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***Café de Marcala* – Honduras' GI Approach to Achieving Reputation in the Coffee Market**

Ramona Teuber

*Research Fellow, Institute for Agricultural Policy and Market Research,
Justus-Liebig University Giessen, Germany*

The objective of the present article is to investigate the importance of geographical indications (GIs) in the coffee market, particularly for Honduran coffees. Geographical indications for coffee have emerged only recently, and only a few scientific studies have been carried out on this topic so far. The present article addresses this lack of research by highlighting recent developments in the coffee market and by presenting the results of a hedonic price analysis that used internet auction data for specialty coffees. The aim of this analysis is to investigate the influence of the region of origin on the achieved auction price of Honduran specialty coffee, controlling for other coffee attributes. The results indicate that coffees from the region Marcala, for which a denomination of origin was established in 2005, possess on average a higher quality than coffees grown in other Honduran regions. Consequently, since quality is the most important price determinant in the internet auctions, coffees from Marcala achieve on average a higher price than coffees from other Honduran coffee-growing regions. However, the hypothesis that Marcala coffees can also achieve a higher price due to an already established reputation could not be confirmed.

Keywords: Doha Round, pace of negotiations, stakeholders, WTO

Introduction

Whereas origin labeling for agro-food products has a rather long history, it has gained enormous attention in recent years in both national and international markets. It is a current topic in agricultural marketing and trade discussions as well as in disputes addressing the appropriate way of protecting intellectual property.

While in the past labels of origin¹ were mainly a marketing tool used by European countries, more and more developing countries have established legal systems for the protection of this kind of intellectual property. Especially, coffee-producing countries have been very active in recent years in establishing labels of origin for their coffees. Despite the efforts undertaken so far, most labels of origin for coffee are still informal, meaning they lack proper legal protection.

The aim of the present article is to explore the importance of the region of origin, sometimes also referred to as *terroir*, in the coffee market, with a particular focus on Honduras. Honduras was chosen as a case study for two reasons. First, the coffee economy is economically and socially important in Honduras. It is estimated that about one million people in Honduras are directly and indirectly dependent on the coffee economy, and about 8 percent of the national GDP and 33 percent of the agricultural GDP can arise from the coffee sector (IHCAFE, 2007a). Second, Honduras established labels of origin for coffee very recently with the objective of gaining recognition as a high-quality producer in the main export markets. Central research questions in this context are

1. How large is the market for GI-labeled coffees so far, and what future developments can be expected?
2. Is the region of origin already a significant price determinant in these markets?
3. Which image is connected with Honduran coffee in the international market, and what can be expected from the GI approach?

The remainder of the article is structured as follows. The next section provides an overview of the specialty coffee market in general and the importance of this segment for Honduras in particular. After this, the present situation with respect to use of labels of origin for Honduran coffee is presented. The hedonic methodology used for the empirical investigation of “the value of *terroir*”, as well as relevant studies, will be discussed briefly in the subsequent section, followed by a presentation of the hedonic regression results. The final section contains conclusions and prospects for future research.

The Specialty Coffee Market

General Overview

Due to a growing interest in health, environmental and social issues, consumer demand for so-called sustainable and high-quality products has increased over the past years. This is also true for the coffee market. The desire for variety and high quality has resulted in the creation of niche markets, in which labeling and certification play a central role. In the case of coffee, these niche markets are often denoted the *specialty* or *differentiated* coffee market (Lewin et al., 2004; Ponte, 2002).

There is no clear definition of the term *specialty coffees*, but most often it refers to high-quality beans and sustainable production processes, such as organic, fair trade and shade-grown. Lewin et al. (2004, p.105) define *differentiated coffees* as coffees that can “be clearly distinguished because of distinct origin, defined process, or exceptional characteristics like superior taste or zero defects.” This definition points out that in contrast to the mainstream coffee markets, in which blends dominate, the origin of the coffee is a central characteristic in the specialty segment. Coffee coming from just one origin is called single-origin, where the origin can comprise a single estate, e.g., *Nicaraguan Estate Santa Lucia*, a region, e.g., *Costa Rica Tarrazu*, or even a whole country, e.g., *Café de Colombia*.

