Poverty and Inequality in Southern Africa: Results from a Poverty Mapping Study

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Abstract

The scope of research on poverty in developing countries has often been confined to individual-level factors, such as education, sex, and age, that are associated with levels of income and consumption. Work on inequality has generally been confined to the country level or to other broad aggregate units. But these research traditions have tended to overlook determinants of the spatial distribution of poverty and inequality. The World Bank and its research partners have recently encouraged national statistical offices to link census and survey data in detailed poverty mapping exercises. In this paper, we examine such data for South Africa, Malawi, and Mozambique, using spatial econometric techniques to analyze the geographic correlates of poverty and inequality. We focus on how rural poverty and inequality is affected by proximity to urban areas, and examine the effects of access to roads, ports, and other networks for the distribution of goods and services.

The scope of research on poverty in developing countries has often been confined to the individual-level factors, such as education, sex, and age, that are known to be associated with levels of income and consumption. Work on inequality has generally been confined to the country level or to other broad aggregate units. But these research traditions have tended to overlook potentially important factors that lie between the individual and country levels: in particular, those associated with place and the spatial distribution of poverty and inequality. In the past few years, the World Bank and its research partners have taken steps to fill the gap, by encouraging national statistical offices to join census and survey data in detailed mapping exercises whereby poverty and inequality are summarized at the level of small spatial units country-wide. The resulting maps—some 40 countries have joined in the exercise to date—make it plain that there is a remarkable amount of within-country spatial variation in both poverty and inequality. The maps have proved to be a valuable aid to

policy in documenting the geographic basis for targeting poverty alleviation programs.

But while substantial within-country spatial variation in poverty and inequality has been documented, relatively little has yet been done to explore the determinants of this spatial variation. In this paper, we examine poverty mapping data for South Africa, Malawi, and Mozambique, using spatial econometric techniques to analyze the geographic correlates of poverty and inequality. We give particular attention to how rural poverty and inequality is affected by proximity to urban areas, and examine the effects of access to roads, ports, and other networks for the distribution of goods and services.

The paper can be read as an attempt to quantify the costs of rural isolation from the economic and social resources accessible to (some) urban populations. It is the within-country counterpart to the new body of research on poverty in land-locked countries. Both within and across countries, we believe, isolation from key networks of trade and economic distribution acts much like a "tax" on consumption, and is doubtless one of the factors that keeps poverty rates from falling.

The data available to us span the range of measures commonly employed in studies of poverty and inequality. The measures bearing on absolute poverty include mean consumption expenditures in the administrative unit; the poverty head-count; and the poverty gap. Inequality measures include the Gini coefficient, several variants of Generalized Entropy indices, and the Atkinson index of aversion to inequality evaluated at several parameter values. These are all predicted indicators based upon individual-level regression equations (estimated by national statistical offices with assistance from the World Bank) that included education, age, and other individual-level explanatory variables. Our analysis seeks to determine the value added by place-based variables that were not factored into the individual-level regressions. The place-based variables include measure of distance to urban areas of various sizes, distance to national borders, to ports, rail networks, navigable rivers, and networks of primary, secondary, and tertiary roads. Some characteristics of the local terrain that would be expected to affect the costs of transport and trade are also included, such as elevation and its variation within the spatial unit, as well as measures of soil quality.