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### Can Agricultural Traders be Trusted? Evidence from Coffee in Ethiopia

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Summary. — Traditional food marketing systems in developing countries are often not trusted. In consequence, policy makers frequently try to regulate them and modern marketing arrangements are increasingly emerging to address some of their presumed deficiencies. However, it is unclear how trustworthy these markets actually are. The purpose of this study is to look at these issues in the case of coffee marketing in Ethiopia. Coffee markets in Ethiopia present an interesting case study due to the high price and quality differentiation linked to a number of both easily and not so easily observable characteristics. Moreover, modern marketing practices, such as modern retail, branding and packaging, are becoming increasingly common in Ethiopia's urban coffee markets. When we define and examine trustworthiness in the Addis Ababa coffee market as a function of weights and quality, we find that traditional traders are relatively trustworthy on observable quality characteristics and weights. However, there is a consistent pattern of over-representation of not so easily verifiable quality characteristics. We further find that modern marketing outlets or formats, including modern domestic retail and branded packaged products, deliver higher quality at a higher price, but are not more trustworthy than traditional marketing arrangements in terms of these dimensions of trade transactions.

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#### 1. INTRODUCTION

There is a long-standing debate on the appropriate role of institutions in the governance of markets. This debate is especially strong in developing countries where market institutions are often weak and the performance of markets is perceived as falling short of their expected roles and functions (McMillan, 2003; Sahn, Dorosh, & Younger, 1999). This is a critical issue for agricultural and food markets in most developing countries considering the important role that these markets play in the livelihoods of poor farmers and the large share of food products in household consumption baskets. As the functioning of food markets in these settings is often mistrusted, governments recognize an important role for developing regulations and interventions, such as marketing boards and parastatals, to foster honest behavior among market participants (Jayne, Zulu, & Nijhoff, 2006; Kherallah, Delgado, Gabre-Madhin, Minot, & Johnson, 2000; Cummings, & Gulati, 2007; Tschirley & Jayne, 2010). The arguments for such market interventions are related, among others, to high food price volatility (e.g., Rashid et al., 2007; Timmer, 1989), adulteration (e.g., Arora, Sharma, Raj, Ram, & Kishore, 2004; Maxwell & Slater, 2003; Unnevehr, 2000; Xin & Stone, 2008; Xiu & Klein, 2010), and the uncompetitive behavior of traders (e.g., Masters, 2008; Osborne, 2005).

This mistrust has ramifications on the incentives for suppliers to adhere to proper production practices and to supply quality goods and for traders to engage in proper trading practices and on the costs of search and transactions within market systems. Modern marketing practices—such as modern retail, branding, and standardized packaging—are emerging in developing country markets partly to deal with some of these trust issues and to reduce search costs for consumers who are therefore often attracted to the convenience of these modern marketing practices, including the development of brands (Reardon, Chen, Minten, & Andriano, 2012; Reardon &

Timmer, 2007; Traill, 2006). The quality and quantity of the product supposedly can be better trusted in branded goods, so consumers are often willing to pay significantly higher prices for them (Anholt, 2005).

However, few researchers have determined empirically whether traders can actually be trusted regarding the quantity and purported quality of food and agricultural produce they offer to consumers. The purpose of this study is to look at these issues in the case of coffee marketing in Ethiopia. Coffee markets in Ethiopia present an interesting case study due to the high price and quality differentiation linked to a number of both easily and not so easily observable characteristics. Moreover, modern marketing practices, such as modern retail, branding and packaging, are becoming increasingly common in Ethiopia's urban coffee markets.

We address two research questions. First, we study whether traditional traders can be trusted by testing to what extent they cheat with weights or the purported quality of the coffee they sell. To do so, we use a novel method where produce was purchased and quality and quantity was assessed by a third-party. Second, modern marketing practices—such as packaging, branding, and modern retail outlets—are presumed to be more trustworthy because they are usually coupled with more reliable supply chains (Reardon & Timmer, 2007). We test to what extent such modern marketing practices lead to different behavior within the urban coffee market of Ethiopia. 4

We find that traditional coffee traders are relatively trustworthy with weights and with easily observable quality indicators, such as whether or not the coffee beans have been washed. But they are less trustworthy on less easily detectable quality characteristics, such as the zone of origin of the coffee. We find that modern marketing practices, including modern retail outlets, modern packaging, and trademark branding, deliver more processed and higher quality products, albeit at

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a higher price. However, we do not observe significant improvements in trustworthy behavior among coffee traders who employ these modern marketing practices. Such traders perform similarly to traditional coffee traders in this regard.

The structure of the paper is as follows. A conceptual framework is presented in Section 2. In Section 3, we give some background on urban coffee distribution in Ethiopia. Section 4 discusses the data collection methodology and provides some descriptive statistics. In Section 5, we use price data from the export markets to get a sense of what coffee characteristics are valued in coffee markets. In Section 6, we assess the extent to which traders cheat with weights and product quality. Section 7 offers the conclusions.