Unfortunately, nearly no data exist with regard to the volume or value of the specialty coffee market in general and the single-origin market in particular. There are estimations that specialty coffees make up about 10 percent of total production and about 9 to 12 percent of the import volume in the most developed specialty coffee markets, such as North America, Japan and Europe (Lewin et al., 2004; Scholer, 2004). These estimates document that the specialty coffee market is still a niche market (Giovannucci and Koekoek, 2003). However, most authors agree that in contrast to the mass market, which is more or less saturated in the main consuming countries such as the United States and Europe, this niche market has grown tremendously in recent years and there is still potential for further growth (Giovannucci, 2001; Ponte and Daviron, 2005).

According to data provided by the Instituto Hondureño del Café (IHCAFE), Honduras exported 4.2 million bags of coffee² in the harvest year 2006/2007. These coffee exports generated export revenues in the amount of 470 million US\$. Specialty coffee exports added up to 262,425 bags, representing 6.3 percent of all Honduran coffee exports. The category *specialty coffee exports* comprises organic, fair trade, Rainforest Alliance and Utz Kapeh certified coffees, as well as coffees labelled as Genuine Marcala. The most important categories in terms of volume in 2006/2007 were Utz Kapeh certified coffees, accounting for over 20 percent of the specialty coffee exports, followed by Genuine Marcala labeled coffee, with 17 percent. The

third largest category (16 percent) consisted of coffees with the double-certification of organic/fair trade (IHCAFE, 2007b).

The Terroir Concept

In the specialty coffee market, coffee is often compared to wine, due to the high variety of flavour profiles both products offer. It is said that the flavour profile of each of these products is mostly determined by *terroir* (SCAA, 2007). The *terroir* concept was first developed for wine and viticulture, but nowadays the concept is applied to a broad range of foodstuffs. The underlying idea of the *terroir* concept is that special geographical microclimates produce food products with a unique flavour profile that cannot be produced elsewhere (Barham, 2003; Daviron and Ponte, 2005). In a narrow sense, *terroir* refers only to a physical environment, including soil, elevation, climate and related factors. In a broader sense, *terroir* also includes the human environment, i.e., traditional knowledge, local skills and processing practices (Broude, 2005; Galland et al., 2006).

An increasing interest in the *terroir* concept for coffee is reflected in the scientific literature. Recent studies have investigated the relationship between cup quality and environmental factors (Avelion et al., 2005; Decazy et al., 2003). The results of these studies suggest that major determinants of cup quality are altitude, rainfall, soil type, shading, varieties, harvesting and post-harvesting processes.

Another prominent feature of the wine industry, the review, cupping and rating of different wines, can nowadays be found also in the coffee market. Kenneth Parker founded *Coffee Review* in 1997 – similar to the famous wine guide *The Wine Advocate*, by Robert Parker – with the aim of educating coffee drinkers by offering an easy-to-use coffee guide based on blind reviews (*Coffee Review*, 2007). This initiative highlights another development in the coffee market, the stressing of the importance of consumer education. A consumer who is not aware that there are more coffee profiles than just “normal” blends will most likely not miss anything while just drinking the same coffee every day. Thus, consumer education about the different coffee-growing regions, that is to say about the different coffee *terroirs* and their distinctive flavour profiles, is considered to be a crucial aspect of establishing a successful label of origin.

Establishment and Use of Labels of Origin for Coffee – Status Quo in Honduras³

Nearly all the major coffee-producing countries have already identified and established labels of origin for their coffees. But in many cases these labels are still informal; that is to say no certification, trademark or other form of legal protection has been achieved so far. This is, for example, the case in most Latin American countries,

such as Guatemala and Costa Rica, two countries very well known for their high-quality coffees. Both countries have identified different coffee-growing regions characterized by differing microclimates and are now trying to formalize designation of these by legal means (ANACAFE, 2007; SCACR, 2007). However, only one Guatemalan coffee-growing region is certified to date: Genuine Antigua Coffee.

