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Social capital and transaction costs in millet markets

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Abstract

In sub-Saharan Africa, transaction costs are believed to be the most significant barrier that prevents smallholders and farmers from gaining access to markets and productive assets. In this study, we explore the impact of social capital on millet prices for three contrasted years in Senegal. Social capital is approximated using a unique data set on mobile phone communications between 9 million people allowing to simulate the business network between economic agents. Our approach is a spatial equilibrium model that integrates a diversified set of data. Local supply and demand were respectively derived from remotely sensed imagery and population density maps. The road network was used to establish market catchment areas, and transportation costs were derived from distances between markets. Results demonstrate that accounting for the social capital in the transaction costs explained 1–9% of the price variance depending on the year. The year-specific effect remains challenging to assess but could be related to a strengthening of risk aversion following a poor harvest.

Keywords: Economics

1. Introduction

In sub-Saharan Africa, the functioning of food markets is jeopardized by several barriers that prevent smallholders and farmers from gaining access to markets

and productive assets. The most significant of these barriers is believed to be the transaction costs, the observable and hidden costs associated with arranging and carrying out a transaction. The role that social capital might play in shaping these costs is a research question that has captured the attention of many during the last two decades (Durlauf and Fafchamps, 2005). In this paper, we refer to the concept of social capital as introduced by Putnam et al. (1994), that is, the “features of social organization, such as trust, norms, and networks that can improve the efficiency of society” (p. 167).

Social capital can lower transactions costs by, *e.g.*, reducing the information and search costs, increasing trust or cutting down the administrative burden (Fafchamps, 2006; Fafchamps and Minten, 2001; Fukuyama, 1995; Knack and Keefer, 1997; Woolcock and Narayan, 2000). If agents are not well informed about price differences across markets, time periods or buyers and sellers of different types, or if such information is asymmetric, they cannot engage in optimal arbitrage (Tollens, 2006). On the other hand, trust helps to mitigate the abuse that can occur during the purchase and sale of commodities (non-delivery, late payment, deficient quality, incorrect quantity...) (Bigsten et al., 2000). As they can more easily find and screen each other, well-connected agents will also be more likely to trade together (Barr, 2000). However, the effect is not necessarily positive as overreliance in the activities and decisions of relatives can lead to overpricing due to traders’ errors (Levine et al., 2014; Portes, 2014). Nevertheless, limited information and mistrust generally results in inefficient transmission of prices due to local surpluses or scarcities, which ultimately affects both producers and consumers.

According to Durlauf and Fafchamps (2005), the literature on the effects of social capital can be divided into individual and aggregate studies. On the one hand, individual studies explore the effect of social capital on some individual outcomes. For instance, Fafchamps and Minten (2002) found a significant effect of social capital on total sales of food traders in Madagascar, Mawejje and Terje Holden (2014) highlighted that social capital can help Ugandan household to receive higher prices for coffee and Grootaert (1999) demonstrated the effect of social capital household expenditure in Indonesia. On the other hand, aggregate studies mainly focused on the relationship between social capital and per capita output growth at a high level of aggregation, *e.g.*, a country or a region (Beugelsdijk and Schaik, 2003; Guiso et al., 2004). The standard approach of all these studies is generally to run linear regressions on cross-sectional data with some outcome of interest against empirical proxies for social capital and a set of controls. The significance of the coefficients of the social capital variables allows to conclude on their effect on the outcome. One challenge of empirical work on social capital is therefore to identify observable variables that can be used as proxies for social capital (Portes, 2000). An array of variables have been proposed in empirical papers and include the number of known traders, the number

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