



# Do Specialty Coffees Increase Producer Prices? - An Analysis of the Marketing Behavior of Coffee Farmers in Costa Rica.

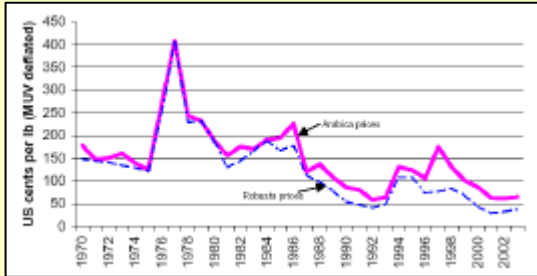


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## Introduction

Market liberalization and especially the abolition of the international coffee agreement in 1989 have increased volatility of world market coffee prices and boosted unequal distribution of income along the global coffee commodity chain. Expanding production contrasted with an almost stagnant consumption resulted in a worldwide oversupply and prices declining to their lowest levels in a century (Ponte 2002). According to a World Bank document, "Coffee prices have plummeted below the cost of production for many coffee producers, causing financial and social hardships to farmers and laborers" (Varangis et al. 2003).

### Arabica and Robusta Prices, 1970-2002



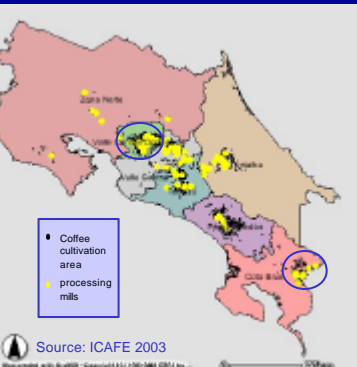
Source: Lewin et al. 2004

The crisis in the conventional coffee market, however, conceals another trend in the market, which deserves special attention as it promises higher revenues to farmers (Ponte 2002). This trend is characterized by the segmentation and specialization of consumer markets giving rise to specialty coffee segments. Specialty coffees can be distinguished into those that emphasize quality aspects (such as gourmet and estate coffees) and those that stand out for a specific production technology (such as organic, shade-grown and fair trade coffees) (Lewin et al. 2004). These segments usually obtain price premiums and therefore can potentially lead a way out of the crisis persistent in conventional coffee markets.

## Research Objective

The present study seeks to explore farmers' marketing performance in the coffee market under the adverse conditions caused by the crisis. The main objective is to find out which factors influence participation in specific marketing channels and whether participation in these channels leads to higher prices obtained by farmers. The analysis includes other farm-level factors that might help to explain differences in final producer prices.

## Research Area and Data Collection



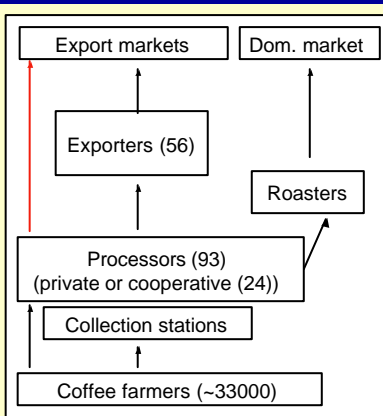
The study was carried out in two major coffee regions in Costa Rica: Valle Central Occidental (Central Valley) and Coto Brus (South). In the Central Valley coffee has been cultivated since the middle of the 19th century and today coffee is grown on 25.476 ha. The region is very accessible so that communication with potential buyers is easy. In contrast, coffee was brought to Coto Brus more recently during the 1950's. At present, 11.476 ha are cultivated with coffee. The area is much more dispersed and thus cultivation conditions and coffee quality vary. Due to the remoteness of the region, presence of market actors is more scarce than in the Central Valley. (ICAFE 2002).

Selection of households was based on a multi-stage cluster sampling. Cantons and districts within these two regions were weighted according to the number of coffee farmers in each cluster and finally in each district/community eight or nine farmers were selected randomly resulting in a total sample of 216 households. For the household survey a standardized questionnaire was designed to elicit information on coffee production, coffee marketing and household characteristics. This information was cross-checked with information obtained from the coffee mills operating in the survey region and from the Costa Rican Institute of Coffee (ICAFE)

Source: ICAFE 2003

## The Costa Rican Coffee Sector

The Costa Rican Institute of Coffee regulates the relations between all actors involved in the coffee sub-sector. Coffee farmers have to deliver their harvest within 24 hours to a processing plant to avoid post-harvest decay. On delivery farmers receive only an initial advance for their coffee. The final price is calculated as an average price for each processing firm and paid in November, almost one year after harvest. Processors wash, hull, dry and bag the coffee. Around 40% of the coffee is handled by cooperatives. After processing, green coffee is sold to exporting firms and a small percentage to national roasting companies producing for the Costa Rican consumers. Yet, in the face of the crisis an increasing number of processors is engaging in trade to establish direct customer relationships and enter specialty coffee market niches. These direct trade relationships open up new marketing channels for farmers.