#### 2. CONCEPTUAL FRAMEWORK

A long-standing economic literature has tried to understand behavior in agricultural markets in developing countries and to model the role of appropriate institutions to ensure that prices play their expected allocating role (e.g., Fafchamps, 2004; Greif, 1993; Greif, Milgrom, & Weingast, 1994; Milgrom & North, 1990). Relevant to our study, Fafchamps, Vargas-Hill, and Minten (2008) construct a simple conceptual framework, building on the seminal Lancaster, 1966 model and extend it with a costly information set-up. They model the provision and price premiums in an agricultural market for a consignment with an attribute k, inspection costs c needed to verify that attribute k, a price premium \( \alpha \) observed in the market for the attribute, and consumer utility levels U<sub>1</sub> and U<sub>0</sub> for the consignment with and without the attribute. Using a number of simplifying assumptions, they show that: (1) when c = 0,  $\alpha^* = U_1 - U_0$ ; (2) when  $0 < c < \bar{c}$ ,  $\alpha < \alpha^*$ ; (3) when  $\bar{c} < c$ ,  $\alpha = 0$  (where  $\bar{c}$  indicates prohibitively large inspection costs).

These results imply that when inspection costs are small, price premiums reflect the utility differences for consumers but when inspections costs increase, price premiums for the attribute decrease or completely disappear. The model also leads to a number of predictions with respect to cheating by traders. In case (1) with no or low inspection costs (the "easily verifiable" quality characteristics), there is no incentive to cheat for the trader as buyers can easily inspect and they will therefore pay for the additional benefit of an attribute. In case (3) with prohibitively large inspection costs  $\bar{c}$ , there are no price premiums and cheating does not pay either. In case (2), it can be shown that the gains of inspecting by the buyers—and reversely, the benefits of cheating by the seller—falls with the level of trust (as measured by the probability that the seller is telling the truth) between buyer and seller and with the cost of inspecting and increases with the price premium (Fafchamps et al., 2008).

In the two latter cases, there is under-provision of the attribute and institutions are ideally developed to address this under-provision. This can be done in different ways through (1) warranties; (2) development of widely used standards; (3) third-party certification of attributes; or (4) reputation and branding. In the atomistic agricultural markets of most developing countries, warranties are however difficult to enforce and improved information, repeated transactions, and vertical integration can then possibly solve the under-provision (e.g., Fafchamps, 2004; Overå, 2006; Tadesse & Shively, 2013). The development of widely used standards might reduce the inspection costs in agricultural commodity sectors and lead to a better provision of wanted attributes (e.g., Swinnen, Vandemoortele, Deconinck, & Vandeplas, 2015; Swinnen &

Vandeplas, 2011). The use of third-party certification is costly but increasingly being practiced in modern and global value chains. It has been shown that social welfare can be improved through such enhanced provision of information (Bai, 2015; Elbasha & Riggs, 2003; Golan, Kuchler, & Mitchell, 2001). Finally, regarding reputation and branding, firms might build up their own private trustworthy supply chains through modern marketing practices and sell goods through brands that possibly convince consumers of the appropriate level of quality attributes supplied (e.g., Carriquiri & Babcock, 2007; Costanigro, Bond, & McCluskey, 2012).

## 3. BACKGROUND ON URBAN COFFEE DISTRIBUTION IN ETHIOPIA

In contrast to most coffee exporting countries, Ethiopia is itself a major consumer of coffee, which plays an important role in local culture and social gatherings. In principle, all marketed coffee in Ethiopia has to go through one of the quality assessment laboratories of the Ethiopian Commodity Exchange (ECX), a modern commodity exchange that was established in the middle of 2008, to determine its quality. If the quality of coffee is judged to be of export quality, then it must be exported and cannot be sold locally. This export requirement is closely monitored by the Ministry of Trade, making the local retail sector a residual market (see Minten, Stifel, & Tamru, 2014; Minten, Tamru, Kuma, & Nyarko, 2014).

Interviews with different key stakeholders in September 2013 enable us to present a general description of the coffee distribution system in Addis Ababa. This is provided in Figure 1. First, legally, all coffee consumed in the city should originate from ECX. From December 2008 onward it became mandatory for private traders to sell their coffee through the commodity exchange. ECX trades standard coffee contracts, based on a warehouse receipt system, with standard parameters for coffee grades, transaction size, payment, and delivery. The first-level quality control is decentralized and undertaken in nine liquoring and inspection units in major production areas (Gabre-Madhin, 2012).

Second, there are about 40–45 wholesalers in the city. Out of these 20–25 are urban *coffee collectors* who buy coffee from the ECX. They may also buy directly from rural collectors although this is not legally allowed. <sup>5</sup> The main clients of these urban collectors are urban distributors or small-scale roasters. The other half (about 20 individuals) of the wholesalers are

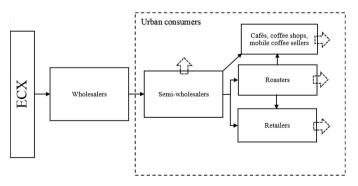


Figure 1. Formal coffee distribution system in Addis Ababa. Note: Solid lines mark transactions between traders, dashed arrows mark transactions from traders to consumers. ECX refers to Ethiopian Commodity Exchange. Source: Based on authors' discussions with different stakeholders.

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