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The Ambivalent Impact of Coffee Certification on Farmers' Welfare: A Matched Panel Approach for Cooperatives in Central Kenya

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Summary. — Certification is promoted to improve rural welfare through better market access and improved agricultural practices. We compare net effects of Fairtrade- and Utz-Certified coffee production in Central Kenya, using a matched panel from 218 farm-households that belong to three cooperatives and were visited twice in 2009 and 2013. We distinguish between effects at field, farm, household, cooperative, community, and market levels. Both certification regimes improved coffee returns, but Fairtrade was more effective in coffee processing, whereas Utz contributed to productivity. Under stagnating coffee prices, Fairtrade farmers increased their coffee specialization, while Utz farmers reduced coffee areas but increased yield.
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1. INTRODUCTION

Certification of coffee producers is frequently suggested as a useful strategy for improving the position of smallholders in the market. It started with the launch of the Fairtrade label in 1988 and was followed by several other standards that are promoted either by voluntary agencies and/or by private coffee companies. The label of Utz Certified has been launched in 2002 with the aim to enhance responsible coffee certification by established private companies. In recent years, other company coffee labels were established by Starbucks (C.A.F.E. Practices) and Nestle (AAA). [1] The Common Code for the Coffee Community (4C) provides a baseline standard for stakeholders in the coffee sector to address sustainability issues in production and sourcing at a pre-competitive manner.

Various coffee labels rely on rather different strategies for enhancing sustainable production and/or responsible trade. Whereas Fairtrade strongly focuses on reinforcing cooperative organization and membership representation, Utz Certified gives more attention to on-farm improvement of coffee practices for upgrading coffee quality. In a similar vein, Fairtrade guarantees producers a minimum price (and a premium payment for the cooperative); whereas Utz Certified relies on free market prices that recognize coffee quality improvements. The procedures for supporting farmers' welfare are thus focusing on different entry points of their local livelihoods (Ruben & Verkaart, 2011). In this article, we are therefore interested to trace impact pathways of these different strategies for farmers that have been involved in such labeling regimes for a substantial period of time.

Earlier studies on the impact of coffee labeling rely mostly on descriptive analysis and case studies regarding farmers' perceptions (Bacon, Mendez, Gomez, Stuart, & Flores, 2008; Jaffee, 2007; Ronchi, 2002). These studies tend to conclude that Fairtrade strengthens producer organizations and reinforces farmers' well-being, but usually do not consider a counterfactual of non-certified producers. Recent studies that rely on broader statistical data sets and matching procedures are more critical and usually find only modest income effects

(Jena, Chichaibelu, Stellmacher, & Grote, 2012; Valkila & Nygren, 2010; Ruben, 2008). To increase net cash returns for coffee growing households, improved yields seem to be more important than price premiums (Barham & Weber, 2012). Participation in Fairtrade networks reduces exposure to price variations, mitigates risk aversion, and enhances investment attitudes. A comparative analysis of a matched sample of different types of certified coffee producers in Northern Nicaragua finds that Fairtrade provides better prices but private labels support higher yield and better quality performance. Fairtrade can thus be helpful to support initial market incorporation, whereas private labels offer suitable incentives for subsequent quality upgrading (Ruben & Zuniga, 2011).

Coffee certification in East Africa is of a rather recent nature but has been rapidly expanding, representing currently 26% of the world's sustainable certified coffee supply. [2] Empirical studies on the effects of standards for smallholders provide diverse results. Riisgaard *et al.* (2009) compare the performance of different certification schemes of coffee growers in Uganda, Kenya, and Ethiopia and find only slight differences in crop quality and productivity performance and revenue outcomes. Bolwig, Riisgaard, Gibbon, and Ponte (2013) demonstrate that most coffee standards achieved impact under rather restricted conditions and suggest that more selective support and better-tailored interventions are required to reach tangible welfare outcomes. More positive findings are from Chiputwa, Spielman, and Qaim (2014) who find that Fairtrade certification increases household living standards by 30% and reduces the prevalence and depth of poverty. Ruben and Verkaart (2011) show that coffee standards in Kenya and Uganda provide rather different functions, with Fairtrade contributing to improved farmer organization and initial market access and Utz-certified enhancing the incentives for quality upgrading.

This article is based on a new and unique balanced panel dataset from coffee producers that belong to three different cooperatives located in *Kiambu* County, Central Kenya. The

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sample includes farmers certified with Fairtrade (since 2011), double certification of Fairtrade- and Utz-Certified (since 2009) and non-certified farms as a control group. The 218 farms in the sample were visited twice (in 2009 and 2013) and detailed data are collected on their production and farming activities, commercial engagement and linkages at cooperative and village levels. The survey focuses on 6 different impact levels: (1) coffee fields (land, labor, and input use in coffee, coffee yields, coffee renovation, etc), (2) farming systems (returns from other crops, off-farm work), (3) household livelihoods (income, expenditures, health, savings), (4) cooperative organization (technical assistance, trade services), (5) village and community networks (water and sanitation, social capital) and (6) value chains (coffee prices, sales). This multi-level framework enables us to disentangle the effects of certification and to identify strong and weak points of each labeling regime.