The situation in Honduras is similar. A short time ago Honduras identified five different coffee-growing regions, each producing coffee with a distinct flavour profile. But only one region has so far been registered as a *denominación de origen protegida* (DO).⁴ *Café de Marcala* has been registered since November 2005 and not only is the first DO in Honduras but was also the first in Central America (IHCAFE, 2007c; see figure 1 for the logo). The DO concept includes explicitly the term *terroir* and stresses the fact that the specific product quality or specific product characteristics are essentially due to the geographical environment, i.e., natural and human factors, in which the production takes place. According to IHCAFE, the establishment of this DO is seen as an opportunity to create awareness of Honduran coffees in the EU and Japan, the main export markets for Honduran coffee. This development of awareness of the Honduras as a high-quality producer is necessary, since up to now Honduran coffees have been used only for blending, resulting in low prices being paid for Honduran coffee. Other actors within the specialty coffee market share this assessment of the importance of consumer education. The Terroir Coffee Company, a specialty roaster in the United States, states that Honduran coffees have the same level of quality as coffees from their more famous neighbors Guatemala, Nicaragua and El Salvador, but have not received any special recognition yet. From the point of view of the company, one reason for this lack of reputation is the poor infrastructure in Honduras, which makes purchasing Honduran coffees a more complicated and more expensive process than purchasing from other Latin American countries (George Howell's Terroir Coffee, 2007). These circumstances – a low reputation and the resulting low prices – have led to the situation where Honduran coffee is smuggled into neighbouring Guatemala to gain from higher prices paid for Guatemalan coffee (F.O. Licht's *International Coffee Report*, 2007). Moreover, it is reported that in recent years the term *Café de Marcala* has been misused in such a way that low-quality coffee not being produced in this region has been labeled as *Café de Marcala*. This usurpation has led to a loss of reputation and, consequently, to lower coffee prices being paid for genuine *Café de Marcala* (Osorto, 2007). Therefore, the legal protection of the name is considered a necessary step in order to prevent continuing deterioration of the established reputation.



Figure 1 Logo Café de Marcala

Source: Osorto (2007).

Empirical Research Approach

Hedonic Pricing Analysis

Another feature of the specialty coffee sector is internet auctions for award-winning high-quality coffees. The most famous one is the Cup of Excellence (COE) competition. The first internet auction for specialty coffee took place in Brazil in 1999. By now, eight Latin American countries, namely Bolivia, Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua, take part in the COE program and sometimes this competition is called the *Oscar* for coffee (COE, 2007). All data regarding the participating farms, the coffee characteristics and the achieved auction prices are available on the COE website. These data were used to conduct a hedonic pricing analysis in order to investigate the value of each coffee characteristic, especially focusing on the value of the region of origin, interpretable as the value of *terroir*.

Hedonic pricing analysis is a valuable tool in estimating implicit prices for individual product characteristics. The underlying idea of the hedonic approach is that products offer a bundle of product characteristics, and consumers buy products because of these utility-bearing characteristics (Rosen, 1974). Hence, a product price can be interpreted as the sum of the implicit prices for each product attribute, and the hedonic price model can be used to estimate these implicit prices.

