichotomies among the above that you find to be most important in characterizing poverty in Guatemala.

3.5. Shares in total poverty

For this same dichotomy, compute the contribution that each subgroup makes to total poverty according to the P0 indicator.

3.6. Inequality analysis

Calculate the Gini coefficient for the two sub-groups in the dichotomy you analyzed in 3.4 and 3.5. Draw the Lorenz curve for each subgroup on a same graph.

3.7. Conclusions

Now reflect on your poverty and inequality assessments to draw conclusions that you would like to communicate to the authors of the report.