The remainder of the article is structured as follows. Section 2 provides an overview of earlier research on the effects of coffee certification on smallholder welfare, considering registered impact at micro (farm and household), meso (cooperative and village) and macro (value chain/market) level. Due attention is given to common fallacies in impact measurement related to self selection and endogeneity. Section 3 introduces the field sample in *Kiambu* County and outlines the methodological approach for estimation impact with balanced panel data. We rely on a matched difference-in-difference framework to assess the net impact of Fairtrade- and Utz-certified coffee production compared to non-certified producers. Section 4 discusses the empirical results and identifies major differences in impact between the coffee labels. The results are furthermore embedded in the discussion on different characteristics of certification regimes and related to general tendencies in local market development. Finally, Section 5 provided conclusions and policy recommendations for enhancing the potential impact of coffee certification on farmers' welfare.

2. IMPACT PATHWAYS OF COFFEE CERTIFICATION

Studies on the effects of certification for coffee production in rural communities and for the wellbeing of local farmers were initially based on anecdotal evidence, relying on qualitative interviews to capture stakeholders' perceptions. Some more quantitative data have been generated through comparative case studies of certified and non-certified farmers (Bacon, 2005; Jaffee, 2007) and sector-wide analyses that focused attention on price advantages and market shares of certified products (Raynolds & Wilkinson, 2007). In a similar vein, several studies compare different certification regimes and outline their effects for the adoption of improved farm management practices, coffee quality upgrading, and net marketing margins (Ruben & Zuniga, 2011; Valkila, 2009).

Rather recently, more robust studies regarding the socioeconomic impact of certification have been published that correct for selection bias (i.e., active, better-off farmers are likely to be among the first to participate in certification schemes) and also consider the likelihood of substitution effects (e.g., with the focus on certified crops, production of other crops or engagement in other non-farm activities might decrease). Most studies rely on evidence from South- and Central American countries where coffee certification started early. Field studies from (East) Africa are more recent and pay due attention to competing certification regimes.

A major difficulty for fully understanding the net effects and dynamic implications of coffee certification refers to the fact that simultaneously different mechanisms are in force that may influence several dimensions of farm-household welfare. Certification not only provides incentives for adjusting coffee production systems (plot level), but could also lead to changes in land use (farm-level) and in labor allocation (household level). In addition, most certification systems rely on social enforcement through engagement with farmers cooperatives (group level) and also involve external relationships with other neighboring farmers (community level). Finally, supply chain networks with traders and processors influence prices and marketing of certification regime (value chain/market level). This complex multi-layered framework of different interlinked mechanisms trough which certification may influence farm-household welfare deserves further analysis.

In order to be able to better disentangle the net effects of certification we developed an analytical framework that clearly distinguishes these different impact levels. Figure 1 provides a systematic picture of the different pathways through which certification could influence farm-household welfare. Key differences in impact pathways between coffee certification regimes are indicated through their intended incidence on either coffee production systems and market signals (Utz Certified) or on cooperative organization and community development (Fairtrade).

The original Fairtrade proposition offers farmers guaranteed minimum prices and an additional premium for community-level investments. Key attention is given to training for capacity development (often in partnerships with NGOs) in order to reinforce farmers' loyalty with the cooperative organization and to strengthen the cooperative bargaining position vis-à-vis traders and processors. Utz Certified—sometimes labeled as Responsible Trade—relies on strictly market-based prices, but intends to enhance farm-household welfare through coffee systems upgrading at plot level (e.g., improved agricultural practices; tree renovation, etc. with reliance on Farmers Field Schools) that is expected to result in better quality coffees that can receive a premium price at the market. In essence, Fairtrade expects that exogenous price certainty provides incentives to farmers to enhance their market integration, whereas Utz Certified expects that farming system intensification results in endogenous market price improvements. Both standards do not engage in providing access to finance and limit their attention only to the coffee plots. The essential difference between both approaches has been characterized by Petkova (2006) as 'top-down' *vs.* 'bottom-up' certification.

We rely on the indicated distinction in impact levels to discuss the effects of coffee certification as reported in the available literature. This approach is considered as a welcome addition to the existing comparative overview studies (see: Blackman & Rivera, 2010; Le Mare, 2008; Nelson & Pound, 2009) but permits more thorough insights into the—sometimes contradictory—effects that might occur at different system levels. Distinguishing between impact pathways also enables a more balanced appraisal of the net welfare effects that specific types of (small-scale) producers might expect from engagement in each of the certification regimes.

The first impact level concerns the *coffee plot*. Utz-Certified (and organic) certifications usually require investments for coffee upgrading and improved plot management practices.[3] Valkila (2009) and Valkila and Nygren (2010) point to the requirements of input use and labor intensification for obtaining certification that lead to higher costs and lower net margins. Renard (2005) and Ruben and Zuniga (2011) argue that Fairtrade coffee certification—compared to private labels—offers few incentives for quality upgrading. Apparently, guaranteed prices are not sufficient to mitigate prevailing risk-aversive