Whereas a rather large number of hedonic studies can be found for wine, only very few hedonic studies have been carried out for coffee so far. Galarraga and Markandya (2004) deal with the implicit value of fair trade and organic labeling for coffee. Moreover, two studies have used the COE data to investigate the price determinants of specialty coffee in internet auctions (Donnet et al., 2007; Teuber, 2007). Teuber (2007) estimated a hedonic regression based on pooled data coming from specialty coffee auctions covering the period 2003-2007. The explanatory

variables included agronomic variables as well as quality ratings and reputation variables. The results suggested that the main price determinants for specialty coffee are the achieved score and the ranking in the competition, both having a significant positive influence on the auction price. A significant negative impact was found for the quantity sold, indicating that buyers value limited availability, which can be seen as a proxy for exclusiveness. Concerning the country-of-origin effect, the results indicated that Guatemalan coffees possess the highest reputation, since these coffees receive a 95 percent price premium compared to Honduran coffees. Moreover, Honduran coffees are discounted compared to all other origins included in the analysis. These results support the hypothesis that Honduran coffees have not yet established a good reputation. Donnet et al. (2007) reported similar results. Additionally, Teuber (2007) estimated hedonic regressions at the regional level for Colombian and Ethiopian coffee in order to investigate region-of-origin effects. For both countries an existing regional price differentiation could be found.

The present article differs from the two studies mentioned above in the way in which the regional approach is adopted and applied to Honduran coffees sold in the COE auctions. Given the recent establishment of the DO for *Café de Marcala*, the research question arising in this context is whether or not a significant influence of the region of origin on the price paid for Honduran specialty coffee can already be identified, as was the case for Colombian and Ethiopian coffees.

Data and Results

All data originate from the Cup of Excellence website. The procedure of the COE programme is as follows. Any coffee farmer located in the country in which the competition takes place can submit a coffee sample. In a first step, a pre-selection of the coffee samples by visual inspection and cupping analysis is conducted. After this, the pre-screened coffees are cupped by a national jury, twice. All coffees receive a score ranking from 0 to 100, and only the top coffees – those scoring 84 and above – enter the third stage of the competition.⁵ Finally, the coffees are cupped by an international jury, and the best coffees are awarded the Cup of Excellence. After this procedure, all data regarding the coffee farms offering the coffee samples and their achieved results in the competition are published online.

The dependent variable of the hedonic price analysis is the price the coffee achieved in the internet auction, expressed in US\$ per pound. The chosen characteristics, which represent the set of independent variables, comply with the information presented to the bidders in advance at the COE website. Table 1 presents descriptions and descriptive statistics of the included independent variables. The coffee variety, the coffee-growing region and certifications are included as categorical dummy variables. The score and the altitude are both proxies for general coffee

quality, and the lot size is a proxy for scarcity and exclusiveness. Unfortunately, some variables, such as precipitation, soil quality and dummies for different harvest and post-harvest processes, could not be included because of missing or inconsistent data.

With regard to the already established DO for *Café de Marcala*, the question of whether or not coffees grown in this region differ qualitatively from other Honduran coffees is of special interest. Therefore, in a first step a simple equality test of the score means was conducted to investigate whether significant differences between coffees from the Montecillos-Marcala and the other growing regions exist. The results indicate that the mean score of Montecillos-Marcala coffees differs significantly from the mean score of coffees coming from a non-Montecillos region (see Table 2).

Table 1 Descriptive Statistics of Honduran Coffees Sold in COE Auctions, 2004-2007

Variable	Description	Mean	Standard deviation
<i>price</i>	price in US\$ per pound of coffee	3.82	2.79
<i>score</i>	score achieved in the cupping competition (ranging from 84 to 100)	87.04	2.63
<i>1st rank</i>	1 if the coffee was ranked first	0.03	0.18
<i>lot size</i>	quantity of coffee sold, expressed in kg	1300	444
<i>altitude</i>	altitude, in metres above sea level, at which the coffee was grown	1520	145
<i>farm size</i>	farm size in ha	24.90	23.59
<i>coffee variety</i>			
Bourbon	1 if Bourbon	0.03	0.16
Catuai	1 if Catuai	0.54	0.50
Caturra	1 if Caturra	0.16	0.37
IHC-90	1 if IHC-90	0.03	0.18
Pacamara	1 if Pacamara	0.03	0.16
Pacas	1 if Pacas	0.14	0.35
others	1 if other variety	0.06	0.24
<i>region^{a)}</i>			
Agalta Tropical	1 if originating in Agalta Tropical	0.19	0.39
Azul Meambar	1 if originating in Azul Meambar	0.05	0.22
Copán	1 if originating in Copán	0.24	0.42
Montecillos-Marcala	1 if originating in Montecillos-Marcala	0.36	0.48
Opalaca	1 if originating in Opalaca	0.16	0.37
<i>certification</i>			
organic	1 if certified organic	0.02	0.13
none	1 if not certified	0.98	0.13
<i>buyer</i>			
European	1 if bought by a European company	0.20	0.40
Japanese	1 if bought by a Japanese company	0.47	0.50
North American	1 if bought by a North American company	0.32	0.47
<i>total number of coffees sold</i>		119	

