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Rural infrastructure, transactions costs and market participation in Kenya

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Abstract

We develop a conceptual framework for quantifying fixed transactions costs facing semi-subsistence households. Using household survey data from a sample of 324 Kenyan maize farmers, we jointly estimate household supply and demand schedules and transactions costs. Econometric results indicate that on average the ad valorem tax equivalent of fixed transactions costs for households in our sample is 15%. Additional analysis indicates that economic isolation is positively associated with the size of transactions costs. To the best of our knowledge, ours are the first empirical estimates of the magnitude of fixed transactions costs for agricultural households in developing countries.

JEL classification: O1
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1. Introduction

The development and dissemination of improved agricultural technologies has long been thought to be an important vehicle—perhaps the most important vehicle—for reducing poverty in developing countries. The logic behind this contention is straightforward. The majority of poor people in LDCs historically have been, and continue to be, located in rural areas (Naylor and Falcon, 1995). Agriculture is generally the primary

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source of income for the rural poor, both through crop production activities and via employment in agriculture and agriculture-related industries (Reardon et al., 1998; Haggblade et al., 1989). By virtue of its ability to improve agricultural productivity, technological change is thus seen as playing a pivotal role in rural poverty alleviation.

There is by now little remaining doubt that the widespread adoption of improved seeds, fertilizers, and other agricultural technologies since the outset of the Green Revolution has had a profound positive impact on aggregate incomes, including the incomes of the poor (Byerlee, 1996). Considerable concern remains, however, about the spatial distribution of the benefits of new agricultural technologies. Most of the major success stories in international agricultural research have occurred in production environments characterized by an assured water supply and other favorable agronomic conditions. Comprehensive studies of the distributional impacts of technological change have generally come down on the side of maintaining a strong emphasis on research strategies oriented toward these favored production environments on both efficiency and equity grounds, due to technology spillovers (from areas where the new technologies are best adapted to other, less-suitable locations) and economic spillovers mediated through product and factor markets.[1] Despite the moderating influence of these spillover effects, persistent interregional income disparities commonly exist between "high-potential" and "low potential" agroecological zones (Renkow, 2000). In addition, existing evidence suggests that the incidence of rural poverty—especially severe poverty—is generally greater in environmentally fragile locations such as the Andean highlands or the semiarid tropics of India (Leonard et al., 1989).

For those locations where external conditions limit a household's ability to market agricultural products or increase agricultural productivity, alternative public investments may well hold greater potential for poverty alleviation than additional agricultural research. This view is supported by recent work indicating the existence of a significant link between poverty reduction and public infrastructure investments in India (Fan and Hazell, 1999).

Infrastructure investments can work in a number of ways to enhance the returns to resources commanded by rural households. By lowering the transactions costs of market exchange, they can boost net returns to agricultural production. They can lead to greater availability (at lower cost) of necessary agricultural inputs such as fertilizers and chemicals, and thus improve welfare by increasing agricultural productivity. Perhaps more importantly, improved transportation and communications infrastructure facilitates spatial integration of product and factor markets, both in the agricultural and nonagricultural sectors.

[1] The reasons for this have varied with the particular structural characteristics in the country or set of countries considered. In Colombia, the pro-poor impact of falling food prices was found to exercise the dominant influence on overall distribution of benefits from HYV rice adoption (Scobie and Posada, 1978). In Pakistan, it was found that all residents (including the poor) of marginal production environments were significantly less dependent on agricultural income than were their counterparts in favored irrigated areas (Renkow, 1993). In Southeast Asia, labor mobility and the responsiveness of agricultural workers to perturbations in labor markets meant that labor demand shifts accompanying HYV adoption in favored production environments benefited poor workers located in areas in which adoption was significantly lower (Coxhead and Warr, 1991; David and Otsuka, 1994).