Price Fluctuations and Supply Chain Credit to Cocoa Farmers in Sierra Leone

In perfectly competitive markets, higher valued agricultural products should translate into higher prices, putting more money in the pockets of farmers. However, changes in value tend to reach producers at a lower rate in developing economies, which may be a result of the nature of the relationships between farmers and traders in this context. In Sierra Leone, when researchers offered a bonus to traders that mimicked a market fluctuation, farmers were not offered higher prices, but traders increased the amount of credit they offered farmers by 50 percent, suggesting value is passed to farmers through a channel other than price.

Policy Issue

Rural areas of developing economies often lack formal financial institutions. In their absence, agents in the rural agricultural sector have emerged as a substitute source of credit for farmers and households. It is common practice, for instance, for an agricultural buyer to provide credit to farmers before the harvest under the agreement that the farmer will sell all produce to that trader at a predetermined price at the time of harvest. A long tradition in development economics has observed that relationships such as these lead to transactions that are interlinked: the price is determined jointly with the terms of the credit contract. Specifically, since the loan benefits the farmers by providing cash when they need it, the existence of a credit contract may lower the price farmers receive for their product.

This research explores how these interlinked transactions influence how market fluctuations “pass through” to the farmers. In a perfectly competitive market, a higher valued product should translate into higher prices, putting more money in the pockets of producers. However, changes in value tend to reach producers at a lower rate in developing economies, which may be a result of the nature of these interlinked relationships. This research examines if value is passed to producers through other less visible channels, in particular, through credit.

Evaluation Context
Cocoa is Sierra Leone’s largest export crop by value, comprising 8.6 percent of exports in 2009. The cocoa trade within the country is highly fragmented across many traders with many links, similar to other agricultural markets in developing economies: farmers sell to traders, who sell to wholesalers in small towns, who in turn sell to exporters in larger towns, who in turn sell to buyers at the port. The provision of loans by traders to farmers is a defining characteristic of this industry. Traders offer farmers credit before and during the harvesting season, which typically lasts from the beginning of the rainy season in July until early January of the following year. Traders then allow farmers to repay the loan in cocoa by selling at a below market price for subsequent sales until the loan has been repaid.

**Details of the Intervention**

To examine how value is passed to producers, researchers partnered with five privately owned wholesalers in Sierra Leone’s cocoa producing Eastern Province to conduct a randomized evaluation. These wholesalers, three in the town of Segbwema and one each in the towns Pendembu and Kailahun, collect cocoa in their warehouses and then sell it on to exporters in the provincial capital of Kenema. The sample included 80 traders, comprising almost the complete set of traders who do business regularly with these wholesalers.

Researchers grouped traders in pairs and then randomly allocated one trader to treatment in each of the pairs. The research team then paid the randomly selected traders in the treatment group a bonus of 150 Leones (US$0.04) for each pound of high quality cocoa they sold, the equivalent of 5.6 percent of the average wholesale price. The bonus was designed to mimic fluctuations in the market price received by traders. Several months later, they measured how this bonus had affected prices and credit delivered to farmers across the different villages in which the traders operated.

**Results and Policy Lessons**

Using detailed data on the prices and credit supplied to farmers, researchers found that the bonus translated into a negligible price increase for farmers. However, it substantially increased credit provision. Farmers selling to traders that received the bonus were 11 percentage points more likely to receive credit from the traders than those selling to traders in the comparison group (23 percent vs. 12 percent). In addition, the price response was lower in markets where this credit response was higher, suggesting that these two response margins (price and credit) are substitute.

The evaluation confirms that market conditions faced by the intermediary substantially affect the supply of credit to farmers, and that market fluctuations do not necessarily “pass-through” to the farmer in the form of higher prices, but rather through a less obvious channel: the provision of credit. These results provide an explanation for why price changes reach farmers in developing economies at relatively low rates.

**Sources**