^{a)} One shortcoming of the Honduran COE data is that these data inform only about the administrative region in which the farm is located. The IHCAFE website offers two maps, with the locations of the awarded farms and the classifications into one of the five newly defined growing regions. These maps are available for the years 2005 and 2006. For the two remaining years, each participating farm had to be allocated to one of the five coffee regions. This was done using GoogleEarth and a map of the newly defined coffee-growing regions offered by IHCAFE. The resulting regional dummies are the five coffee-growing regions, namely Azul Meambar, Agalta Tropical, Copán, Montecillos-Marcala and Opalaca.

Table 2 Result of the t-test for Equality of Means of Score between Montecillos Coffee and Non-Montecillos Coffee

Test for equality of means of SCORE
Categorized by values of MONTECILLOS
Included observations: 117

Method	df	Value	Probability
t-test	115	2.395107	0.0182
Anova F-statistic	(1, 115)	5.736537	0.0182

Source: own calculations.

Following this preliminary analysis, a hedonic price regression was estimated (see the technical annex for details). Two models were estimated, a comprehensive one including all variables under consideration and a reduced one containing solely statistically significant variables. The results of the model are presented in table 3.

Table 3 OLS Hedonic Regression Results for Honduran Coffees

Dependent Variable	Comprehensive Model		Reduced Model	
	Log(price)			
Variable	Coefficient	p-Value	Coefficient	p-Value
Log(Score)	10.738***	(0.000)	10.308***	(0.000)
1 st Rank	0.589*	(0.046)	0.613*	(0.000)
Log(Lot Size)	-0.431***	(0.000)	-0.442***	(0.000)
Log(Altitude)				
Log(Farm size)	0.378	(0.103)	0.374*	(0.037)
	-0.006	(0.843)		
Variety (Ref. Bourbon)				
Catuai	0.068	(0.668)		
Caturra	0.096	(0.563)		
IHC-90	-0.143	(0.418)		
Pacamara	0.088	(0.639)		
Pacas	0.101	(0.561)		
Others	0.063	(0.741)		
Regions (Ref. Montecillos-Marcala)				
Agalta Tropical	0.052	(0.528)		
Azul Meambar	0.004	(0.977)		
Copán	0.001	(0.986)		
Opalaca	0.086	(0.362)		
Certification (Ref. None)				
Organic	0.109	(0.626)		
Buyer (Ref. Japanese Company)				
European Company	0.046	(0.542)		
US Company	0.019	(0.736)		
Year (Ref. 2004)				
2005	-0.344**	(0.008)	-0.350**	(0.004)
2006	0.007	(0.951)	0.003	(0.982)
2007	0.453***	(0.000)	0.420**	(0.000)
Adjusted R-squared	0.80		0.82	
F-Statistic	22.07		71.73	
Number of observations	112		119	

Notes: *, **, *** denotes significance at the 5 % -, 1 % - and 0,1 % - level, respectively.
Source: own calculations.

The explanatory power reflected by the \bar{R}^2 is rather good in both models. The *score* and the *lot size* are highly significant in both specifications. If the *score* increases by 1 percent, the price increases by 10 percent; in other words, a one-point increase results in an 11 percent price increase. In contrast, the *lot size* has a negative impact on the price. This underlines the assumption that scarcity, which can also be interpreted as exclusiveness, is valued by buyers. Furthermore, it can be concluded from a price flexibility coefficient below unity that the demand for these auctioned specialty coffees is highly price-elastic (Tomek and Robinson, 2002, p.53).

