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Discussion Paper 147

Are Neighbors Equal? Estimating Local Inequality in Three Developing Countries

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One important strand of research in the area of political economy and public policy has focused on the appropriate level of governmental decentralization for financial and decisionmaking power regarding public service provisioning and financing. The advantage of decentralization—making use of better community-level information about priorities and the characteristics of residents—may be offset by a greater likelihood that the local governing body is controlled by “elites” to the detriment of weaker community members.

The Need to Determine Local-Level Inequality

While the level and heterogeneity of local inequality are determinants of the relative likelihood of capture at different levels of government, most theoretical predictions are ambiguous, and there is a need for empirical research into the causes of political capture. In addition to questions of political capture, decentralization also has the potential weakness that community-level decisions may be less likely to reflect social and economic costs and benefits across larger spatial scales.

Detailed information on local-level inequality has traditionally been available only from case studies that focus on one or two specific localities. Construction of comprehensive “geographic profiles” of inequality across localities has been held back by limitations of conventional distributional data.

This paper takes three developing countries—Ecuador, Madagascar, and Mozambique—and implements in each a recently developed methodology to produce disaggregated estimates of inequality. The countries are very unlike each other—with different geographies, stages of development, quality and types of data, and so on. The methodology works well in all three settings and produces valuable information about the spatial distribution of poverty and inequality within those countries—information that was previously not available.

Data

Detailed household surveys that include reasonable measures of income or consumption are samples, and thus at low levels of disaggregation they are rarely representative, or of sufficient size, to yield statistically reliable

estimates. In the three countries examined here, the lowest level of disaggregation possible using sample survey data is for regions that encompass hundreds of thousands of households. Conversely, census (or large sample) data of sufficient size to allow disaggregation either have no information about income or consumption, or they measure these variables poorly. This paper combines these two types of data to take advantage of the strengths of each.

The survey data for each country comes from nationally representative household living standards surveys. All three surveys were conducted in the mid-1990s, with sample sizes ranging from 4,400 to 8,250 households. Each survey provides detailed information on such topics as food and nonfood consumption, labor activities, agricultural practices, entrepreneurial activities, and access to services such as education and health. Per capita consumption, a conventional household-level welfare measure, was calculated from each survey.

Unit record population census data were obtained for the period corresponding to the household surveys. The censuses included limited socioeconomic information, such as housing characteristics, education levels, and asset ownership. In Madagascar, the survey and census data were supplemented by a set of spatial and environmental outcome data at the district level.

Methodology

Using a household survey to impute per capita expenditures, y , for each household enumerated in the census, we estimate inequality at a finely disaggregated level. The

idea is straightforward. First, a model of y is estimated using the sample survey data, restricting explanatory variables to those either common to both survey and census, or variables in a tertiary data set (such as a GIS database) that can be linked to both of

those data sets. Then, letting W represent a measure of inequality, we estimate the expected level of W , given the census-based observable characteristics of the population of interest using parameter estimates from the “first stage” model of y . The same approach could be used with other household measures of well-being such as assets, income, or employment, and other aggregate welfare measures, such as poverty indices.

Inequality within communities accounts for three-quarters of total inequality, but some communities have much higher inequality than others.

Results and Discussion

Applying this methodology to the three countries, we show that the mean consumption, poverty, and inequality estimates produced from census data match well the estimates calculated directly from the countries' surveys (at levels of disaggregation that the survey can bear). The precision of the inequality estimates produced with this methodology depends in part on the degree of disaggregation. In all three countries, our inequality estimators allow one to work at a level of disaggregation far below that allowed by using survey data alone.

We then examine the importance of local-level inequality by decomposing national inequality into a within-community and between-community component, where we successively redefine community to correspond to lower levels of disaggregation. We find that in all three countries, the within-community share of overall inequality remains dominant—even after we have disaggregated the country into a very large number of small communities.

These results might be construed to suggest that there is no basis for expecting communities to exhibit a greater degree of homogeneity than larger units of aggregation. To the extent that local-level inequality is correlated with factors (such as elite-capture) that might threaten the success of local-level policy initiatives (such as decentralization and community-driven development), this finding sends a cautionary note where initiatives in local-level decisionmaking are being explored.

It is important to note, however, that decomposing inequality into a within-group and between-group component effectively produces a summary statistic that can mask important differences. Upon closer examination of the distribution of communities in our data sets, we find that in all three countries, a very high percentage of within-community inequality is perfectly consistent with a large majority of communities having levels of inequality well *below* that of the national level. We illustrate how

this seemingly paradoxical finding is in fact fully consistent with the decomposition procedure.

Finally, given that in the three countries we observe a significant degree of heterogeneity in inequality levels across communities, we explore some simple correlates, not so much to explain local inequality in a causal sense, but to explore the extent to which inequality is correlated with geographic characteristics and whether this correlation survives the inclusion of some basic economic and demographic controls.

Consistently, we find that geographic characteristics are strongly correlated with inequality, even after controlling for demographic and economic conditions. The correlation with geography is observed in both rural and urban areas. In rural areas, population size and mean consumption at the community level are positively associated with inequality, while in urban areas that is not the case. In both rural and urban areas, populations with large shares of elderly tend to be more unequal. In Madagascar, populations with large shares of children and large shares of individuals aged 50–59 are consistently more equal. In Ecuador, this is true only in rural areas.

Keywords: inequality, decentralization, small-area estimation, Ecuador, Madagascar, Mozambique

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