## Theoretical Framework

With respect to the marketing channels, farmers in Costa Rica have to make two major decisions: 1. whether to market their coffee through a cooperative or a private processor, and 2. whether to market their coffee through a specialty coffee marketing channel or as conventional coffee.

Costa Rican cooperatives are farmer-owned and pursue an open-membership policy. On the part of the cooperatives there are no entry restrictions, thus, the decision to market via the cooperative is supposed to be a function of socio-economic characteristics of the farmer.

$$COOP_i = f(AGE_i, EDUC_i, SIZE_i)$$

Due to intergenerational differences in cooperative values older farmers are more likely to participate in cooperative marketing channels (Hakelius 1996). Likewise, higher education is expected to influence the probability of participating in a cooperative channel positively. Size of the coffee farm is expected to have a negative impact on cooperative membership as large farms do not have the need to pool their resources to achieve bargaining power.

Specialty coffee marketing channels usually require the coffee to meet certain quality standards. Therefore, besides socio-economic characteristics of the farmer, factors related to the quality of the coffee are relevant to explain participation in specialty channels.

$$SPEC_i = g(AGE_i, EDUC_i, SIZE_i, COOP_i, QUAL_i, Q\_ASSIST_i, FERT_i, LAB_i)$$

Drawing on the literature on adoptions of innovations, age is assumed to have a negative (willingness to change), education and size of the coffee enterprise (ability to bear risk) a positive sign. The importance of cooperatives to enable farmers to access specialized markets has often been highlighted (Varangis et al. 2003, Bacon 2005). We therefore expect a positive relationship between both channels. Quality related indicators (altitude is a strong indicator for coffee quality, intensive fertilizer and labor input is associated with higher quality beans) are expected to have a positive influence on the probability of participation. Likewise, farmers who received assistance in quality enhancing production practices are more likely to participate in specialty channels.

Finally, the price which farmers obtain for their coffee is a function of their choice of a marketing channel and household specific variables.

$$P_i = h(COOP_i, SPEC_i, QUAL_i, INFO_i, M\_ASSIST_i, EDUC_i, SIZE_i)$$

We expect participation in cooperative as well as specialty marketing channels to have a positive effect on the final price received by farmers. Irrespective of participation in specialty channels, higher quality coffee is likely to receive a higher price. Farmers who have access to price and market information and marketing assistance can make more informed marketing decisions, which should result in higher final prices. Education is important to allow farmers to interpret price and market information and use it in a way to receive higher prices. Size of the coffee enterprise is expected to have a positive influence on producer price, as larger farm enterprises have more bargaining power.

## Econometric Model

The marketing performance of farmers is analyzed by means of a two-stage probit model (Maddala 1983). In the first stage the farmers' choice of a marketing channel (cooperative/private, specialty/conventional) is analyzed. To account for likely correlation between these alternatives, a bivariate probit model is applied. In the second stage, the producer price is modeled as a function of the chosen marketing channel and farmer-specific characteristics. Yet, the choice of a marketing channel is likely to be influenced by the expected price. To deal with the resulting endogeneity problem, we obtain instruments for COOP and SPEC from the bivariate probit model and insert them in the price equation, which is then estimated by OLS.



## Results

As regards the decision to participate in a cooperative channel only age (with the expected positive sign) and a regional dummy variable are significant. With respect to participation in specialty coffee marketing channels all the quality related variables are significant and positive as expected. Socio-economic factors, such as age and education, are not significant, but the size of the coffee enterprise has a positive impact on participation. Furthermore, the model confirms the link between cooperatives and participation in specialized markets: participation in cooperative marketing channels increases the probability of participating in specialty coffee marketing channels.

Marketing performance, measured by the price farmers received for their coffee, is considerably improved by participation in both specialty and cooperative marketing channels. Furthermore, marketing performance increases if the household has access to reliable price information and marketing assistance. When controlling for the effect of participation in specialty coffee marketing channels, differences in quality are not reflected in the price obtained by farmers. Surprisingly, size of the coffee enterprise has a negative sign, indicating that small farms do better in marketing their coffee. This finding implies that bargaining power does not seem to have a major influence on coffee prices received in Costa Rica.

## Conclusion

The findings of this study show that participation in specialty coffee marketing channels increases producer prices. Participation in cooperative marketing channels also allows farmers to obtain higher prices. It is important to note the link between cooperatives and participation in new market developments. Implementation of new marketing channels in the segment of specialty coffees should be fostered to give farmers the opportunity to participate in new market developments and increase the value of their produce. Cooperatives can play an important role in facilitating these changes and helping farmers to adjust.



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