The *1st rank* is also significant, but only at the 95 percent level. A coffee that was ranked first in the cupping competition achieved on average an 85 percent higher price⁶ compared to the lower-ranked coffees. The variable *altitude* is only significant at the 95 percent level in the reduced model, in which the *variety* and *regional*

dummies are excluded. The reduced model reveals that inclusion of the *variety* and *regional* dummies neither alters the estimated coefficients of the other included variables nor explains any variance of the achieved price. None of the *variety* or *regional* dummy variables are statistically significant (see Table 3). Additionally, some models were estimated with the inclusion of coffee variety groups, i.e., the coffee varieties were not included separately but as a categorical dummy with three categories. This approach is based on a statement by Knox and Sheldon Huffaker (1996) that traditional varieties, such as bourbon and typica, are often preferred by specialty coffee buyers because of their superior and distinctive taste qualities. Hence, the varieties bourbon and typica as traditional ones constituted the categorical dummy *traditional varieties*. The modern hybrids caturra, catuai and IHC-90 were grouped together as the *modern varieties*, and the remaining two varieties, pacas and pacamara, constituted the group *other varieties*. These two varieties are not considered to be traditional varieties; nevertheless, they are often considered to offer an extraordinary cup quality. Ultimately, even the grouping into *traditional*, *modern* and *other* varieties did not lead to any significant results.

A possible explanation for the insignificance of both the *regional* and the *variety* dummies could be that these variables are already embodied in the *score* variable and therefore no significant impact of these variables could be found in the hedonic regression. This would be in line with the results from the t-test for equality of means of score (Table 2). Therefore, some models were estimated excluding the *score* and including the *variety* and *region* dummies. But again, no significant impact of the region could be detected. These results are in contrast to the findings of Donnet et al. (2007) and Teuber (2007), who found significant country-of-origin and region-of-origin effects even after controlling for quality differences by including the *score* variable and the *origin* dummies jointly. This is not the case for Honduran coffees.

As could already be seen from the descriptive statistics, the only certification scheme that can be found for Honduran COE coffees is the organic one. Only two coffees out of 119 were certified organic. The certification has no statistically significant impact on the achieved price in this data set. The same is true for the location of the company buying the coffee.

Concluding Remarks

A hedonic price function was estimated for Honduran specialty coffee. The results suggest that the main price determinants are the achieved score in the cupping competition and the 1st rank. This is useful information, since both attributes can easily be employed in a marketing strategy. They can be communicated to consumers without any major explanations. Furthermore, the quantity sold is highly significant,

pointing out that buyers value scarcity and exclusivity. This observation is consistent with findings from the wine industry.

Earlier studies found that, at the country level, Honduran coffees are sold at a price discount compared to coffees originating in other countries, indicating that Honduras has not been able to establish a reputation for high-quality coffees so far. In order to change this fact, Honduras, particularly the Instituto Hondureño del Café, has identified five different coffee *terroirs* and is trying to establish them in international export markets. In a first step, the term *Café de Marcala* was protected as a denomination of origin in 2005. It seems that coffees from this region offered in the COE auctions have a higher quality, reflected in the higher average score these coffees receive in the cupping competitions. However, in the hedonic regression no significant impact of the region itself could be detected after controlling for quality differences by including the score as a quality proxy. The score along with the 1st rank and the lot size are the main price determinants in the hedonic regression. These findings indicate that at the moment Honduran coffee *terroirs* do not yet influence the coffee price directly by means of a well-established reputation but rather indirectly by offering different coffee qualities.

Considering the efforts many countries have already undertaken to establish labels of origin for their coffees, the fact must be stressed that establishing a label of origin does not automatically lead to consumer awareness and recognition of the label in the consumer market. Creating a reputation takes time and, especially, financial expenditures. A commercially successful GI will not emerge simply as a result of protection of the term *Café de Marcala* in the domestic market. It is even more important to protect the term in the export markets and to create awareness of the name. In order to become successful, a label of origin or a GI has to be managed the same way a brand has to be managed. On the other hand, internet auctions for specialty coffees have helped to make buyers aware of the different coffee origins and have fuelled the growth of this niche market. According to a McKinsey study assessing the participation of Nicaragua in the COE competition, Nicaragua was able to expand its specialty coffee exports expressed as a share of total coffee exports from 2 percent in 2001 to 15 percent in 2005. Furthermore, the COE has been an incentive for quality improvements and has greatly enhanced the reputation of Nicaraguan coffee (McKinsey 2006). The same could turn out to be the case for Honduras.

References

- ANACAFE. 2007. Available online at <http://www.guatemalancoffees.com> (accessed 21.11.2007).
- Avelion, J., B. Barboza, J. C. Araya, C. Fonseca, F. Davrieux, B. Guyot, and C. Cilas. 2005. Effects of slope exposure, altitude and yield on coffee quality in two altitude *terroirs* of Costa Rica, Orosi and Santa Mara de Dota. *Journal of the Science of Food and Agriculture* 85: 1869-1876.
- Barham, E. 2003. Translating terroir: the global challenge of French AOC labelling. *Journal of Rural Studies* 19(1): 127-138.
- Broude, T. 2005. Taking “trade and culture” seriously: geographical indications and cultural protection in WTO law. *Journal of International Economic Law* 26(4): 633-692.
- COE. 2007. Website of Cup of Excellence. Available online at <http://www.cupofexcellence.org> (accessed 10.12.2007).
- Coffee Review*. 2007. Available online at http://www.coffeereview.com/about_us.cfm (accessed 10.11.2007).
- Daviron, B., and S. Ponte. 2005. *The Coffee Paradox*. London: Zed Books.
- Decazy, F., J. Avelion, B. Guyot, J. J. Perriot, C. Pineda, and C. Cilas. 2003. Quality of different Honduran coffees in relation to several environments. *Sensory and Nutritive Qualities of Food* 68(7): 2356-2361.
- Donnet, L., D. Weatherspoon, and J. P. Hoehn. 2007. Price determinants in top quality e-auctioned specialty coffees. Staff Paper 2007-02, Department of Agricultural Economics, Michigan State University, Michigan.
- F. O. Licht. 2007. *International Coffee Report* 22(3). Kent, UK.
- Galarraga, I., and A. Markandya. 2004. Economic techniques to estimate the demand for sustainable products: a case study for fair trade and organic coffee in the United Kingdom. *Economia Agraria y Recursos Naturales* 4 (7): 109-134.
- Galland, J.-C., J. Avelino, A. Larrain, and C. Montagnon. 2006. Origin coffees: are appellations of origin on the horizon? In *Coffee: terroirs and qualities*, ed. C. Montagnon. Versailles: Ed. Quae.
- George Horwell’s Terroir Coffee. 2007. Website – Coffees of Honduras. Available online at http://www.terroircoffee.com/store/more_info.php?gid=256 (accessed 10.11.2007).
- Giovanucci, D. 2001 Sustainable coffee survey of the North American specialty coffee industry. Long Beach, CA: Specialty Coffee Association of America.
- Giovanucci, D., and S. Ponte. 2005. Standards as a new form of social contract? Sustainability initiatives in the coffee industry. *Food Policy* 30 (3): 284-301.
- Giovanucci, D., and K. J. Koekoek. 2003. The state of sustainable coffee: a study of twelve major markets. London and Winnipeg: International Coffee Organisation and International Institute for Sustainable Development.

- Halvorsen, R., and R. Palmquist. 1980. The interpretation of dummy variables in semilogarithmic equations. *The American Economic Review* 70(3): 474-475.
- Houck, J. P. 1965. The relationship of direct price flexibilities to direct price elasticities. *Journal of Farm Economics* 47(3): 789-792.
- IHCAFE. 2007a. Generalidades del café de Honduras. Available online at http://www.cafedehonduras.org/ihcafe/administrador/aa_archivos/documentos/generalidades_cafe.pdf (accessed 05.01.2008).
- IHCAFE. 2007b. Gerencia de comercializacion, informe de Cierre Cosecha 2006-2007. Available online at http://www.cafedehonduras.org/ihcafe/administrador/aa_archivos/documentos/informe_%202006-2007.pdf (accessed 18.03.2008).
- IHCAFE. 2007c. Study on denomination of origin. Available online at http://www.cafedehonduras.org/ihcafe/administrador/aa_archivos/documentos/denominaciones.pdf.pdf (accessed 05.01.2008).
- Knox, K., and J. Sheldon Huffaker. 1996. *Coffee Basics: A Quick and Easy Guide*. New York: Wiley & Sons.
- Lewin, B., D. Giovannucci, and P. Varangis. 2004. Coffee markets. New paradigms in global supply and demand. Agriculture and Rural Development Discussion Paper 3. Washington: The World Bank.
- McKinsey. 2006. Nicaragua cup of excellence: assessment of impact and opportunity. Available online at <http://www.cupofexcellence.org/Portals/0/NicaMcKinseyReport.pdf>. (accessed 10.10.2007).
- Osorto, D. 2007. Denominación de origen del café hondureño. Presentation at the Semana del Café, San Salvador, El Salvador, 15 October 2007.
- Ponte, S., and B. Daviron. 2005. *The Coffee Paradox*. London: Zed Books.
- Ponte, S. 2002. Standards, trade and equity: lessons from the specialty coffee industry. CDR Working Paper 02.13. Copenhagen: Centre for Development Research.
- Rosen, S. 1974. Hedonic prices and implicit markets: product differentiation in perfect competition. *Journal of Political Economy* 82(1): 34-55.
- SCAA. 2007. Specialty coffee facts. Available online at <http://www.scaa.org/pdfs/specialtycoffeefacts.pdf> (accessed 8.08.2007)
- SCACR. 2007. Website of the Specialty Coffee Association of Costa Rica, Our Coffees. Available online at http://www.scacr.com/en/our_coffee.php (accessed 05.09.2007).
- Scholer, M. 2004. Bitter or better future for coffee producers? *International Trade Forum* Issue 2/2004. Geneva.
- Teuber, R. 2007. Geographical indications of origin as a tool of product differentiation – the case of coffee. In *International Marketing and International Trade of Quality Food Products*, eds. M. Canavari, D. Ragazzi, and R. Spadoni. Proceedings CD-Rom of the 105th Seminar of the European Association of Agricultural Economists, Bologna, March 8-10, 2007. Bologna: Avenue Media.

Tomek, W. G., and K. L. Robinson. 2002. *Agricultural Product Prices*. 4th ed. Ithaca and London: Cornell University Press.

Endnotes

1. There are several different types of labels of origin, e.g., geographical indications, appellations of origin, denominations of origin and indications of source. Since other authors cover the investigation of these different legal approaches, and to simplify matters, the general terms *GI* and *label of origin* will be used in this article unless a certain label is addressed explicitly.
2. One coffee bag contains 46 kg of green coffee beans.
3. A comprehensive overview of labels of origin for coffee can be found in Teuber (2007).
4. In English this term is translated as either “denomination of origin” or “appellation of origin”. Both terms describe the same type of protection and are interchangeable.
5. This type of ranking, using a 100-point scale, was developed in the wine industry by Robert Parker and can now be found also in the coffee industry.
6. Since the dependent variable appears in logarithmic form, the percentage interpretation of the dummy variables has to be calculated as $100 * (\exp(\beta) - 1)$ (Halvorsen and Palmquist, 1980).

The technical annex to this paper, pages 146-148 is available as a separate document.

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